Volksbanken Raiffeisenbanken
Cooperative Financial Network

2023
Annual Report

DZ BANK Group

Key figures

DZ BANK GROUP

€ million	2023	2022
FINANCIAL PERFORMANCE		
Income [1]	8,149	7,004
Loss allowances	-362	-304
Profit before taxes	3,189	2,252
Net profit	2,234	1,341
Cost/income ratio (percent)	56.4	63.5

	Dec. 31, 2023	Dec. 31, 2022
FINANCIAL POSITION		
Assets		
Loans and advances to banks	128,867	123,444
Loans and advances to customers	204,776	203,646
Financial assets held for trading	34,961	48,909
Investments	47,970	43,393
Investments held by insurance companies	115,568	105,548
Remaining assets	112,448	103,427
Equity and liabilities		
Deposits from banks	174,580	186,787
Deposits from customers	159,641	159,429
Debt certificates issued including bonds	103,768	82,349
Financial liabilities held for trading	47,675	52,478
Insurance contract liabilities	105,151	98,328
Remaining liabilities	22,704	21,370
Equity	31,069	27,625
TOTAL ASSETS/TOTAL EQUITY AND LIABILITIES	644,589	628,365
Volume of business	1,195,012	1,132,269

	Dec. 31, 2023	Dec. 31, 2022
RISK POSITION		
LIQUIDITY ADEQUACY		
DZ BANK Group		
Minimum liquidity surplus (€ billion)	18.5	14.3
DZ BANK banking group		
Liquidity coverage ratio (LCR, percent)	145.8	145.9
Net stable funding ratio (NSFR, percent)	126.5	122.3
CAPITAL ADEQUACY		
DZ BANK Group		
Economic capital adequacy (percent)	213.8	222.4
DZ BANK financial conglomerate		
Coverage ratio (percent)	154.6	151.2
DZ BANK banking group		
Common equity Tier 1 capital ratio (percent)	15.5	13.7
Tier 1 capital ratio (percent)	17.7	15.2
Total capital ratio (percent)	20.1	18.0
Leverage ratio (percent)	6.2	4.7
MREL ratio as a percentage of risk-weighted assets	42.4	38.3
MREL ratio as a percentage of the leverage ratio exposure	14.9	11.9
Subordinated MREL ratio as a percentage of risk-weighted assets	31.0	28.5
Subordinated MREL ratio as a percentage of the leverage ratio exposure	10.9	8.9
AVERAGE NUMBER OF EMPLOYEES	33,622	32,985
LONG-TERM RATING		
Standard & Poor's	A+	A+
Moody's Investors Service	Aa2	Aa2
Fitch Ratings	AA-	AA-

1 Total of net interest income, net fee and commission income, gains and losses on trading activities, gains and losses on investments, other gains and losses on valuation of financial instruments, gains and losses from the derecognition of financial assets measured at amortized cost, net income from insurance business, and other net operating income.

Contents

Note

The figures in this report are rounded to the nearest whole number. This may give rise to small discrepancies between the totals shown in the tables and diagrams and totals calculated from the individual values shown.

The English version of this report is a convenience translation. In cases of doubt, the German original version shall prevail.

Uwe Fröhlich (left) and Dr. Cornelius Riese, Co-Chief Executive Officers

Dear Shareholders,

The DZ BANK Group can look back on 2023 as a very good year. With profit before taxes of €3.2 billion (2022: €2.3 billion), we significantly exceeded our expectations.

We achieved this excellent result in conditions that remained very challenging. Geopolitical risks and conflicts continued to take a heavy toll, weakening the global economic picture and thus depressing the German economy. Facing increased energy costs and a high level of uncertainty, businesses were reluctant to invest. Nevertheless, the capital markets fared well overall. Spurred on by the easing of inflationary pressure, the stock markets in particular reached new highs toward the end of the year. The shift in interest-rate policy also fundamentally improved the business environment for financial services providers.

In these conditions, we advanced our operating business thanks to our customers' confidence in our products and services and to our close collaboration with the local cooperative banks. This was particularly the case for DZ BANK – central institution and corporate bank, which notched up further growth in the Corporate Banking, Capital Markets, and Transaction Banking business lines and once again made a substantial contribution to the overall result. In Corporate Banking, the lending volume rose in Germany and in the Structured Finance division. Sales of investment certificates and interest-rate products to retail customers also reached an all-time high. In Transaction Banking, the central institution and corporate bank also reported record numbers of cards sold and transactions handled.

At R+V Versicherung, a significant improvement in gains and losses on investments held by insurance companies helped it to achieve a high level of profit. Premiums also increased, especially in non-life insurance. Union Investment generated a very satisfying contribution to profits too, also thanks to strong inflows into mutual funds once again. Despite the challenging conditions for real estate, DZ HYP's total volume of finance held steady and it generated a good profit before taxes amid an unremarkable risk situation. Bausparkasse Schwäbisch Hall registered brisk new home savings business and increased its market share yet again. DZ PRIVATBANK's profit before taxes rose sharply. This was primarily thanks to the positive effects of the shift in interest-rate policy, along with higher inflows in private banking and fund services.

The key results in detail:

At €4.33 billion, the **net interest income** of the DZ BANK Group was significantly higher than the figure for 2022 of €3.32 billion. This was primarily thanks to healthy corporate banking business at the central institution and corporate bank. Furthermore, there were positive accounting-related effects on net interest income, with a countervailing negative impact on gains and losses on trading activities. **Net fee and commission income** amounted to €2.81 billion, which was on a par with the high prior-year level (2022: €2.75 billion). This was primarily due to robust fund inflows at Union Investment. **Gains and losses on trading activities** deteriorated to a net loss of €175 million (2022: net gain of €823 million) owing to negative accounting-related effects, with a countervailing positive impact on net interest income. In operational terms, however, the central institution and corporate bank's capital markets business continued to perform very well. **Gains and losses on investments** improved to a net loss of €72 million (2022: net loss of €119 million). **Other gains and losses on valuation of financial instruments** increased year on year, amounting to a net gain of €298 million (2022: net loss of €286 million). This can be explained by positive effects in the valuation of guarantee commitments and own-account investing at Union Investment. Thanks to the upturn in the capital markets, **net income from insurance business** improved markedly to €891 million (2022: €276 million). **Loss allowances** amounted to a net addition of €362 million (2022: net addition of €304 million). Inflation and capital expenditure on infrastructure meant that **administrative expenses** rose slightly to €4.60 billion (2022: €4.45 billion).

These very encouraging results are testimony to the dedication and hard work of our employees and, on behalf of the entire Board of Managing Directors, we would like to express our gratitude to them.

The capital adequacy of the DZ BANK Group improved markedly in 2023, with the common equity Tier 1 capital ratio increasing to 15.5 percent as at December 31, 2023 (December 31, 2022: 13.7 percent). This was due to profit retention, careful management of risk-weighted assets and, in particular, the positive impact of the introduction of IFRS 17 at R+V Versicherung. Moreover, we further strengthened our capital base in 2023 by placing AT1 bonds in a volume of €1.1 billion.

It is important to us that our shareholders benefit from the DZ BANK Group's success. In view of our strong business performance, we will propose a dividend of 25 cents per share to the Annual General Meeting. We are delighted to continue the dividend trend of recent years and are raising the dividend range to between 22 and 25 cents per share, depending on the profit for the year.

The prospects for the global economy in 2024 have recently brightened slightly, which should benefit Germany's export-dependent economy too. The rate of inflation is also a source of optimism, having moved back much closer to the target of 2 percent in January. Moreover, most companies are putting in a robust performance and continuing to generate profits, thereby injecting momentum into the equity markets. However, geopolitical developments are still creating considerable uncertainty, which is weighing on consumer spending and companies' propensity to invest. The German economy is likely to be very slow to pick up speed again. Our economists therefore anticipate growth of just 0.5 percent for 2024.

At the start of the new year, we are seeing an encouragingly brisk level of customer business, for example the provision of support for primary market issues. We also see further growth opportunities and want to expand our market presence in all business lines. This will allow us to maintain the positive business performance that we achieved in previous years. We have taken our earnings to a new level and are optimistic that we can keep them there in the long term. In view of this, we are raising our long-term target range for profit before taxes to between €2.0 billion and €2.5 billion.

To achieve our target profit, we refine our business models on an ongoing basis, harnessing business potential in partnership with the cooperative banks and stepping up activities focused on our strategic core priorities. The digitalization of processes and support for the sustainable transformation of the economy remain key tasks for the financial sector. The DZ BANK Group is making good progress in this regard and has set itself groupwide decarbonization targets in a total of seven carbon-intensive industries and updated its business processes. We are also strengthening our market presence and seizing business opportunities. DZ BANK, for example, stepped up the financing of renewable energy projects significantly and is now also a major funding partner internationally in this field. We also maintained our leading market position when it comes to providing support for sustainability-related capital market transactions. Moreover, two DZ BANK Group entities – DZ HYP and Bausparkasse Schwäbisch Hall – recently issued Pfandbriefe classified as green and are thereby supporting the transformation in the commercial and private real estate sector.

In parallel, we are making significant progress on projects of importance for the future. Having gone live with our crypto depository platform for institutional customers, we are aiming to pilot a wallet solution for the cooperative banks' retail customers this year. In payments processing, we are setting new standards with the Request-to-Pay system. As one of the market-leading providers in Germany, we are also closely involved in setting up the European Payments Initiative (EPI) and playing an active role in establishing the digital euro. We can see huge potential in generative artificial intelligence, which we are introducing throughout the entire group in a structured and ambitious manner. At the same time, we are continuing to forge ahead with key platform and infrastructure programs in order to leverage efficiencies even better within our group.

Although we can be very pleased with what we have achieved, we must not get complacent and instead should let it spur us on to continue doing our best going forward. We are optimistic that, in doing so, we will continue to write our growth story.

Kind regards,

Uwe Fröhlich
Co-Chief Executive Officer

Dr. Cornelius Riese
Co-Chief Executive Officer

Group management report

I DZ BANK Group fundamentals

1 Business model and strategic focus

The DZ BANK Group focuses its strategy on the local cooperative banks. In doing so, it pursues the objective of consolidating the positioning of the Cooperative Financial Network over the long term as one of the leading financial services providers in Germany. The DZ BANK Group supports the cooperative banks by providing extensive financial products and services in the Retail Banking, Corporate Banking, Capital Markets, and Transaction Banking business lines. This partnership is built on the principles of subsidiarity, decentralization, and regional market responsibility.

Strategic initiatives and programs are developed and implemented at the following three levels in the DZ BANK Group: firstly, at the level of the Cooperative Financial Network, with the leading role taken by the Bundesverband der Deutschen Volksbanken und Raiffeisenbanken e. V., Berlin, (BVR) [National Association of German Cooperative Banks]; secondly, at the level of the DZ BANK Group; and thirdly, at the level of the individual entities in the DZ BANK Group, which may draw up their own specific strategic programs. As regards overarching strategic projects and initiatives for the entire Cooperative Financial Network, the entities in the DZ BANK Group work in partnership with the cooperative banks, Atruvia AG, Frankfurt am Main, (Atruvia), and the BVR on the action areas in the strategic agenda and other strategically relevant topics, such as digitalization and sustainability. At DZ BANK Group level, the entities have jointly identified – and together will press ahead with – key areas of collaboration that offer the potential for reinforcing the future viability and profitability of all the members of the Cooperative Financial Network. In addition, each individual entity in the DZ BANK Group pursues a range of strategic initiatives, such as the 'Verbund First 4.0' strategic program at DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main, (DZ BANK), the 'WIR @ R+V – Growth. Innovation. Profitability.' program at R+V Versicherung AG, Wiesbaden, (R+V Versicherung; subgroup abbreviated to R+V), the 'Fokus 2020' program at DZ HYP AG, Hamburg and Münster, (DZ HYP), the 'Horizont 2025' program at Bausparkasse Schwäbisch Hall AG, Schwäbisch Hall, (Bausparkasse Schwäbisch Hall; subgroup abbreviated to BSH), and the 'FitForFuture' program at Union Asset Management Holding AG, Frankfurt am Main, (Union Asset Management Holding; subgroup abbreviated to UMH).

In 2023, the sustainability targets were expanded across the group and specific climate targets and decarbonization pathways were defined for carbon-intensive sectors. Since 2023, the management and implementation of sustainability in the DZ BANK Group has been the responsibility of the Group Sustainability Committee (GSC) at the level of the Board of Managing Directors. The GSC reports regularly to the Group Coordination Committee, which is the highest-level management and coordination committee in the DZ BANK Group. Detailed information on sustainability management can be found in the DZ BANK Group's Sustainability Report.

The digitalization of existing business models and processes was another key matter for the DZ BANK Group, as was participation in network-wide strategic initiatives. Unlocking potential for greater efficiency in the DZ BANK Group and in the individual entities is regarded as an ongoing task in this context.

1.1 DZ BANK – central institution and corporate bank

DZ BANK consists of DZ BANK – holding function and DZ BANK – central institution and corporate bank. DZ BANK – holding function, which is treated separately in the internal reporting structure, is used to pool a range of responsibilities, notably tasks carried out on behalf of the DZ BANK Group in relation to commercial law, tax, and prudential supervision. It does not constitute a separate operating segment within the meaning of IFRS 8.5 and is not analyzed separately in this chapter, 'Business model and strategic focus'.

The strategic focus of DZ BANK, as described below, essentially relates to the activities of DZ BANK – central institution and corporate bank. DZ BANK – central institution and corporate bank comprises both the cooperative central institution function, which supports the operating activities of the local cooperative banks, and the corporate bank function.

For the sake of simplicity, DZ BANK – central institution and corporate bank equates to DZ BANK in this chapter, 'Business model and strategic focus'.

At DZ BANK, the strategic initiatives designed to ensure the bank's resilience for the future are brought together in the 'Verbund First 4.0' strategic program. The program is aimed at improvements in three key areas: market offering, control and production processes, and corporate culture. It is divided into implementation packages, with additional packages due to be added in 2024. These include the 'Fit4Growth' initiative, in which DZ BANK will focus on optimizing and stepping up cross-divisional collaboration on key processes. The activities in the treasury/funding topic area will be expanded, and a new implementation package for activities relating to generative artificial intelligence will be created.

The following sections describe how DZ BANK is implementing its strategy in the various business lines.

1.1.1 Cooperative Banks/Verbund

The cooperative banks are DZ BANK's most important customer group, its shareholders, and its partners in joint activities covering sales and the provision of advisory services. The focus of the Cooperative Banks/Verbund division is to meet the needs of this relationship of support for the cooperative banks. The Regionaldirektoren [regional directors] of DZ BANK are an important point of contact and customer relationship manager for the cooperative banks, with the aim of assisting them with their business activities in the regional markets. Moreover, DZ BANK's presence throughout Germany ensures that it can be physically close to the banks it supports.

DZ BANK offers the cooperative banks consultancy and other services at every stage of strategic bank management and regulatory processes. In addition, DZ BANK assists the local cooperative banks with treasury and controlling aspects of bank management, such as planning and risk management, as well as with optimization for strategic bank management purposes and with own-account investing activities.

The support for the cooperative banks regarding sustainability is provided at various levels. Knowledge is shared using a number of different dialogue formats and events, such as a sustainability conference. In addition, a sustainability portal provides members with a central platform for sustainability information. Collaboration with the cooperative banks on sustainability matters is expected to intensify in the years ahead, particularly in view of increasing regulatory requirements.

In the year under review, the regular strategy events held by Atruvia, the BVR, and DZ BANK in collaboration with the Cooperative Financial Network's regional banking associations were combined for the first time into a multi-company format entitled 'Strategie-Hub Regional 2023' with a series of four regional events. The objective is to facilitate dialogue on shared strategic topics in order to strengthen the Cooperative Financial Network's strategy and, for reasons of efficiency, to reduce the number of events covering similar subjects. Furthermore, network committees ensure that the cooperative banks are closely involved in DZ BANK's strategic considerations and initiatives. The aim of the DZ BANK Group's Central Advisory Council is to enable important strategic matters in the DZ BANK Group to be discussed in depth and to connect the various players and levels in the Cooperative Financial Network. DZ BANK also has five regional Banking Advisory Councils that carry out an advisory and multiplier function.

1.1.2 Corporate Banking

In the corporate banking market, DZ BANK supports the cooperative banks. This support concept is geared to the needs of corporate customers and to the individual market situation and is integrated with the activities of the Cooperative Financial Network. DZ BANK has twelve regional branches that look after both its direct customers and its customers in the joint business with the cooperative banks at a regional level. Customer relationship management for multinationals, the agricultural and healthcare sectors, and Cooperative Financial Network customers has been grouped together in the Central Corporate Banking division in Frankfurt am Main.

DZ BANK continually upgrades its existing corporate banking services and processes in Germany. The digital VR GeschäftsNavigator (VR business navigator) application, which is now used by 570 local cooperative banks, was expanded in 2023 to include a module for optimizing joint marketing activities aimed at large and medium-sized companies. A further focus was on updating the future digital workplace for corporate banking relationship managers, which included incorporating new functionality.

DZ BANK is developing new solutions for its corporate customers and their retail customers on the basis of the Europe-wide Request-to-Pay (RtP) system. RtP bridges the gap between billing and bill payment, enabling companies to reduce administrative effort and costs. The benefit of the solution for their retail customers is that they do not need to spend time entering data during the billing process. DZ BANK developed this solution in collaboration with cooperative enterprises, such as Atruvia, and market partners. The pilot project in the Cooperative Financial Network began in 2023 with the aim of being able to roll out the solutions for the cooperative banks' corporate and retail customers from mid-2024 onward.

In addition to digitalization, other areas of focus in 2023 were integrating sustainability into the customer dialogue and helping corporate customers with their transformation in the context of the decarbonization of industry. This is illustrated by the growth of funding for renewable energies. DZ BANK also added to its environmental, social, and corporate governance (ESG) goals, defining specific climate targets and decarbonization pathways in the following carbon-intensive sectors: energy, automotive, steel, cement, aviation, shipping, and real estate. The aim is to reduce the carbon intensity attributable to these sectors in DZ BANK's lending business and in its own-account investments, so as to reduce it to virtually zero by 2050 at the latest.

DZ BANK also aims to support the international business of the Cooperative Financial Network's corporate customers. It offers a range of solutions geared to Germany's internationally oriented economy, including foreign payments processing, import and export credit guarantees and financing, and currency hedging. It has four branches and six representative offices outside Germany. As DZ BANK is seeing increased demand for low-volume export finance for corporate customers of the Cooperative Financial Network, it uses the SmaTiX (Small Ticket Express) portal of AKA Ausfuhrkredit-Gesellschaft mbH to support these customers. In the interest of sustainable export finance, DZ BANK and other banks provided support for the White Paper on Sustainability in Export Finance produced by the International Chamber of Commerce (ICC). DZ BANK also contributed to the update of the White Paper, which the ICC published in February 2023. Not least in view of the recommendations in the White Paper, the Organisation for Economic Co-operation and Development (OECD) decided on extensive reforms to its rules on state-backed export finance in July 2023. The new rules have a particular emphasis on the funding of climate-friendly projects.

DZ BANK is the center of excellence for development lending business within the Cooperative Financial Network. It supports the cooperative banks in two ways. Firstly, its development lending experts help the cooperative banks to advise their end customers. And secondly, it is replacing existing sales and communication channels with digital processes and portal services. The focus of these activities is on stabilizing market share and harnessing potential for growth.

1.1.3 Retail Banking

In the Retail Banking business line, DZ BANK offers cooperative banks, cooperation banks, and retail customers a comprehensive range of services based on its financial services concept. One of the primary areas of focus is the marketing of securities business with retail customers, for which DZ BANK provides products, processes, and platforms.

The products provided include customer investment solutions for advisory customers and independent retail investors of all experience levels. The product range consists of DZ BANK's own interest-rate products, derivatives and, in particular, investment certificates relating to particular trends or topics and sustainability. In this context, investment certificates with a charitable income component are issued. This involves DZ BANK and the participating cooperative banks giving up a share of their margin, with the money going to selected organizations in the form of sponsorship. DZ BANK has also added savings plans based on funds, exchange-traded funds (ETFs), and equities to its product range, which also contains investment account price models that are geared to customer needs and cater to market trends. Among these models are traditional investment accounts that are also available online, meinDepot (my investment account) for young customers, and an investment account with a flat-rate fee. This is all designed to further DZ BANK's objective of establishing the brokerage solution in the customer business as a comprehensive depository for securities that can be used by a broad range of customers at the cooperative banks.

DZ BANK offers a management cycle to support the cooperative banks with their strategic planning. This encompasses the planning, implementation, and control of the corporate strategy as well as tools for data and analytics. It also helps the cooperative banks to fulfill their regulatory obligations. As part of its marketing programs for young customers, new investment accounts, and sustainability, DZ BANK offers packages of measures in the form of processes and support services. These also help with the fulfillment of regulatory requirements, for example concerning sustainability in advisory services.

In accordance with its digitalization strategy, DZ BANK is developing platform solutions for advisors and customers of the cooperative banks and cooperation banks. DZ BANK's meinGIS platform provides advisors with access to the latest market information, such as securities prices, price charts, and corporate news. As well as visiting a branch, customers in the securities business can access their bank digitally so that they can quickly open an online investment account themselves and carry out trades online, for example. This brokerage solution is integrated into the VR Banking App, which provides users with a range of information and products, including market data, real-time prices, analysis tools, access to DZ BANK research, and product suggestions. Furthermore, retail customers can use the Meine Anlagezertifikate (my investment certificates) function to obtain detailed information on the investment products in their investment accounts at any time. In 2024, DZ BANK plans to introduce cryptocurrency trading for retail customers.

1.1.4 Capital Markets

DZ BANK offers advisory and sales services in relation to investment and risk management products covering the interest-rate, credit, equities, and currency asset classes for the benefit of its institutional customers in Germany and abroad, the cooperative banks in their own-account investing activities, and its corporate customers. Its offering encompasses primary market, secondary market, and research services.

DZ BANK's Group Treasury division is responsible for managing and optimizing liquidity throughout the DZ BANK Group. This ranges from managing the cooperative banks' day-to-day cash inflows and outflows in the context of the cash-pooling function performed by DZ BANK as the cooperative central institution to optimizing the procurement of liquidity by issuing securities. These are sold through the bank's own sales units and through intermediaries to institutional customers, such as insurance companies and fund management companies in Germany and abroad, and to retail customers of the cooperative banks. Group Treasury is also responsible for securities documentation in DZ BANK's capital markets business, which includes equity instruments and debt instruments issued by DZ BANK or by customers.

DZ BANK is working on further expanding its sustainability expertise and ESG activities in its capital markets business with institutional customers. In this context, it plans to continue strengthening its sustainability profile, particularly in primary market business for bonds. The range of sustainable investment products on offer in the securities business with retail customers is also to be extended. DZ BANK supported green, social, sustainability, and sustainability-linked bonds with a total volume of €25.1 billion in 2023, making it one of the leading European syndicate banks in the market segment for sustainable bonds. In the same period, DZ BANK placed sustainable promissory notes with a total volume of €2.4 billion. It is thus one of the leading banks when it comes to providing support for sustainable euro-denominated promissory notes from Germany (market share of roughly 17.4 percent) and for euro-denominated benchmark green covered bonds (market share of over 8 percent) in 2023.

The digitalization of existing business models is also progressing in the capital markets business. For example, DZ BANK continued to develop its smart derivatives contracts as an open standard with an automated payment function. And in October, it went live with its own cryptodepository platform, providing a solution for institutional investors for the settlement and deposit of their current investments in cryptosecurities. The platform will also enable institutional investors to participate in the exploration phase of the European Central Bank (ECB) for the settlement of wholesale transactions in central bank money. DZ BANK has applied to the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) [German Federal Financial Supervisory Authority] – and the ECB's Joint Supervisory Team (JST) – to have its license extended so that it can expand its depository services to include native cryptoassets, such as Bitcoin and Ether, alongside the existing bond and fund services.

In cooperative network business, DZ BANK is updating its advisory and sales processes to take account of the changing requirements of the cooperative banks and in order to leverage potential efficiencies. The EGon own-account investing platform was also further developed in the reporting year, with the first stage of expansion implemented to transform it into an integrated process platform. EGon provides information, transaction functions, and simulations designed to help the cooperative banks with all of their own-account investing activities.

1.1.5 Transaction Banking

In the Transaction Banking business line, DZ BANK provides its customers with payments processing, card processing, customer-centric solutions, capital markets services, and securities services. It also offers a depository function for investment funds, plus advisory services. DZ BANK's objective in this context is to consolidate and continually improve the competitiveness of the entities within the Cooperative Financial Network with regard to transaction banking.

The focus of this business line is on ensuring that the Cooperative Financial Network is well equipped for the future requirements of transaction banking. In view of the continued strong growth of digital payment processes, DZ BANK has introduced dedicated platforms for providing customer solutions and enters into partnerships in this area. For example, DZ BANK is participating in the European Payments Initiative (EPI) aimed at establishing a European payment system that is based on a digital wallet solution and uses the instant payments infrastructure. The launch of the RtP pilot project at the end of 2023 makes the Cooperative Financial Network one of the first providers in Europe to enable its customers to pay bills digitally through their account (see also section 1.1.2 'Corporate Banking').

DZ BANK is also closely involved in the ECB's planning for a digital euro and is monitoring the associated impact on private-sector solutions and initiatives. It is participating in the development of a market solution for deposit money tokens that are issued by banks on a decentralized basis. This type of deposit money paves the way for the concept of a unified ledger, as described by the Bank for International Settlements (BIS) in its 2023 Annual Economic Report. This market infrastructure makes it possible to manage the flow of goods and services, as well as payments, on a shared programmable platform and to exchange goods for money within smart contracts. A proof of concept was initiated in conjunction with industrial companies in mid-2023.

Key milestones for the consolidation of payments processing as part of the ZV ON€ project were reached in 2023, including the migration of international payments processing, individual payments processing, and large-amount payments processing to a single platform. The migration in SEPA payments processing is due to take place in a number of stages in 2024, with completion scheduled for the autumn. This harmonization is part of the Cooperative Financial Network's strategy and should help to further consolidate the network's payments processing resources, functions, and services and, from DZ BANK's perspective, to create a structure for payments processing that is efficient and fit for the future.

DZ BANK is keeping step with the evolution of card processing by enhancing its portfolio of solutions. Key areas of investment in digitalization solutions for local banks in the reporting year were the online order process and the first self-service options. A project to enable cards to be issued in real time began in 2023. This involves a switch from issuing physical cards to generating virtual credit cards in online banking. This should be made available to the Cooperative Financial Network's end customers in the second half of 2024. Digital debit cards are available for e-commerce in the form of giropay. And through the Digitale Regionen (digital regions) project, DZ BANK is establishing solutions that local banks can use to support their local authority customers' digital transformation.

DZ BANK is continuing to pursue its strategy of growth in the depository business. In 2023, it consolidated its market position by acquiring the depository business of Deutsche Apotheker- und Ärztebank eG (apoBank). DZ BANK is the third-largest depository bank in Germany, with assets under depository of €313 billion. It also continued to broaden its collaboration in this business with DZ PRIVATBANK S. A., Luxembourg, (DZ PRIVATBANK), and their joint activities were brought together in the Fondshafen (fund haven) campaign.

1.2 BSH

BSH is the consumer home finance provider in the DZ BANK Group and offers solutions that enable customers to obtain home finance, build up private retirement or other savings, or own their own home. The long-term objective is to secure BSH's role as the leading product and solutions provider in the homes and housebuilding cooperative ecosystem, working in close collaboration with the cooperative banks on a decentralized basis. BSH also supports its customers with finance solutions and platforms that help them to help themselves.

In its core home finance business, BSH primarily positions itself as a provider of traditional home savings loans, BSH's own instant finance options backed by home savings, building loans, and the brokering of cooperative bank real estate loans, while maintaining a focus on sustainability aspects. ESG key figures are used to measure the sustainability of the credit portfolio, and BSH defined new targets in 2023: SDG impact (proportion of real estate finance with a positive impact on the sustainable development goals (SDGs)), carbon footprint (carbon emissions partly financed by loans), and EU taxonomy ratio (proportion of real estate finance that contributes to achieving the objectives of the EU taxonomy).

In the core home savings business, BSH is further developing its range of products. The home savings tariffs and financing plans offer solutions that cater to different target groups and their individual financial needs. For example, interest on loans can be fixed for the future or for follow-up finance, renovation work aimed at improving energy efficiency and mitigating climate change can be carried out thanks to short saving periods, and there are home savings tariffs that help customers to start saving and to build up their savings.

International business is an integral component of BSH's corporate strategy and is concentrated on selected regions with specific building society regulations. The focus is on maintaining the existing approach to business in Slovakia and China.

BSH's position as the largest German building society and one of Germany's leading home finance providers means that it can make a direct contribution to sustainability through its core business, working in partnership with the cooperative banks. It aims to help its customers to take a climate-friendly approach in their homes and in their building projects by offering them appropriate products and advice. To this end, BSH provided further skills training for its field sales team in 2023 and, so far, has trained more than 1,700 financial experts as certified modernization advisors.

The Cooperative Financial Network is continuing to develop its homes and housebuilding ecosystem. Impleco GmbH, whose wohnglück.de platform offers digital solutions for building, buying, selling, and modernizing homes, is closely linked to the Cooperative Financial Network. DZ BANK has drawn up the ZuschussGuide (subsidies guide), which is designed to make the complex process of finding and applying for development loans as simple as possible. It is complemented by the SanierungsGuide (renovation guide), which was made available online in 2023. Customers just need to provide a small amount of information to then receive an overview of energy-efficiency measures and their costs.

1.3 R+V

R+V is the cooperative center of excellence for insurance, healthcare cover, and retirement pensions in the Cooperative Financial Network. It offers insurance products for retail and corporate customers in its non-life insurance, life insurance and pensions, and health insurance business segments. R+V also provides reinsurance cover for non-life insurance.

The company's strategic objectives are to improve the customer experience, follow a long-term trajectory of stable and income-oriented growth, and maintain an appropriate level of profitability, underpinned by sustainable, sound business operations. R+V intends to become one of the leading sustainable insurance companies. Its insurance products are already generally geared toward economic sustainability because they offer customers either an opportunity for long-term capital formation in a pension plan or a form of financial protection against risk.

One of R+V's goals under its strategy is to support its customers as they transition to greater sustainability. This applies in all of its business segments. In this context, R+V is contributing to the switch to cleaner energy and transportation, for example by offering insurance solutions for electric and hybrid vehicles, photovoltaic systems, geothermal power, and geothermal systems. R+V also makes a valuable contribution to sustainability through its environmental liability and environmental impairment insurance products, insurance against natural hazards, and advice on risk prevention in these areas. In its life insurance business, it offers special investment strategies such as R+V Investmentkonzept Duo Invest, in which sustainability criteria are taken into account. Having signed the Principles for Responsible Investment (PRI) and the Principles for Sustainable Insurance (PSI), R+V joined the Net-Zero Asset Owner Alliance in 2023. This is an alliance of major pension funds and insurance companies that have committed to adopting a climate-neutral investment policy. This underlines R+V's voluntary undertaking to invest on a fully climate-neutral basis by 2050.

R+V plans to continue expanding in growth areas such as healthcare and long-term nursing care, in which it is aiming to evolve from a health insurer into a health partner. This includes not only developing healthcare services but also extending its solutions for companies and their employees. R+V developed a new occupational healthcare concept for these companies in 2023.

R+V is broadening its capital expenditure program, particularly with regard to investment in digitalization, so that it can continue to meet customers' evolving needs going forward. By maintaining a firm focus on omnichannel sales, it intends to offer customers the optimum balance of personal and digital sales channels.

1.4 TeamBank

TeamBank AG Nürnberg, Nuremberg, (TeamBank) is the center of excellence in the Cooperative Financial Network for state-of-the-art liquidity management. In Germany, it offers its easyCredit family of consumer finance products. The recognition value of the easyCredit product brand was documented in 2023 when it was registered as a brand name with the Deutsches Patent- und Markenamt (DPMA) [German Patent and Trade Mark Office] after a market survey found that it achieved the necessary level of recognition.

The product range also includes 'easyCredit-Ratenkauf', which is an installment purchase solution that can be used online, in-store, and in direct sales. According to TeamBank, the installment purchase solution makes it possible to reach new target groups for the Cooperative Financial Network by means of embedded finance. In Austria, TeamBank collaborates with the cooperative banks to offer 'der faire Credit', a consumer finance product.

TeamBank's strategic activities are focused on generating long-term profitable growth for the Cooperative Financial Network. It is striving to transition from a purely ad hoc lending business to a long-term liquidity partner. TeamBank works with the Deutschland im Plus foundation in order to prevent consumers from becoming over-indebted.

TeamBank also focuses on using technologies and laying the technical foundations for its pursuit of growth. Following the success of the completed pilot phase, the cooperative consumer finance platform GENOFLEX was gradually rolled out in the year under review. GENOFLEX is a consumer finance platform that participating cooperative banks can use – if a suitable easyCredit option is not available – to offer either an alternative option from other cooperative banks or a different product from financial institutions outside the cooperative banking sector. This should help the Cooperative Financial Network to generate growth.

1.5 UMH

UMH is the asset manager in the Cooperative Financial Network and offers solutions for retail and institutional clients. In both areas of business, it is aiming for further expansion of the volume of assets under management.

For retail clients, UMH is working to extend its range of solutions for partner banks with a view to maintaining its growth trajectory. To this end, it is expanding its omnichannel capability and supporting the efforts of the cooperative banks to develop business on a digital basis by helping them to improve technological platforms and satisfy regulatory requirements. UMH is also responding to changing investor requirements and in recent years, for example, has constantly extended its range of sustainable investment funds.

In the institutional client business, UMH is the central asset manager for the Cooperative Financial Network. It also provides asset management for German and international institutional clients outside the cooperative sector. It offers special funds, institutional mutual funds, asset management, advisory services, capital preservation strategies, and quantitative asset management strategies. Risk management lies at the core of all investment processes. UMH's objective in its institutional client business is to consolidate its positioning as an active risks/returns manager and sustainability manager. The volume of sustainably managed assets has risen steadily in recent years. In 2023, for example, UMH launched an infrastructure fund concentrated on investment in sustainability-oriented technologies of the future and a commodity fund that pursues a sustainability strategy. The latter fund focuses on commodities that are particularly relevant to the sustainable transformation of the economy and the switch to renewable energy.

UMH follows a transparent approach to sustainable investment. This is the responsibility of the ESG committee in portfolio management. UMH has also established an interdisciplinary sustainability team for real estate investment. The properties selected for the funds in both the retail and the institutional real estate business must satisfy certain quality criteria and pursue the objective of generating stable rental income over the long term in order to secure a return for the investor. UMH aims for portfolios that are broadly diversified in terms of geography and usage type.

1.6 DZ HYP

The core business policy objective of DZ HYP is to embed real estate finance and public-sector finance in the Cooperative Financial Network and to operate the finance business jointly with the cooperative banks. To this end, DZ HYP offers a range of products and services to the cooperative banks and works together with them to develop business in the regional markets focusing on corporate, retail, and public-sector customers. DZ HYP's sales activities are based on long-term customer relationships in its direct and cooperative network business and on products and services that are defined with a view to their risk and reward.

In its corporate customer business, DZ HYP has its own direct business and also acts as a partner to the cooperative banks. Customers in this business include investors, project developers, property developers, and companies in the housing sector. The focus is on real estate finance in the German market. German customers in selected international markets are supported too. DZ HYP launched the FK Digital project with the aim of further digitalizing its corporate customer business. This should create a modern, digital working environment within this business in order to raise efficiency and cater to the constantly growing requirements of all market players. The result will be a centralized lending workplace with a unified database, incorporating modern user interfaces that will cover all of the key tasks in the lending lifecycle.

DZ HYP also works closely with the local cooperative banks in its retail customer business, where the product portfolio includes initial and follow-up finance for new builds, purchases, and modernization/renovation. A major change in DZ HYP's collaboration with the local cooperative banks in the retail customer business is that they can now use the VR-BaufiComfort product to team up with DZ HYP on business on the Cooperative Financial Network's Genopace and Baufinex portals without entering into a framework agreement. DZ HYP takes over the process immediately after an application has been made. It checks and approves the loan applications and carries out all subsequent processes, including disbursing the loan. This should enable advisors in the cooperative banks to focus more on their customers. In 2024, VR-BaufiComfort is also to be made available on Atruvia's omnichannel platform.

Within the DZ BANK Group, DZ HYP also operates as the center of excellence for collaboration with public-sector customers. The core element of this business with local authorities and their legally dependent subsidiaries is the awarding of short-term loans to local authorities and loans to public-sector entities in collaboration with the cooperative banks.

DZ HYP's sustainability strategy provides guidance on defining key areas of action and suitable initiatives for sustainability management. As part of an annual update, the strategy is being adjusted in terms of the defined level of ambition in order to embed sustainability more firmly within the core business. In this context, DZ HYP placed further green mortgage Pfandbriefe in a benchmark transaction with a total issuance volume of €1 billion in January 2023, followed by an additional €500 million in August. These securities are issued in accordance with the German Pfandbrief Act (PfandBG), the Green Bond Principles of the International Capital Market Association (ICMA), and the minimum standards for green mortgage Pfandbriefe laid down by the Verband deutscher Pfandbriefbanken e. V. (vdp) [Association of German Pfandbrief Banks]. After issuing a green Pfandbrief for the first time in 2022, DZ HYP has since established itself as a permanent issuer of sustainability-oriented bonds. Business processes, together with the internal and external reporting systems, are to be progressively expanded and upgraded to include the various aspects of sustainability. For example, regular allocation and impact reporting has been introduced to provide information on the use of issue proceeds and on the impact that the green Pfandbriefe have had on the climate.

1.7 DZ PRIVATBANK

DZ PRIVATBANK, together with its branches at eight locations in Germany, its two subsidiaries DZ PRIVATBANK (Schweiz) AG and IPConcept (Luxemburg) S. A., and IPConcept (Schweiz) AG, a subsidiary of DZ PRIVATBANK (Schweiz) AG, is the international center of excellence for private banking/wealth management, fund services, and lending (LuxCredit) in the Cooperative Financial Network.

DZ PRIVATBANK's products and services encompass asset management and advisory mandates, as well as investment and financing solutions for private banking and wealth management customers, and for entrepreneurs/business owners, foundations, and semi-institutional investors. It also provides fund and depository services for Union Investment, for DZ PRIVATBANK's own fund solutions, and for private-label third-party fund initiators, plus flexible loan solutions denominated in euros and other currencies for retail and corporate customers. DZ PRIVATBANK also offers solutions for sustainability-minded customers. Going forward, it wants to continue increasing the extent to which sustainability factors are taken into account in its asset management activities, offer more solutions in this area, and integrate them into selection processes.

DZ PRIVATBANK has specified targeted areas for sales growth in its sectors of the market. These include financial portfolio management (asset management), for example for sustainability-oriented international client accounts and Switzerland-oriented client accounts. The latter give customers of DZ PRIVATBANK access to top-quality Swiss assets in all asset classes. The Switzerland-oriented investment solutions are now an integral part of the cooperative banks' digital customer transaction processes.

In recent years, DZ PRIVATBANK has consolidated its market position in Germany by working closely with the cooperative banks. The main core growth areas at DZ PRIVATBANK are private banking/wealth management and the fund business relating to liquid and alternative asset classes. LuxCredit financing also offers growth potential in collaboration with the cooperative banks. The main example in this area is the VR ImmoFlex solution, which is targeted at the 50+ age group. These people have a high proportion of their wealth invested in their own home, and VR ImmoFlex makes it easier for them to access liquidity through financing.

DZ PRIVATBANK has launched a strategic project, DZ PRIVATBANK 2030, in which it intends to lay the foundations for continued strong growth and to position the bank in such a way that will secure its long-term future.

1.8 VR Smart Finanz

VR Smart Finanz AG, Eschborn, (VR Smart Finanz) is the digital provider of finance for the self-employed and small businesses in the Cooperative Financial Network. It supports self-employed and small business customers as well as small enterprise customers of its partner banks with their day-to-day financial needs. Its portfolio ranges from finance solutions for leasing, hire purchase, and loans up to €1 million (individual asset value) to the Bonitätsmanager (credit status manager) and VR Smart Guide digital services. The latter is a tool that small enterprises can use for financial planning and bookkeeping. VR Smart Finanz updated its business strategy in 2023 by raising the financing limit for individual assets from €750,000 to €1 million in view of the significant increase in asset prices over the past few years.

VR Smart Finanz attaches particular importance to offering automated, rapid finance decisions within a few minutes and to providing an omnichannel approach for business loans. The loan amount is generally disbursed within 24 hours. Sales partners also benefit from data-supported marketing approaches. VR Smart Finanz's portfolio therefore contributes to the digital and personal banking portfolio and to omnichannel sales in corporate banking.

As part of its strategy, VR Smart Finanz constantly strives to enhance its finance solutions, integrate them into the internal platforms used by the Cooperative Financial Network, and establish new decentralized sales channels and sales partners, such as digital financing platforms, for the Cooperative Financial Network. In July 2023, for example, VR Smart Finanz launched the fully automated hire purchase solution 'VR Smart express Eco' for the financing of investment in sustainability-oriented assets in the fields of electric vehicles and renewable power generation. It has thus expanded the range of products and solutions aimed at supporting the activities of its SME customers in the sustainability sphere.

2 Management of the DZ BANK Group

2.1 Management units

The DZ BANK Group comprises DZ BANK as the parent company and the DZ BANK Group's subsidiaries in which DZ BANK directly or indirectly exercises control.

All entities in the DZ BANK Group are integrated into groupwide management. In the case of subgroups, the disclosures in the group management report on management units relate to the entire subgroup comprising the parent company of the subgroup plus its subsidiaries and second-tier subsidiaries. The management units are managed by the parent company in the subgroup, which is responsible for compliance with management directions in the subsidiaries and second-tier subsidiaries. The following management units form the core of the financial services group:

- BSH
- R+V
- UMH
- TeamBank
- DZ BANK – central institution and corporate bank (DZ BANK – CICB)
- DZ HYP
- DZ PRIVATBANK
- VR Smart Finanz

The management units are each managed as a separate operating segment. DZ BANK – holding function is also presented separately, although it does not constitute an operating segment within the meaning of IFRS 8.5.

The DZ BANK – CICB operating segment comprises both the cooperative central institution function, which supports the operating activities of the local cooperative banks, and the corporate bank function. DZ BANK – holding function is used to pool a range of responsibilities, notably tasks carried out on behalf of the DZ BANK Group in relation to commercial law, tax, and prudential supervision.

All risks at DZ BANK, and therefore arising in connection with the CICB segment and the holding function, are determined, reported, and managed for DZ BANK. The aim of this approach is to satisfy the regulatory requirements under Basel Pillar 1 and Pillar 2 whereby DZ BANK must be treated as one bank overall. This also meets the German Minimum Requirements for Risk Management for Banks and Financial Services Institutions (MaRisk BA). The operating segments presented in the risk report in this group management report (chapter VII.2.2) are consistent with the operating segments in the consolidated financial statements.

The terms DZ BANK Group and DZ BANK financial conglomerate are synonymous and refer to all the management units together. The context dictates the choice of term. For example, in the case of disclosures relating to economic management, the focus is on the DZ BANK Group, whereas in the case of regulatory issues relating to all the management units in the DZ BANK Group, the term DZ BANK financial conglomerate is used.

The DZ BANK financial conglomerate largely comprises the DZ BANK banking group and R+V. DZ BANK acts as the financial conglomerate's parent company.

2.2 Governance

Governance in the DZ BANK Group is characterized by the general management approach of the DZ BANK Group, appointments to key posts in the subsidiaries, and the committee structure.

2.2.1 General management approach

The general management approach consists of a combination of centralized and decentralized management tools. It is aligned with the business model and risks of the DZ BANK Group as a diversified financial services group that is integrated into the Volksbanken Raiffeisenbanken Cooperative Financial Network and that provides this network with a comprehensive range of financial products.

The DZ BANK Group is a financial services group comprising entities whose task as product specialists is to supply the Cooperative Financial Network with an entire range of financial services. Because of the particular nature of the DZ BANK Group, it is managed both centrally and locally with clearly defined interfaces and taking into account business policy requirements.

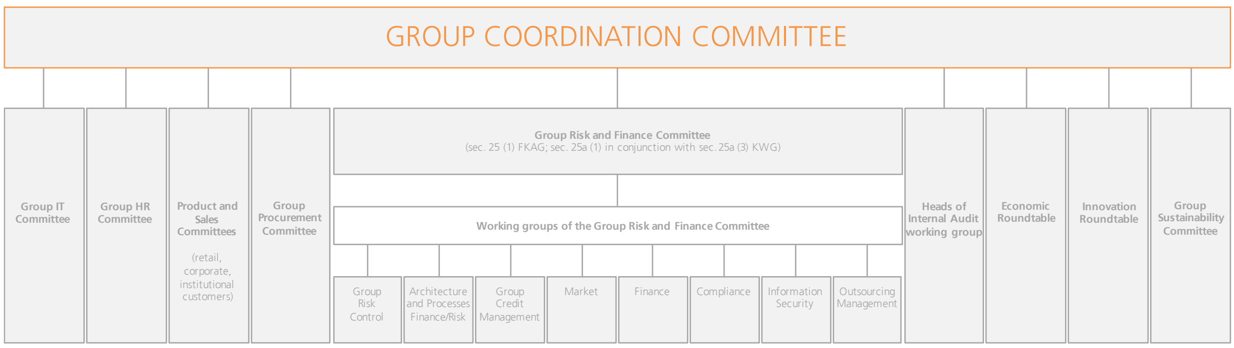
2.2.2 Appointments to key posts in the subsidiaries

For the purposes of managing the subsidiaries through appointments to key posts, a representative of DZ BANK is appointed in each case as the chairman of the supervisory body and generally also as the chairman of any associated committees (e.g. the risk and investment committee, the audit committee, and the human resources committee).

2.2.3 Corporate management committees

Figure I.1 provides an overview of the committees of particular importance in the management of the DZ BANK Group.

FIG. I.1 – MANAGEMENT COMMITTEES IN THE DZ BANK GROUP



The **Group Coordination Committee** is the highest-level management and coordination committee in the DZ BANK Group. The objectives of this committee are to strengthen the competitiveness of the DZ BANK Group and to coordinate fundamental product and sales issues. The committee also aims to ensure coordination between the key entities in the DZ BANK Group to achieve consistent management of opportunities and risks, allocate capital, deal with strategic issues, and leverage synergies. Its members comprise the Board of Managing Directors of DZ BANK and the chief executive officers of BSH, DZ HYP, DZ PRIVATBANK, R+V, TeamBank, UMH, and VR Smart Finanz.

Various committees consisting of representatives from all strategic business lines and group functions assist the Group Coordination Committee's decision-making by preparing proposals. These are the following committees: the Group Risk and Finance Committee, the Group IT Committee, the Group HR Committee, the product and sales committees for retail customers, corporate customers, and institutional customers, the Group Procurement Committee, the Group Sustainability Committee, the Heads of Internal Audit working group, the Economic Roundtable, and the Innovation Roundtable.

The **Group Risk and Finance Committee** is the central committee in the DZ BANK Group responsible for proper operational organization and, in particular, risk management in accordance with section 25 of the German Supervision of Financial Conglomerates Act (FKAG) and section 25a of the German Banking Act (KWG). It assists DZ BANK with groupwide financial and liquidity management, risk capital management, and recovery and resolution planning. The Group Risk and Finance Committee also assists the Group Coordination Committee in matters of principle. The members of this committee include the relevant executives at DZ BANK responsible for finance, risk, and treasury. The committee members also include executives at various subsidiaries. The Group Risk and Finance Committee has set up the following working groups to prepare proposals for decision-making and to implement management action plans relating to financial and risk management at group level:

– The **Group Risk Control working group** supports the Group Risk and Finance Committee in all matters concerning risk and the management of risk capital and market risk in the DZ BANK Group, and in matters relating to risk reporting.

– The **Architecture and Processes Finance/Risk working group** assists the Group Risk and Finance Committee with the further development of the integrated finance and risk architecture in the DZ BANK Group. In terms of the corporate management of the DZ BANK Group, this committee works on refining the blueprint for the business, process, and data architecture and on ensuring a coordinated roadmap, a transparent project portfolio, and a holistic data governance approach.

– The management of credit risk throughout the group is the responsibility of the **Group Credit Management working group** of the Group Risk and Finance Committee. This working group monitors compliance with the rules in the group credit risk policy in connection with its involvement in drawing up group credit standards and related monitoring and validation processes as the basis for groupwide management of counterparty risk. In particular, this covers all measures relating to the monitoring and management of the limit allocation at individual counterparty level. The working group also participates in the further development and harmonization of the credit management organization and processes, and it discusses and continually develops the group credit risk strategy, group credit risk management, and group credit standards. It thus assists the Group Risk and Finance Committee with the groupwide harmonization of credit-related processes with due regard to their economic necessity.

– The Group Risk and Finance Committee’s **Market working group** is responsible for providing implementation support throughout the group in the following areas from the market viewpoint: capital management, balance sheet and balance sheet structure management, liquidity and liquidity risk management, and funding activities. This body also focuses on coordinating and dovetailing funding strategies and liquidity reserve policies, as well as on independently determining funding needs and on preparing consistent investor relations and rating documents within the DZ BANK Group. In addition, the Market working group is responsible for refining the management of centrally measured market risk.

– The **Finance working group** advises the Group Risk and Finance Committee on matters concerning the consolidated financial statements, tax law at group level, regulatory law at group level, group controlling, and the management of financial resources. It discusses new statutory requirements and works out possible implementation options. The objective of the Finance working group is to continually update the uniform management framework used throughout the group (definitions, nomenclature, methodologies), particularly taking into account requests made by the supervisory authorities.

– The **Compliance working group** assists DZ BANK with compliance management across the group where this is legally required. It also advises the DZ BANK Group’s Group Risk and Finance Committee on fundamental compliance-related issues. One of the primary tasks of the Compliance working group is to draw up common compliance standards for the DZ BANK Group; in addition, it serves as a platform enabling specialists to share information and agree on requirements across the group. When fulfilling its responsibilities, the Compliance working group must respect the individual responsibility of the heads of compliance in the group entities and ensure specific regulatory requirements are observed. The Compliance working group reports to the Group Risk and Finance Committee, headed by the member of the DZ BANK Board of Managing Directors responsible for compliance and finance, and by the member of the DZ BANK Board of Managing Directors responsible for risk control.

– The **Information Security working group** of the Group Risk and Finance Committee and of the Group IT Committee is the central body responsible for managing information security and information security risk in the DZ BANK Group. It advises the Group Coordination Committee, the Group Risk and Finance Committee, and the Group IT Committee on matters relating to specifying and adjusting information security targets and on the group's corporate strategy in this regard. The working group encourages information and experience relating to information security issues to be shared throughout the group, is responsible for the design of the risk management system for information security in the DZ BANK Group, and signs off the documentation forming part of the rules and regulations for the groupwide information security management system before this documentation is presented, where required, to the Boards of Managing Directors in the DZ BANK Group for approval.

– The **Outsourcing Management working group** is the central committee in the DZ BANK Group responsible for the management of outsourcing and sets out the general parameters for the management of outsourcing risk in the DZ BANK Group. It encourages information and experience relating to issues in connection with the management of outsourcing to be shared throughout the group. The Outsourcing Management working group is responsible for the design of the risk management system from the perspective of the group's minimum requirements for the management of outsourcing in the DZ BANK Group. It signs off the documentation forming part of the rules and regulations for the groupwide outsourcing management system before this documentation is presented, where required, to the Boards of Managing Directors in the DZ BANK Group for approval and assists the Group Coordination Committee, the Group Risk and Finance Committee, and the Group IT Committee with matters relating to specifying and adjusting targets for the management of outsourcing and with the group's corporate strategy in this regard.

The **Group IT Committee (GITC)**, comprising the members of the Boards of Managing Directors of the main group entities with responsibility for IT, supports the Group Coordination Committee in strategic IT matters. It is the highest-level IT management committee in the group and coordinates all overarching IT activities in the DZ BANK Group.

In particular, the Group IT Committee is responsible for the group IT strategy of the DZ BANK Group, makes decisions on collaboration issues between IT units, identifies and realizes synergies, specifies common IT standards, and initiates joint IT projects. The aim of the GITC is to develop a future-proof IT setup for the DZ BANK Group and to support the departments of the group entities and the local cooperative banks in their respective markets. The cooperative principle is practiced both within the DZ BANK Group and in the collaboration with the BVR and Atruvia.

From an operational perspective, the activities are coordinated by the Heads of IT group and implemented in the IT units in the DZ BANK Group.

The **Group HR Committee** normally comprises the members of the Boards of Managing Directors with responsibility for HR and the HR directors from the main entities in the DZ BANK Group. This committee helps the Group Coordination Committee address HR issues of strategic relevance. The Group HR Committee initiates and coordinates activities relating to overarching HR issues while at the same time exploiting potential synergies. It also coordinates the groupwide implementation of regulatory requirements concerning HR systems and facilitates the sharing of HR policy information within the DZ BANK Group.

The **product and sales committees** perform insight, coordination, and bundling functions relating to the range of products and services provided by the DZ BANK Group.

- The **retail customers** product and sales committee coordinates products and services, and the marketing activities of its members where there are overarching interests affecting the whole of the group. The common objective is to generate profitable growth in market share for the cooperative banks and the entities in the DZ BANK Group with a focus on customer loyalty and customer acquisition by providing needs-based solutions (products and processes) as part of a holistic advisory approach across all sales channels (omnichannel approach).

- The **corporate customers** product and sales committee is responsible for coordinating the strategies, planning, projects, and sales activities in the DZ BANK Group's corporate banking business if overarching interests are involved. The objective is closer integration in both the joint lending business with the cooperative banks and the direct corporate customer business of the entities in the DZ BANK Group.

- The aim of the **institutional clients** product and sales committee is to help strengthen the position of the DZ BANK Group in the institutional clients market.

The **Group Procurement Committee**, comprising the members of the Boards of Managing Directors and executives holding power of attorney at DZ BANK and its subsidiaries, supports the Group Coordination Committee in matters relating to procurement strategy in the DZ BANK Group. This committee manages the DZ BANK Group's procurement activities that are relevant throughout the group. In particular, the Group Procurement Committee makes decisions on collaboration issues between procurement units, identifies and realizes synergies, and specifies common standards and procedures with the objective of achieving optimum procurement terms and conditions for the entities of the DZ BANK Group. From an operational perspective, the activities are coordinated by the Procurement Board – the Group Procurement Committee's executive arm consisting of the DZ BANK Group's heads of procurement – and implemented in the procurement units in the DZ BANK Group.

The DZ BANK Group **Heads of Internal Audit working group**, which is led by DZ BANK, coordinates group-relevant audit issues and the planning of cross-company audits and activities based on a jointly developed framework approved by the relevant Boards of Managing Directors. This working group also serves as a platform for sharing specialist information across the group – especially information on current trends in internal audit – and for refining group audit activities. On behalf of this working group, the Head of Group Audit reports to the member of the Board of Managing Directors responsible for group audit and, where appropriate, to the Group Coordination Committee.

The **Economic Roundtable**, the members of which comprise the economists from the main group companies, helps the Group Coordination Committee to assess economic and capital market trends, providing a uniform basis for consistent planning scenarios throughout the group, and to prepare risk scenarios required by regulators.

The members of the **Innovation Roundtable** comprise specialists, executive managers, and innovation managers from the various divisions of DZ BANK and the subsidiaries. The Innovation Roundtable is therefore the Group Coordination Committee's key point of contact for information on innovations and trends relevant to the group. The objectives of the Innovation Roundtable are to systematically examine innovation topics with group relevance on an ongoing basis, to bring together the divisions involved in innovation projects, and to ensure that innovation activities in the DZ BANK Group are transparent.

The **Group Sustainability Committee (GSC)** at the level of the Board of Managing Directors was created in 2023 and focuses on the management and implementation of sustainability in the DZ BANK Group. In addition to the GSC, there is a sustainability coordination committee made up of the sustainability officers in the management units. The sustainability coordination committee is an operational committee that is subordinate to the GSC and provides a platform for the sharing of information on the latest sustainability-related developments and activities across the group. Led by DZ BANK, the sustainability coordination committee identifies key issues relevant to the whole of the group, initiates joint projects, and prepares decisions to be made by the GSC.

2.3 Key performance indicators

The DZ BANK Group's KPIs for profitability, volume, productivity, liquidity adequacy, and capital adequacy, as well as the regulatory return on risk-adjusted capital (RORAC), are presented below.

- **Profitability figures in accordance with International Financial Reporting Standards (IFRS):**
  The profitability figures (primarily loss allowances for loans and advances, profit/loss before taxes, net profit/loss) are presented in chapters II.3.1 and 3.2 of this group management report as well as in note 33 of the notes to the consolidated financial statements.

- **IFRS volume figures:**
  The main volume-related KPIs include equity and total assets. These are set out in chapter II.4 of the group management report, in the consolidated financial statements (balance sheet as at December 31, 2023), and in note 33 of the notes to the consolidated financial statements.

- **Productivity:**
  The KPI for productivity is the cost/income ratio. This KPI is described in chapters II.3.1 and 3.2 of this group management report and in note 33 of the notes to the consolidated financial statements.

- **Liquidity adequacy:**
  Appropriate levels of liquidity reserves in relation to the risks associated with future payment obligations are demonstrated using the KPIs for economic and regulatory liquidity adequacy presented in chapters VII.6.2 and VII.6.3 of the risk report in this group management report. The minimum liquidity surplus reflects economic liquidity adequacy. Regulatory liquidity adequacy is expressed in terms of the liquidity coverage ratio (LCR) and the net stable funding ratio (NSFR).

- **Capital adequacy:**
  The KPIs for economic capital adequacy are described in chapter VII.7.2 of the risk report in this group management report. The KPIs for regulatory capital adequacy are included in chapter VII.7.3. They comprise the coverage ratio for the financial conglomerate, the total capital ratio, the Tier 1 capital ratio, the common equity Tier 1 capital ratio, and the leverage ratio, as well as the metrics for the minimum requirement for own funds and eligible liabilities (MREL), namely the MREL ratio as a percentage of risk-weighted assets, the MREL ratio as a percentage of the leverage ratio exposure, the subordinated MREL ratio as a percentage of risk-weighted assets, and the subordinated MREL ratio as a percentage of the leverage ratio exposure.

- **Regulatory RORAC:**
  Regulatory RORAC is a risk-adjusted performance measure. It reflects the relationship between profit before taxes and the average own funds for the year calculated as an average of the figure for the four quarters. It therefore shows the return on the regulatory risk capital employed. This KPI is described in chapters II.3.1 and 3.2 of this group management report and in note 33 of the notes to the consolidated financial statements.

Forecasts for the aforementioned KPIs in the DZ BANK Group are set out in the outlook. Sustainability-specific KPIs are reported on in the DZ BANK Group's separate Sustainability Report.

2.4 Management process

In the annual strategic planning process, the entities in the DZ BANK Group produce a business strategy (objectives, strategic direction, and action plan), a strategic finance and capital plan, and risk strategies derived from the business strategy.

The planning by the management units is then validated and the plans are also discussed in strategy meetings. When the individual entity planning has been completed, the process then moves on to consolidated group planning, which primarily aims to facilitate active management of the DZ BANK Group's economic and regulatory capital adequacy.

The action plans to attain the targets are discussed in a number of ways, notably in quarterly meetings with the subsidiaries.

At DZ BANK level, the main divisions involved in the strategic planning process are Strategy & Group Development, Group Risk Control & Services, Group Risk Controlling, Group Finance, Bank Finance, and Research and Economics. The planning coordinators in the front-office divisions of DZ BANK and the subsidiaries are also incorporated into the process. The Strategy & Group Development division is responsible for overall coordination of the strategic planning process.

II Business report

1 Economic conditions

In Germany, 2023 was characterized by a downturn that set in after the outbreak of war in Ukraine in 2022 and the energy crisis triggered by this conflict. High inflation weighed particularly heavily on the economy, reducing consumers' purchasing power and thus forcing them to cut back on spending. Although disposable incomes saw healthy nominal growth over the course of the year, households remained cautious, not only because of the higher prices but also because of the uncertain economic environment. Sources of uncertainty in the reporting year included Germany's controversial Buildings Energy Act (GEG), the conflict in the Middle East, and the German Federal Constitutional Court's highly consequential ruling on the debt brake. These factors had an adverse impact on sales opportunities and investment conditions for businesses that were simultaneously struggling with rising costs. Energy-intensive industries curbed their production in light of persistently high energy prices. The production of energy itself also diminished noticeably, partly in response to widespread efforts to reduce consumption and partly due to the last remaining nuclear power stations in Germany being taken off the grid. In addition, demand from outside Germany was weak as other economies were similarly affected by high inflation and the interest-rate rises. Soaring prices had prompted the European Central Bank (ECB) and other central banks to raise their base rates. The rise in interest rates created more challenging conditions for investment. One of the sectors affected by this was the real estate market, especially residential construction. New planning permissions plunged and in some cases, construction was put on hold even for housing projects that had already been approved.

Whereas Germany's economy had registered growth of 1.8 percent in 2022, gross domestic product (GDP) declined by 0.3 percent in 2023. Over the year as a whole, growth remained close to zero. In the first quarter of 2023, however, Germany's GDP edged up by 0.1 percent compared with the previous quarter. Although consumer spending fell substantially, net exports delivered a positive contribution to growth, but only because exports declined less sharply than imports. Gross investment also increased significantly. The second quarter saw no growth in economic output. Consumer spending picked up and provided some positive momentum, but exports deteriorated. In the third quarter, GDP continued to stagnate. Consumer spending weakened, while investment increased. In the final quarter of the year, the growth picture deteriorated further as GDP fell by 0.3 percent compared with the previous quarter.

High inflation and an increase in interest rates also took their toll on the economy of the eurozone. This was primarily reflected in a marked slowdown in consumer spending and investment, but did not push the bloc's overall economic growth into negative territory. Although the eurozone had recorded GDP growth of 3.4 percent in 2022, this figure fell to just 0.5 percent in 2023. The first and second quarters of 2023 both saw modest quarter-on-quarter growth of 0.1 percent, followed by a 0.1 percent contraction in GDP in the third quarter. Whereas the negative growth trend intensified in Germany in the final quarter of the year, growth in the eurozone remained at 0.0 percent.

The US economy also struggled with high interest rates and rapidly rising consumer prices in 2023. However, its economy remained in surprisingly robust shape. Overall, economic output went up by 2.5 percent in 2023, compared with 1.9 percent in 2022. This was primarily driven by a substantial rise in consumer spending, which, in turn, was mainly attributable to the robust labor market. Employment improved strongly, keeping the unemployment rate at an average of 3.6 percent in 2023 and thus at a similarly low level as in 2022. Inflation had been high in the US in 2022, especially at the start of the year, but slowed steadily over the course of 2023. By the final months of 2023, the rate of inflation had dropped to just above 3.0 percent.

Energy prices played a key role in slowing down inflation. In addition, upward pressure on prices for industrial goods eased thanks to improvements in conditions along companies' supply chains over the course of the year.

China recovered from the impact of its strict zero-COVID policy in 2023, after the associated measures had been lifted by Beijing at the end of 2022. At 5.2 percent, China's economic growth was up strongly compared with 2022, when the Chinese economy had grown by 3.0 percent and thus at a slower rate than the global economy for the first time in decades. However, the growth spurt at the start of 2023 was fueled by strong catch-up effects and proved very short-lived. Following a dip in economic growth around the middle of the year, government stimulus measures helped to push the growth rate up again somewhat in the second half of 2023.

2 The financial industry amid continued efforts to stabilize the economy of the eurozone

The war in Ukraine created uncertainty in the capital markets in both the reporting year and in the previous year. In the first six months of 2023, trading was affected by concerns about inflation, but in the second half of the year, these concerns diminished and paved the way for more upbeat stock market conditions toward the end of the year.

The STOXX Europe 600, a share index comprising 600 large listed European companies, stood at 479.02 points as at December 31, 2023, which was 54.13 points higher than at the end of the previous year (December 31, 2022: 424.89 points). By contrast, the index had dropped by 62.91 points in the previous year.

Some EU countries still exceeded the ratios for new and overall indebtedness required for compliance with the stability criteria specified in the Fiscal Compact agreed by the EU member states at the beginning of 2012. In the Fiscal Compact, the signatory countries committed to reducing their debt (as a proportion of GDP) each year by one twentieth of the difference between the debt level and the Maastricht limit of 60 percent of GDP.

At the end of the third quarter of 2023, the total borrowing of the 20 eurozone countries equated to 89.9 percent of their GDP, a decrease of 2.3 percentage points compared with the figure of 92.2 percent as at September 30, 2022.

Italy's public debt as a percentage of GDP stood at 140.6 percent in the third quarter of 2023 (third quarter of 2022: 143.1 percent), which is the highest in the eurozone after that of Greece.

Based on a policy of quantitative easing, the ECB has supported the markets for government bonds in recent years, thereby creating the necessary time over the last few years for the European Monetary Union (EMU) countries burdened with excessive debt to reduce their budget deficits.

By the third quarter of 2022, the central banks in both the US and the eurozone were pursuing more restrictive monetary policy.

At its meeting on December 14, 2023, the ECB decided not to make changes to its three key interest rates. By contrast, at the previous meeting on September 14, 2023, the deposit facility interest rate had been set at 4.00 percent, the main refinancing rate at 4.50 percent, and the marginal lending facility rate at 4.75 percent. At that meeting, the ECB emphasized its determination to swiftly bring inflation back down to its medium-term target of 2.00 percent .

The ECB Governing Council intends to continue to reinvest repayments on maturing securities purchased under the pandemic emergency purchase program (PEPP) in full during the first six months of 2024. Plans for the second half of 2024 envisage a reduction of the PEPP portfolio by an average of €7.5 billion per month. The reinvestment of repayments under the PEPP is scheduled to stop at the end of 2024.

On December 13, 2023, the US Federal Reserve (Fed) kept the federal funds rate in the range of 5.25 to 5.50 percent, thus maintaining it unchanged for the third consecutive time.

There were differences in the financial performance of Germany's two largest banks in 2023. Whereas one of them registered a doubling of its net profit and a sharp fall in expenses for loss allowances for loans and advances compared with the previous year, the other one saw a significant decrease in its net profit and a marked increase in expenses for loss allowances for loans and advances. Both banks recorded a small rise in administrative expenses in the reporting year.

3 Financial performance

3.1 Financial performance at a glance

Despite the persistently challenging market conditions resulting from the sharp rise in interest rates, still elevated inflation, and geopolitical crises, the DZ BANK Group reported an encouraging profit before taxes of €3,189 million in 2023 (2022: €2,252 million).

The year-on-year changes in the key figures that make up the net profit generated by the DZ BANK Group were as described below.

Fig. II.1 – INCOME STATEMENT

€ million	**2023**	**2022**
Net interest income	4,333	3,322
Net fee and commission income	2,807	2,749
Gains and losses on trading activities	-175	823
Gains and losses on investments	-72	-119
Other gains and losses on valuation of financial instruments	298	-286
Gains and losses from the derecognition of financial assets measured at amortized cost	11	35
Net income from insurance business	891	276
Loss allowances	-362	-304
Administrative expenses	-4,597	-4,447
Staff expenses	-2,174	-2,072
Other administrative expenses[1]	-2,423	-2,374
Other net operating income	56	204
Profit before taxes	3,189	2,252
Income taxes	-955	-912
Net profit	**2,234**	**1,341**

1 General and administrative expenses plus depreciation/amortization expense.

Operating income in the DZ BANK Group amounted to €8,149 million (2022: €7,004 million). This figure comprises net interest income, net fee and commission income, gains and losses on trading activities, gains and losses on investments, other gains and losses on valuation of financial instruments, gains and losses from the derecognition of financial assets measured at amortized cost, net income from insurance business, and other net operating income.

Net interest income increased by €1,011 million year on year to €4,333 million (2022: €3,322 million).

Within this figure, interest income from lending and money market business rose by €5,697 million to €11,423 million (2022: €5,726 million) and interest income from bonds and other fixed-income securities went up by €431 million to €916 million (2022: €485 million).

There was a positive change in interest on portfolio hedges of interest-rate risk (portfolios comprising financial assets), which improved by €1,482 million to net income of €1,405 million (2022: net expense of €77 million). By contrast, there was a negative change in interest on portfolio hedges of interest-rate risk (portfolios comprising financial liabilities), which deteriorated by €402 million to a net expense of €421 million (2022: net expense of €19 million).

Interest expense for deposits from banks and customers rose by €4,652 million to €7,180 million (2022: €2,528 million), primarily for volume-related reasons. In 2023, this increase included a higher interest expense on home savings deposits due to a rise of €111 million in additions to provisions relating to building society operations. By contrast, the 2022 figure had mainly been influenced by a positive one-off item of €185 million in connection with the reversal of provisions relating to building society operations. Interest expense on debt certificates issued including bonds went up by €1,260 million to €1,754 million (2022: €494 million), mainly due to expansion of the portfolio of issued commercial paper.

Net fee and commission income grew by €58 million to €2,807 million (2022: €2,749 million). Net fee and commission income from lending and trust activities went up by €14 million year on year to €99 million (2022: €85 million) and that from financial guarantee contracts and loan commitments went up by €24 million to €84 million (2022: €60 million). By contrast, net fee and commission income from securities business diminished by €17 million to €2,308 million (2022: €2,325 million). This year-on-year change was mainly attributable to a decrease of €23 million in income from transaction fees for properties in Union Investment's real estate funds to €52 million (2022: €75 million) and a decrease in performance-related management fees of €21 million to €4 million (2022: €25 million) in the Union Investment Group. In payments processing (including card processing), this figure declined by €5 million to €144 million (2022: €149 million). Other net fee and commission income rose by €51 million to €64 million (2022: €13 million), partly due to lower expenses resulting from brokerage of credit insurance policies.

Gains and losses on trading activities deteriorated by €998 million to a net loss of €175 million, compared with a net gain of €823 million in the previous year. This change was due to the significant volatility of market prices, which – as a result of risk management – had opposing effects on gains and losses on non-derivative financial instruments and embedded derivatives on the one hand and on gains and losses on derivatives on the other. Gains and losses on non-derivative financial instruments and embedded derivatives deteriorated by €6,903 million to a net loss of €2,430 million (2022: net gain of €4,473 million). Gains and losses on exchange differences came to a net gain of €62 million (2022: net gain of €144 million). Conversely, gains and losses on derivatives improved by €5,987 million to a net gain of €2,193 million (2022: net loss of €3,794 million).

Gains and losses on investments amounted to a net loss of €72 million (2022: net loss of €119 million).

Within this figure, gains and losses on the disposal of shares and other variable-yield securities improved by €60 million to a net loss of €2 million (2022: net loss of 62 million), mainly because the prior-year figure had included a realized loss resulting from the disposal of investment fund units from the Union Investment Group's own-account investments. Gains and losses on the disposal of bonds and other fixed-income securities improved by €5 million to a net loss of €36 million (2022: net loss of €41 million).

Gains and losses on investments in associates amounted to a net loss of €5 million (2022: net gain of €15 million). The prior-year figure had, to a large extent, been attributable to a gain realized on the disposal of a direct equity investment held by VR Equitypartner.

Other gains and losses on valuation of financial instruments came to a net gain of €298 million (2022: net loss of €286 million). This positive change was predominantly attributable to a year-on-year improvement in the valuation of guarantee commitments and in the fair value measurement of Union Investment's own-account investments. Within the overall line item, gains and losses on financial instruments designated as at fair value through profit or loss improved by €274 million to a net gain of €114 million (2022: net loss of €160 million), gains and losses on derivatives used for purposes other than trading improved by €162 million to a net gain of €156 million (2022: net loss of €6 million), gains and losses on financial assets mandatorily measured at fair value through profit or loss improved by €146 million to a net gain of €71 million (2022: net loss of €75 million), and gains and losses from fair value hedge accounting improved by €1 million to a net loss of €44 million (2022: net loss of €45 million).

Net income from insurance business comprises the insurance service result, gains and losses on investments held by insurance companies and other insurance company gains and losses, insurance finance income or expenses, and gains and losses from the derecognition of financial assets measured at amortized cost in the insurance business.

IFRS 17 Insurance Contracts superseded the previous standard for accounting for insurance contracts (IFRS 4 Insurance Contracts) with effect from January 1, 2023. IFRS 17 requires comparative information to be presented for the period immediately preceding the date of initial application of IFRS 17. Retrospective initial application thus resulted in adjustments to the income statement for the previous year.

In 2023, net income from insurance business increased by €615 million to €891 million (2022: €276 million).

The increase was primarily due to the improvement – driven by the situation in the capital markets – in gains and losses on investments held by insurance companies and other insurance company gains and losses of €6,757 million to a net gain of €2,998 million (2022: net loss of €3,759 million). By contrast, insurance finance income or expenses deteriorated by €6,058 million to a net expense of €4,107 million (2022: net income of €1,951 million), largely in relation to policyholders' share of investment returns. The insurance service result amounted to a profit of €1,994 million (2022: profit of €2,077 million).

There was a net addition to **loss allowances** of €362 million (2022: net addition of €304 million).

The net addition to loss allowances for loans and advances to customers was €374 million (2022: net addition of €236 million). Loss allowances for loans and advances to banks came to a net reversal of €14 million (2022: net addition of €30 million). The net addition to other loss allowances for loans and advances was €3 million (2022: net addition of €42 million). Loss allowances for investments amounted to a net reversal of €2 million (2022: net reversal of €4 million).

Further disclosures on the nature and extent of risks arising from financial instruments and insurance contracts can be found in note 86 in the notes to the consolidated financial statements.

Administrative expenses went up by €150 million to €4,597 million (2022: €4,447 million). Within this figure, staff expenses advanced to €2,174 million, compared with €2,072 million in 2022. This increase was predominantly due to pay rises and appointments to vacant positions. Other administrative expenses climbed to €2,423 million (2022: €2,374 million), mainly because of higher expenses for consultancy and IT. By contrast, there was a fall in the contributions to the bank levy.

Other net operating income amounted to €56 million (2022: €204 million).

Restructuring expenses rose by €89 million to €94 million (2022: €5 million) on the back of additions to provisions for termination benefits linked with restructuring. Income and expense resulting from impairment losses recognized on other intangible assets, and reversals thereof, deteriorated by €53 million to a net expense of €53 million (2022: €0 million), largely owing to impairment of recognized customer relationships in the Union Investment Group. Gains and losses on non-current assets and disposal groups classified as held for sale deteriorated by €24 million to a net gain of €25 million (2022: net gain of €49 million), which included realized gains on disposals of €25 million (2022: €51 million). Gains on the disposal of other assets also contracted, falling by €22 million to €21 million (2022: €43 million). By contrast, income from the reversal of provisions and accruals rose by €18 million to €175 million (2022: €157 million) and residual other net operating income improved by €21 million to a net expense of €18 million (2022: net expense of €39 million).

Profit before taxes for 2023 amounted to €3,189 million, compared with €2,252 million in 2022.

The **cost/income ratio** (i.e. the ratio of administrative expenses to operating income) for the reporting year came to 56.4 percent (2022: 63.5 percent).

The **regulatory return on risk-adjusted capital (RORAC)** was 17.1 percent (2022: 11.6 percent).

Income taxes amounted to €955 million in the reporting year (2022: €912 million).

The DZ BANK Group generated an improved **net profit** of €2,234 million in 2023, compared with a net profit of €1,341 million in 2022.

The following provides an explanation of the above information and the details below (section 3.2) concerning the financial performance of the DZ BANK Group with reference to the corresponding presentation in the outlook for 2023 (chapter V of the 2022 group management report).

In 2023, the DZ BANK Group generated profit before taxes that was significantly higher than the budgeted figure. Net interest income in the reporting year was much higher than expected, which was mainly attributable to an increase in customer business at DZ BANK – CICB, distributions from Union Investment's own-account investments, higher money market income, and interest on deposits at DZ PRIVATBANK. A slight fall in net fee and commission income had been forecast in 2022, but it actually increased slightly in 2023, primarily due to higher volume-related income. As had been anticipated in 2022, gains and losses on trading activities deteriorated markedly in the reporting year. Despite a net gain having been predicted in 2022, gains and losses on investments amounted to a net loss once again in the reporting year. This was largely due to the postponement of exits from direct equity investments at VR Equitypartner that were planned for 2023. Other gains and losses on valuation of financial instruments had only been expected to return to a normal level, but in fact improved markedly in the year under review. Net income from insurance business rose substantially in the reporting year, exceeding the budgeted figure. Net additions to loss allowances remained considerably below the budgeted figure for 2023. Administrative expenses saw a marginal increase, which was in line with the previous year's forecast. Other net operating income fell sharply in 2023, as had been forecast in 2022.

3.2 Financial performance in detail

The following sections describe the details of the financial performance of the DZ BANK Group's operating segments in 2023 compared with 2022.

3.2.1 BSH

Net interest income in the BSH subgroup decreased by €194 million to €550 million (2022: €744 million).

Interest expense in building society operations (including interest expense on hedges) went up by €302 million to €709 million (2022: €407 million).

Within this figure, interest expense for home savings deposits amounted to €653 million (2022: €405 million). This included additions to provisions relating to building society operations of €217 million (2022: €106 million) and a sum of €434 million attributable to the interest rates applicable to current tariffs (2022: €482 million). The prior-year figure had been influenced by a positive one-off item of €185 million connected to the reversal of provisions relating to building society operations.

The interest-rate swaps used to manage interest income and expense in the context of portfolio fair value hedge accounting reduced net interest income by a total of €47 million (2022: €3 million).

In the case of loans issued under advance or interim financing arrangements and other building loans, income amounted to €1,070 million (2022: €1,039 million). Income from home savings loans amounted to €98 million (2022: €70 million).

Interest income arising on investments rose by €64 million to €361 million (2022: €297 million). Interest expense for borrowing increased by €40 million to €90 million (2022: €50 million), which included income of €55 million from the early redemption of promissory notes issued by BSH.

BSH incorporates the fees, commissions, and transaction costs directly assignable to the acquisition of home savings contracts and loan agreements into the effective interest method applied to home savings deposits and building loans. In the reporting year, this decreased net interest income by €199 million (2022: €209 million). Of this sum, €94 million was attributable to home savings deposits (2022: €106 million) and €105 million to building loans (2022: €103 million).

Net fee and commission income declined to a net expense of €13 million (2022: net income of €11 million), primarily owing to the reduction in new home savings business and new home finance business as well as the absence of the annual fees for the Fuchs 03 scale of rates and charges. New home savings business and new home finance business are the main drivers of net fee and commission income.

In the home savings business in 2023, BSH entered into approximately 459 thousand (2022: 463 thousand) new home savings contracts with a volume of €31.0 billion (2022: €34.1 billion) in Germany.

In the home finance business, the realized volume of new business came to €9.2 billion (2022: €16.3 billion) in Germany.

Gains and losses on investments amounted to €0 million (2022: net loss of €90 million). The figure for the previous year had been affected by a net loss of €60 million on the disposal of bonds, whereas there were no disposals during the year under review. Furthermore, valuations of joint ventures had led to a net loss of €30 million in 2022.

Loss allowances amounted to a net addition of €18 million (2022: net addition of €16 million).

Administrative expenses went up by €8 million to €536 million (2022: €528 million). At €283 million, staff expenses were €9 million higher than the prior-year level of €274 million as a result of salary increases. Other administrative expenses amounted to €253 million (2022: €254 million).

Other net operating income increased by €22 million to €38 million (2022: €16 million), mainly as a result of lower expenses relating to pre-litigation legal risks of €2 million (2022: €48 million). In 2022, other net operating income had included the recognition of canceled, non-interest-bearing home savings deposits in an amount of €30 million, whereas only €3 million was recognized in 2023.

Profit before taxes went down by €123 million to €20 million (2022: €143 million) because of the changes described above.

The **cost/income ratio** in 2023 was 93.4 percent (2022: 76.7 percent).

Regulatory RORAC was 1.6 percent (2022: 11.2 percent).

3.2.2 R+V

IFRS 17 Insurance Contracts superseded the previous standard for accounting for insurance contracts (IFRS 4 Insurance Contracts) with effect from January 1, 2023. IFRS 17 requires comparative information to be presented for the period immediately preceding the date of initial application of IFRS 17. Retrospective initial application thus resulted in adjustments to the income statement for the previous year.

The **insurance service result** amounted to a profit of 1,972 million (2022: profit of €1,980 million). This figure included insurance revenue amounting to €12,317 million (2022: €12,424 million) and insurance service expenses of €10,267 million (2022: €10,321 million). Net expenses from reinsurance contracts held stood at €78 million (2022: €123 million).

In the life and health insurance business, insurance revenue amounted to €3,042 million (2022: €3,674 million). Insurance service expenses amounted to €1,956 million (2022: €2,282 million). Net expenses from reinsurance contracts held in this business stood at €0 million (2022: €16 million). This included amortization of the contractual service margin in an amount of €273 million (2022: €243 million) and release of the risk adjustment in an amount of €53 million (2022: €36 million).

In the non-life insurance business, insurance revenue amounted to €7,239 million (2022: €6,831 million). The main influence on this revenue was premiums earned on portfolios measured under the premium allocation approach. The insurance service expenses of the non-life insurance business stood at €6,887 million (2022: €6,104 million). Of this sum, €5,104 million (2022: €4,656 million) was attributable to expenses for claims, comprising payments for claims of €4,980 million (2022: €4,614 million) and the change in the liability for incurred claims amounting to a decrease of €124 million (2022: decrease of €42 million). It also included the change in losses on insurance contracts, which amounted to a decrease of €119 million (2022: increase of €136 million). Other insurance service expenses totaled €1,664 million (2022: €1,584 million) and primarily consisted of insurance acquisition cash flows and administration costs of €1,664 million (2022: €1,584 million). Net expenses from reinsurance contracts held in this business came to €63 million (2022: €58 million). The combined ratio (gross), which is the ratio of insurance service expenses to insurance revenue, stood at 95.14 percent (2022: 89.36 percent). Major claims in this business amounted to €246 million as at December 31, 2023.

Insurance revenue in the inward reinsurance business amounted to €2,036 million (2022: €1,920 million). This included not only premium income but also amortization of the contractual service margin in an amount of €231 million (2022: €174 million) under the general measurement model. Insurance service expenses came to €1,424 million (2022: €1,936 million). Net expenses from reinsurance contracts totaled €15 million (2022: €49 million). Expenses of €279 million arose for major claims in the inward reinsurance business.

Gains and losses on investments held by insurance companies and other insurance company gains and losses improved by €6,884 million to a net gain of €3,136 million (2022: net loss of €3,748 million). This figure includes the fair value-based gains and losses on investments held by insurance companies in respect of insurance products constituting unit-linked life insurance for the account and at the risk of employees, employers, and holders of life insurance policies (unit-linked contracts), which amounted to a net gain of €2,070 million (2022: net loss of €2,764 million).

Long-term interest rates were lower than in 2022. The ten-year Bund/swap rate was 2.49 percent as at December 31, 2023 (December 31, 2022: 3.20 percent). Spreads on interest-bearing securities largely narrowed during the reporting year and had a more positive impact on gains and losses on investments held by insurance companies and other insurance company gains and losses than in the previous year, when spreads had widened. A weighted spread calculated in accordance with R+V's portfolio structure stood at 77.0 points as at December 31, 2023 (December 31, 2022: 89.8 points). In the comparative period, this spread had risen from 66.7 points as at December 31, 2021 to 89.8 points as at December 31, 2022.

During the reporting year, equity markets relevant to R+V performed better than in 2022. For example, the EURO STOXX 50, a share index comprising 50 large, listed companies in the eurozone, saw a rise of 728 points from the start of 2023, closing the year under review on 4,522 points (December 31, 2022: 3,794 points). The index had dropped by 504 points in 2022.

In the reporting year, movements in exchange rates between the euro and various currencies were generally less favorable than in the previous year. For example, the US dollar/euro exchange rate on December 31, 2023 was 0.9053 compared with 0.9370 as at December 31, 2022. In the previous year, the exchange rate had moved from 0.8794 as at December 31, 2021 to December 0.9370 as at December 31, 2022.

These trends resulted in a €7,213 million positive change – resulting from the effects of changes in positive fair values – in unrealized gains and losses to a net gain of €1,915 million (2022: net loss of €5,298 million), a €687 million increase in the contribution to earnings from the derecognition of investments to a loss of €255 million (2022: loss of €942 million), and a €145 million rise in net income under current income and expense to €2,423 million (2022: €2,278 million). However, there was a €681 million deterioration in foreign-exchange gains and losses to a net loss of €282 million (2022: net gain of €399 million) and a €133 million decline in the balance of depreciation, amortization, impairment losses, and reversals of impairment losses to a net expense of €234 million (2022: net expense of €101 million). Furthermore, other non-insurance gains and losses declined by €346 million to a net loss of €429 million (2022: net loss of €84 million). Changes in gains and losses on investments held by insurance companies are offset to an extent by corresponding changes in insurance finance income or expenses, so the effect on profit or loss is only partial.

Insurance finance income or expenses deteriorated by €6,058 million to a net expense of €4,107 million (2022: net income of €1,951 million). In the life and health insurance business, this line item deteriorated by €5,884 million to a net expense of €3,813 million (2022: net income of €2,071 million), which was mainly due to the aforementioned compensatory effect. Insurance finance income or expenses came to a net expense of €179 million in the non-life insurance business (2022: net expense of €48 million) and a net expense of €115 million in inward reinsurance (2022: net expense of €72 million). The amount within insurance finance income or expenses relating to discounting at the discount rate used at initial measurement (locked-in discount rate) amounted to a net expense of €125 million in non-life insurance (2022: net expense of €66 million) and a net expense of €115 million in inward reinsurance (2022: net expense of €73 million).

The factors described above resulted in an increase in **profit before taxes** to €1,008 million (2022: €187 million).

Regulatory RORAC was 11.3 percent (2022: 2.0 percent).

3.2.3 TeamBank

Net interest income amounted to €530 million (2022: €511 million). This year-on-year rise of €19 million was due to volume growth and, above all, the €30 million increase in income from overnight money to €31 million (2022: €1 million). Average loans and advances to customers in the reporting year came to €9,675 million (2022: €9,119 million).

As at December 31, 2023, loans and advances to customers stood at €9,768 million (December 31, 2022: €9,583 million). The number of customers rose to 1,039 thousand (December 31, 2022: 1,010 thousand). As at December 31, 2023, TeamBank was working with 640 (December 31, 2022: 669) of Germany's 690 (December 31, 2022: 729) cooperative banks and with 152 (December 31, 2022: 154) partner banks in Austria.

Net fee and commission income declined by €26 million to a net expense of €39 million (2022: net expense of €13 million), mainly owing to the €22 million reduction in fee and commission income from the brokerage of credit insurance policies as a consequence of the German Act on Supporting the Regulation of Crowdfunding Service Providers (SFBG).

The net addition to **loss allowances** amounted to €133 million (2022: net addition of €100 million). Rating downgrades due to customers' poorer payment history led to the rise in loss allowances. The year-on-year fall in new business had a countervailing effect.

Administrative expenses amounted to €285 million (2022: €286 million). Within this figure, staff expenses totaled €106 million (2022: €108 million) and other administrative expenses came to €179 million (2022: €178 million).

Profit before taxes stood at €81 million and thus decreased by €53 million compared with the prior-year figure of €134 million.

TeamBank's **cost/income ratio** in 2023 was 57.1 percent (2022: 55.1 percent).

Regulatory RORAC was 16.3 percent (2022: 22.8 percent).

3.2.4 UMH

Net interest income came to €71 million (2022: €12 million), primarily thanks to income of €25 million from credit balances with banks (2022: €1 million) and distributions from own-account investments of €43 million (2022: €6 million).

Net fee and commission income declined by €18 million to €2,018 million (2022: €2,036 million). This total included the volume-related income contribution of €1,849 million (2022: €1,801 million), income of €52 million from transaction fees for properties in Union Investment's real estate funds (2022: €75 million), and performance-related management fees of €4 million (2022: €25 million). Expenses for the performance bonus for sales partners came to €57 million (2022: €44 million).

The change in net fee and commission income was predominantly due to the factors described below.

The average assets under management of Union Investment totaled €431.1 billion (2022: €428.7 billion).

Union Investment generated net inflows from its retail business of €12.2 billion (2022: €10.7 billion) in collaboration with the local cooperative banks.

In its institutional business, Union Investment recorded net inflows of €4.6 billion (2022: €6.8 billion).

The number of traditional fund-linked savings plans, which are used by retail customers as investments aimed at long-term capital accumulation, stood at 3.7 million contracts as at December 31, 2023 (December 31, 2022: 3.8 million), with a decrease in the 12-month savings volume to €6.4 billion (December 31, 2022: €7.1 billion).

The total assets in the portfolio of Riester pension products amounted to €26.6 billion (December 31, 2022: €23.3 billion).

The number of fund-linked savings plans managed by Union Investment in its retail business as at December 31, 2023 totaled 6.5 million (December 31, 2022: 6.5 million). These plans included contracts under employer-funded capital formation schemes as well as the traditional savings plans and Riester pension contracts referred to above.

The open-ended real estate funds offered by Union Investment, which are an intrinsic-value-based component of the investment mix, generated net new business totaling €0.1 billion in 2023 (2022 €2.7 billion).

Assets under management in the PrivatFonds family amounted to €22.1 billion as at December 31, 2023 (December 31, 2022: €22.7 billion).

The portfolio volume of funds managed by Union Investment that conform with article 8 or article 9 of the EU Sustainable Finance Disclosure Regulation (SFDR) amounted to €128.7 billion (December 31, 2022: €122.4 billion). As at December 31, 2023, this figure included €90.6 billion in product formats defined as sustainable by Union Investment based on its own criteria (December 31, 2022: €81.2 billion).

Gains and losses on investments amounted to a net loss of €31 million (2022: net loss of €58 million). Within this figure, the net loss realized on the disposal of investment fund units from own-account investments came to €2 million (2022: €62 million). A net loss of €28 million arose due to the impairment of a joint venture that is included in the consolidated financial statements using the equity method (2022: €0 million).

Other gains and losses on valuation of financial instruments improved by €352 million to a net gain of €197 million (2022: net loss of €155 million), which was largely attributable to the net gain of €143 million from the valuation of guarantee commitments (2022: net loss of €125 million) and the net gain of €54 million arising on the valuation of Union Investment's own-account investments (2022: net loss of €30 million).

Administrative expenses went up by €37 million to €1,231 million (2022: €1,194 million). Staff expenses increased by €28 million to €595 million (2022: €567 million) owing to higher average pay and appointments to new and vacant posts. Other administrative expenses swelled by €9 million to €636 million (2022: €627 million), largely because of higher amortization and impairment on software.

Other net operating income amounted to a net loss of €50 million (2022: net income of €54 million). This change was mainly attributable to impairment losses on recognized customer relationships, restructuring expenses, and smaller reversals of provisions.

Based on the changes described above, **profit before taxes** amounted to €974 million (2022: €695 million).

The **cost/income ratio** in 2023 was 55.8 percent (2022: 63.2 percent).

Regulatory RORAC was greater than 100.0 percent (2022: greater than 100.0 percent).

3.2.5 DZ BANK – CICB

Net interest income is primarily attributable to the lending business portfolios (Corporate Banking business line), the portfolios from the capital markets business (including the portfolios of Group Treasury), and the long-term equity investments allocated to the central institution and corporate bank. Net interest income increased by €370 million to €1,483 million (2022: €1,113 million).

In the Corporate Banking business line, net interest income rose by €6 million to €556 million (2022: €550 million). The net interest income in the four regional corporate customer divisions plus Central Corporate Banking increased to €320 million (2022: €309 million). The rise in net interest income was attributable to the higher lending volume.

Net interest income in the Structured Finance division amounted to €167 million, a decrease of €6 million compared with the prior-year figure of €173 million. The increased volume of lending did not make up for the lower margins, which were partly due to the competitive situation.

In the Investment Promotion division, net interest income advanced by €1 million to €69 million (2022: €68 million). This year-on-year rise was primarily due to a modest level of portfolio growth.

Net interest income from money market and capital markets business increased by €475 million to €858 million (2022: €383 million). This increase was firstly attributable to the deposit-taking operating business in the short-dated maturity segment, particularly deposits from corporate customers. Secondly, the rise in interest rates in the money market led to increased net interest income from the investment of liquidity in the excess of non-interest-bearing liabilities (e.g. equity) over non-interest-bearing assets.

As bonus interest ceased to be paid in connection with participation in the TLTRO III program in the second half of 2022, no such bonus interest was received in 2023 (2022: €71 million).

Other net interest income from loan administration fees fell by €4 million to €25 million (2022: €29 million).

Income from profit-pooling, profit-transfer, and partial profit-transfer agreements, together with income from other shareholdings and current income from investments in subsidiaries, amounted to €44 million (2022: €79 million). The reduction compared with 2022 can be explained by lower income from long-term equity investments at VR Equitypartner GmbH (down by €15 million to €9 million), DZ Beteiligungsgesellschaft mbH Nr. 18 (down by €9 million to €0 million), Deutsche WertpapierService Bank AG (dwpbank) (down by €6 million to €0 million), and IMPETUS Bietergesellschaft mbH (down by €5 million to €0 million).

Net fee and commission income rose by €55 million to €544 million (2022: €489 million).

The principal sources of income were service fees in the Corporate Banking business line (in particular, from lending business including guarantees and international business), in the Capital Markets business line (mainly from securities issuance and brokerage business, agents' fees, transactions on futures and options exchanges, financial services, and the provision of information), and in the Transaction Banking business line (primarily from payments processing including credit card processing, safe custody, and gains from the currency service business).

In the Corporate Banking business line, net fee and commission income was €16 million higher than in the previous year at €199 million (2022: €183 million). This included an increase of €10 million in relation to fees and commissions in connection with loan processing and an increase of €9 million for guarantee contracts / loan commitments.

In the Capital Markets business line, the contribution to net fee and commission income rose by €22 million to €214 million (2022: €192 million). One of the main reasons for this was the increase of €14 million in transaction fees from the securitization business.

Net fee and commission income in the Transaction Banking business line was also up year on year at €176 million, a rise of €6 million compared with the prior-year figure of €170 million. This included a €9 million rise in connection with payments processing fees and a €7 million rise related to safe custody and securities management business. By contrast, income from currency service business declined by €6 million.

As part of service procurement arrangements, DZ BANK has transferred processing services in the payments processing business to equensWorldline SE and Cash Logistik Security AG, and in securities business to Deutsche WertpapierService Bank AG. The expenses arising in connection with obtaining services from the above external processing companies amounted to a total of €217 million (2022: €192 million) and were reported under the net fee and commission income of the Capital Markets / Transaction Banking business lines.

Gains and losses on trading activities amounted to a net gain of €674 million (2022: net gain of €871 million).

Gains and losses on trading activities reflect the business activity of the Capital Markets business line and gains and losses on money market business entered into for trading purposes (mainly repurchase agreements) and on derivatives of the Group Treasury division (‘financial assets and liabilities measured at fair value through profit or loss’ (fair value PL)). The fair value gains and losses on financial assets and liabilities designated as at fair value through profit or loss (fair value option) are – apart from credit rating effects – also included in gains and losses on trading activities. The credit-rating-related effects pertaining to these financial instruments are included in other gains and losses on valuation of financial instruments if the instruments are financial assets or in equity if the instruments are financial liabilities.

Gains and losses on operating trading activities in the Capital Markets business line amounted to a net gain of €595 million, compared with €528 million in 2022.

Gains and losses on trading activities benefited from the benign conditions in the capital markets in 2023. Strong demand from customers also contributed to the very good business performance in foreign exchange trading, in structured products, and in the bond business. At the same time, there was encouraging growth in sales of retail investment certificates compared with the previous year.

IFRS rules on the recognition and measurement of financial instruments can affect the recognition of the bank’s internal model for managing market risk and the recognition of income from the operating business in the income statement. These include accounting mismatches that arise when a different basis has been used to measure assets or liabilities or to recognize gains and losses. This means that, in some circumstances, effects cannot be recognized in the same period and, instead, are only recognized correctly in the income statement if the whole term of the affected transactions is considered. IFRS rules can also result in income being recognized in different income items (e.g. net interest income). For internal management purposes, these effects are referred to as ‘non-operational, IFRS-related effects’. These effects can have a material impact on the level of gains and losses on trading activities, primarily due to movements in interest rates and spreads (on own issues). In 2023, these effects provided a boost of €79 million to gains and losses on trading activities, which was down on the previous year (2022: €343 million).

Gains and losses on investments deteriorated by €29 million to a net loss of €42 million (2022: net loss of €13 million). The net loss in the reporting year resulted from expenses of €211 million from the sale of securities in the category ‘financial assets measured at fair value through other comprehensive income’ (2022: €145 million) combined with gains of €170 million arising from the unwinding of hedges accounted for in the category ‘fair value through other comprehensive income’ in the context of portfolio fair value hedge accounting (2022: €131 million). Securities in the category ‘fair value through profit or loss’ generated a net gain of €5 million (2022: €1 million). The net loss on investments also included the write-down of €6 million on the carrying amount of Union Investment Real Estate GmbH.

Other gains and losses on valuation of financial instruments deteriorated to a net loss of €93 million (2022: net loss of €91 million). Within this figure, credit-risk-related measurement effects relating to financial assets measured using the fair value option declined by €61 million to a net loss of €56 million (2022: net gain of €5 million). By contrast, the net loss from ineffectiveness in hedge accounting shrank by €48 million to €41 million (2022: net loss of €89 million) and the valuation of financial assets mandatorily measured at fair value through profit or loss improved by €11 million to a net gain of €4 million (2022: net loss of €7 million).

Gains and losses from the derecognition of financial assets measured at amortized cost deteriorated by €67 million to a net loss of €35 million (2022: net gain of €32 million) due to an uptick in repurchases by issuers.

Loss allowances amounted to a net addition of €82 million (2022: net addition of €172 million). Within this figure, the net additions in the lending business and in respect of investments amounted to €139 million. Of this total, net reversals of €55 million related to loss allowances in stage 1, net additions of €62 million related to loss allowances in stage 2, and net additions of €132 million related to loss allowances in stage 3. The net reversal in respect of recoveries on loans and advances previously impaired, directly recognized impairment losses, other gains and losses on purchased or originated credit-impaired assets (POCI assets), additions to other provisions for loans and advances, and gains and losses from the credit-risk-related modification was €57 million (2022: net reversal of €27 million).

The net additions of €7 million in stages 1 and 2 in 2023 were attributable to fixed staging (risk-based transfer from stage 1 to stage 2 for construction, home improvement stores, textiles, and other sectors). Furthermore, loss allowances were increased in stage 3 owing to additions in respect of individual counterparties following changes in credit ratings. These were partly offset by reversals as a result of improvements in the credit ratings of some counterparties.

Administrative expenses went up by €105 million to €1,455 million (2022: €1,350 million).

Staff expenses went up by €54 million to €676 million (2022: €622 million) on the back of higher wages and salaries – and thus higher social security expenses – resulting from an increase in the number of employees.

Other administrative expenses grew by €51 million to €779 million (2022: €728 million). Within this figure, the expenses for the restructuring fund for banks (bank levy) and contributions to the BVR protection scheme rose by €5 million to €86 million (2022: €81 million).

Furthermore, IT costs increased by €14 million to €206 million (2022: €192 million), office expenses by €14 million to €45 million (2022: €31 million), and consultancy expenses by €15 million to €220 million (2022: €205 million). The depreciation and amortization charges included in other administrative expenses went down by €7 million to €69 million (2022: €76 million). The breakdown of these charges was as follows: depreciation of right-of-use assets €19 million (2022: €29 million), depreciation of property, plant and equipment, and investment property €28 million (2022: €29 million), and amortization of other intangible assets €22 million (2022: €18 million).

Other net operating income amounting to €41 million (2022: €26 million) primarily included reversals of provisions and accruals amounting to income of €112 million (2022: income of €67 million), expenses of €54 million for restructuring provisions and for the recognition of provisions for organizational capacity adjustments in connection with ongoing technical progress and the digitalization of processes at DZ BANK (2022: €0 million), and additions to provisions for onerous contracts relating to leased out buildings amounting to an expense of €8 million (2022: expense of €18 million).

Profit before taxes amounted to €1,035 million in the reporting year, which was €131 million higher than the figure of €904 million reported for 2022.

The **cost/income ratio** in 2023 was 56.6 percent (2022: 55.6 percent).

Regulatory RORAC was 18.9 percent (2022: 15.2 percent).

3.2.6 DZ HYP

At €721 million, the **net interest income** of DZ HYP was down by €11 million year on year (2022: €732 million). This change largely related to the lower level of early redemption payments received in 2023, which amounted to €2 million (2022: €34 million.

The volume of new business (including public-sector finance) stood at €8,627 million (2022: €10,439 million). In the corporate customer business, the volume of new business came to €7,439 million (2022: €8,064 million). In the retail customer business, the volume of new commitments amounted to €753 million (2022: €1,624 million). In the public-sector business, DZ HYP generated a new business volume of €435 million (2022: €751 million).

The volume of new lending jointly generated with the local cooperative banks in the corporate customer business amounted to €2,552 million in 2023 (2022: €2,978 million).

Net fee and commission income stood at €9 million (2022: €18 million). The figure for the previous year had included income of €11 million from participation in the DZ BANK Group's bidder group in the ECB's TLTRO III tender procedures; there was no such income in the year under review.

Gains and losses on investments deteriorated to €0 million (2022: net gain of €31 million). Of the net gain for 2022, €28 million had been linked to the sale of government bonds.

Other gains and losses on valuation of financial instruments improved by €101 million to a net gain of €87 million (2022: net loss of €14 million). This was largely thanks to the contribution to earnings of €77 million from issued instruments measured at fair value (2022: €8 million). Moreover, the movement of credit spreads on bonds from eurozone periphery countries resulted in a contribution to earnings of €8 million (2022: €25 million).

Loss allowances amounted to a net addition of €111 million (2022: net addition of €78 million). The addition to loss allowances in 2023 was mainly a reflection of specific loan loss allowances on a small number of exposures, whereas the addition in 2022 had predominantly been due to portfolio loan loss allowances.

Administrative expenses went down by €9 million to €247 million (2022: €256 million). Staff expenses increased to €111 million (2022: €104 million) as a result of headcount growth and higher provisions for pensions and other post-employment benefits. Other administrative expenses fell to €136 million (2022: €152 million), mainly because of a reduction in the bank levy to €33 million (2022: €48 million).

Profit before taxes advanced to €476 million (2022: €455 million).

The **cost/income ratio** in 2023 was 29.6 percent (2022: 32.4 percent).

Regulatory RORAC was 35.2 percent (2022: 33.6 percent).

3.2.7 DZ PRIVATBANK

The **net interest income** of DZ PRIVATBANK rose by €64 million to €147 million (2022: €83 million), primarily thanks to higher income in the money market business and from interest on deposits due to the changed interest-rate regime.

The average volume of guaranteed LuxCredit loans issued by DZ PRIVATBANK, which acts as the competence center for foreign-currency lending and investing in the interest-earning business, amounted to €5.0 billion (2022: €5.2 billion).

Net fee and commission income was unchanged year on year at €220 million. Contributions to earnings in private banking and the fund services business are the main drivers of net fee and commission income.

As at December 31, 2023 high-net-worth individuals' assets under management, which comprise the volume of securities, derivatives, and deposits of customers in the private banking business, came to €23.4 billion (December 31, 2022: €21.2 billion).

The value of funds under management amounted to €189.0 billion as at December 31, 2023 (December 31, 2022: €168.0 billion). The number of fund-related mandates was 582 (December 31, 2022: 565).

Administrative expenses increased by €16 million to €293 million (2022: €277 million). Within this figure, staff expenses swelled to €166 million (2022: €160 million), largely due to higher salary costs in connection with the statutory index-linking of salaries in Luxembourg and the growth in the number of employees. Other administrative expenses climbed to €126 million (2022: €116 million) owing to higher regulatory contributions and a rise in costs for IT and consultancy.

Other net operating income deteriorated to a net loss of €16 million (2022: net income of €4 million). In 2022, DZ PRIVATBANK S. A. initiated its DZ PRIVATBANK 2030 project in order to forge ahead with the strategy of rapid growth that the bank has been pursuing since 2019 and to further strengthen its positioning for the future. In line with DZ BANK's 'Verbund First 4.0' strategic program, the project's key aims include even closer collaboration with the DZ BANK Group and the Cooperative Financial Network, plus a greater focus on customers in Germany. In 2023, a provision for restructuring of €18 million was recognized in view of the reorganization of the legal structure as part of the planned relocation of the registered office of DZ PRIVATBANK S. A.

Profit before taxes climbed to €83 million (2022: €52 million).

The **cost/income ratio** in 2023 was 77.7 percent (2022: 83.7 percent).

Regulatory RORAC was 25.3 percent (2022: 14.1 percent).

3.2.8 VR Smart Finanz

Net interest income at VR Smart Finanz amounted to €123 million (2022: €116 million). The increase in net interest income was mainly due to a year-on-year rise of 3.0 percent in the lending and object finance portfolio volume to €3,007 million (December 31, 2022: €2,919 million) and higher net margins.

New lending and object finance business with customers in the small business, self-employed, and SME segments was encouraging in the reporting year, increasing by €182 million or 17.7 percent to €1,208 million (2022: €1,026 million). The volume of new 'VR Smart express' business came to €516 million (2022: €472 million). New business involving the 'VR Smart flexibel' business loan increased to €471 million (2022: €310 million). Other new leasing and object finance business held steady at €222 million (2022: €220 million).

Net fee and commission income, which amounted to a net expense of €29 million, was unchanged year on year.

Loss allowances in 2023 amounted to a net addition of €18 million (2022: net addition of €9 million). The growth of expenses was mainly due to the rise in defaults in respect of 'VR Smart flexibel' and 'VR Smart express'. The increase in new business also resulted in higher risk expenses.

Administrative expenses decreased to €73 million (2022: €76 million). Staff expenses came to €44 million (2022: €45 million). Other administrative expenses amounted to €29 million (2022: €32 million).

The **profit before taxes** of VR Smart Finanz amounted to €1 million (2022: €3 million).

The **cost/income ratio** in 2023 was 79.3 percent (2022: 86.4 percent).

Regulatory RORAC was 0.7 percent (2022: 1.8 percent).

3.2.9 DZ BANK – holding function

Net interest income contains the interest expense on subordinated capital and senior non-preferred paper purchased by group entities as well as issued subordinated capital and senior non-preferred paper. It also contains the net interest income/expense resulting from obtaining liquidity from the excess of non-interest-bearing assets (e.g. long-term equity investments) over non-interest-bearing liabilities.

Net interest income amounted to a net expense of €103 million in the reporting year (2022: net expense of €51 million).

The net interest expense on purchased and issued subordinated capital and senior non-preferred paper fell by €22 million to €69 million (2022: €47 million).

The net interest expense resulting from obtaining liquidity from the excess of non-interest-bearing assets over non-interest-bearing liabilities amounted to €34 million in the year under review (2022: €4 million). The deterioration was due to higher market interest rates in the short-dated segment.

Administrative expenses went up by €25 million year on year to €253 million (2022: €228 million).

The protection levies (in particular the bank levy and contributions to the BVR protection scheme) declined by €18 million to €49 million (2022: €67 million). IT and project expenses increased from €72 million in 2022 to €93 million in 2023. Expenses from the group management function rose by €17 million to €78 million (2022: €61 million). Other expenses for the benefit of the group and local cooperative banks went up by €4 million to €33 million (2022: €28 million).

3.2.10 Other/Consolidation

The consolidation-related adjustments shown under Other/Consolidation to reconcile operating segment profit/loss before taxes to consolidated profit/loss before taxes are attributable to the elimination of intragroup transactions and to the fact that investments in joint ventures and associates were accounted for using the equity method. Differences between the figures in internal management reporting and those reported in the consolidated financial statements that arise from the recognition of internal transactions in the DZ BANK – CICB operating segment are also eliminated.

The adjustments to net interest income were primarily the result of the elimination of intragroup dividend payments and profit distributions in connection with intragroup liabilities to dormant partners and were also attributable to the early redemption of issued bonds and commercial paper that had been acquired by entities in the DZ BANK Group other than the issuer. Internal transactions in the DZ BANK – CICB operating segment were also eliminated in net interest income and with offsetting entries under gains and losses on trading activities.

The figure under Other/Consolidation for net fee and commission income largely relates to the fee and commission business of TeamBank and the BSH subgroup with the R+V subgroup.

The remaining adjustments are mostly also attributable to the consolidation of income and expenses.

4 Net assets

As at December 31, 2023, the DZ BANK Group's **total assets** had increased by €16,224 million to €644,589 million (December 31, 2022: €628,365 million).

The **volume of business** amounted to €1,195,012 million (December 31, 2022: €1,132,269 million). This figure comprised the total assets, the assets under management at UMH as at December 31, 2023 amounting to €455,152 million (December 31, 2022: €413,115 million), the financial guarantee contracts and loan commitments amounting to €93,327 million (December 31, 2022: €88,618 million), and the volume of trust activities amounting to €1,944 million (December 31, 2022: €2,171 million).

Cash and cash equivalents went up by €8,113 million to €101,830 million (December 31, 2022: €93,717 million) as a result of the corresponding rise in balances with central banks. The increase was predominantly attributable to DZ BANK – CICB (liquidity management function).

Loans and advances to banks rose to €128,867 million (December 31, 2022: €123,444 million). Loans and advances to banks in Germany swelled to €122,502 million (December 31, 2022: €114,015 million), largely because of the increased volume of funding for the local cooperative banks, whereas loans and advances to foreign banks decreased to €6,364 million (December 31, 2022: €9,429 million).

Loans and advances to customers amounted to €204,776 million, which was higher than the figure of €203,646 million reported as at December 31, 2022. Loans and advances to customers in Germany grew to €178,389 million (December 31, 2022: €176,145 million), whereas loans and advances to foreign customers declined to €26,388 million (December 31, 2022: €27,501 million).

Financial assets held for trading amounted to €34,961 million (December 31, 2022: €48,909 million). Within this amount, derivatives (positive fair values) stood at €16,482 million (December 31, 2022: €21,474 million), bonds and other fixed-income securities at €8,334 million (December 31, 2022: €7,729 million), shares and other variable-yield securities at €1,329 million (December 31, 2022: €1,388 million), money market placements at €7,815 million (December 31, 2022: €17,058 million), and promissory notes and registered bonds at €1,000 million (December 31, 2022: €1,259 million).

Investments increased by €4,577 million to €47,970 million (December 31, 2022: €43,393 million). The main reasons for this change were an increase of €3,722 million in bonds and other fixed-income securities to €44,453 million (December 31, 2022: €40,731 million) and an increase of €918 million in shares and other variable-yield securities to €2,880 million (December 31, 2022: €1,962 million).

Investments held by insurance companies grew by €10,020 million to €115,568 million (December 31, 2022: €105,548 million). This was due to a €5,995 million rise in fixed-income securities to €53,647 million (December 31, 2022: €47,652 million), a €4,134 million rise in assets related to unit-linked contracts to €20,563 million (December 31, 2022: €16,429 million), a €1,048 million rise in mortgage loans to €12,008 million (December 31, 2022: €10,960 million), a €180 million rise in other loans to €1,014 million (December 31, 2022: €834 million), and a €101 million rise in registered bonds to €5,531 million (December 31, 2022: €5,430 million). The overall increase was partly offset by, in particular, a €1,152 million decrease in variable-yield securities to €11,871 million (December 31, 2022: €13,023 million, a €162 million decrease in investment property to €3,866 million (December 31, 2022; €4,028 million), and a €119 million decrease in derivatives (positive fair values) to €159 million (December 31, 2022: €278 million).

Deposits from banks as at December 31, 2023 amounted to €174,580 million, which was €12,207 million lower than the figure reported as at December 31, 2022 of €186,787 million. Deposits from domestic banks went down by €13,345 million to €157,367 million (December 31, 2022: €170,712 million), whereas deposits from foreign banks rose by €1,139 million to €17,214 million (December 31, 2022: €16,075 million). As at December 31, 2023, the nominal value of the DZ BANK Group's participation in the ECB's TLTRO III program was €0.5 billion (December 31, 2022: €11.0 billion).

Deposits from customers grew by €212 million to €159,641 million (December 31, 2022: €159,429 million). Deposits from domestic customers grew by €6,609 million to €136,288 million (December 31, 2022: €129,679 million). By contrast, deposits from foreign customers shrank by €6,396 million to €23,354 million (December 31, 2022: €29,750 million).

At the end of the reporting year, the carrying amount of **debt certificates issued including bonds** was €103,768 million (December 31, 2022: €82,349 million), predominantly because of increased issues of mortgage Pfandbriefe and rises in capital market paper and commercial paper. Within the total figure, bonds issued came to €88,011 million (December 31, 2022: €68,271 million), while the portfolio of other debt certificates stood at €15,757 million (December 31, 2022: €14,077 million).

Financial liabilities held for trading went down by €4,803 million to €47,675 million (December 31, 2022: €52,478 million). Within this figure, derivatives (negative fair values) decreased by €9,510 million and short positions by €316 million. However, money market deposits went up by €4,202 million and bonds issued by €822 million.

Insurance contract liabilities increased by €6,823 million to €105,151 million (December 31, 2022: €98,328 million). This was predominantly due to the €6,293 million rise in the liability for remaining coverage to €93,033 million (December 31, 2022: €86,740 million).

As at December 31, 2023, **equity** had advanced by €3,444 million to €31,069 million (December 31, 2022: €27,625 million). The increase was mainly due to growth of €1,615 million in retained earnings to €15,977 million (December 31, 2022: €14,362 million) and to the €1,143 million rise in additional equity components to €3,293 million (December 31, 2022: €2,150 million) resulting from the issue of a tranche of additional Tier 1 notes by DZ BANK AG. The reserve from other comprehensive income amounted to minus €642 million (December 31, 2022: minus €1,171 million).

The **capital adequacy** of the DZ BANK financial conglomerate, the DZ BANK banking group, and the R+V Versicherung AG insurance group is described in the risk report within this group management report (chapter VII.7).

5 Financial position

Liquidity management for the entities in the DZ BANK Group is carried out by the Group Treasury division at DZ BANK and on a decentralized basis by the individual subsidiaries. The individual entities are provided with funding by DZ BANK (group funding) or the entities exchange cash among themselves via DZ BANK (group clearing). Liquidity is managed within DZ BANK centrally by the Group Treasury division in Frankfurt and by the associated treasury units in its international branches, although Frankfurt has primary responsibility.

In the context of liquidity management, the DZ BANK Group distinguishes between operational liquidity (liquidity in the maturity band of up to one year) and structural liquidity (liquidity in the maturity band of more than one year).

The DZ BANK Group has a diversified funding base for **operational liquidity**. A considerable portion is accounted for by money market activities resulting from the cash-pooling function with the local cooperative banks. This enables cooperative banks to invest available liquidity with DZ BANK or obtain liquidity from DZ BANK if they need it. This regularly results in a liquidity surplus, which provides one of the main bases for short-term funding in the unsecured money markets. Corporate customers and institutional clients are another important source of funding for covering operational liquidity requirements.

For funding purposes, the DZ BANK Group also issues money market products based on debt certificates under a standardized groupwide multi-issuer euro commercial paper program through its offices and branches in Frankfurt, New York, Hong Kong, London, and Luxembourg. In addition, a US CP head office program is used centrally by DZ BANK Frankfurt.

Key repo and securities lending activities, together with the collateral management process, are managed centrally in DZ BANK's Group Treasury division as a basis for secured money market financing activities. Funding on the interbank market is not strategically important to the DZ BANK Group.

The DZ BANK Group also has at its disposal liquid securities that form part of its counterbalancing capacity. These securities can be used as collateral in monetary policy funding transactions with central banks, or in connection with secured funding in private markets.

Structural liquidity activities are used to manage and satisfy the long-term funding requirements (more than one year) of DZ BANK and, in coordination with the group entities, those of the DZ BANK Group.

As at December 31, 2023, the nominal value of the DZ BANK Group's participation in the ECB's TLTRO III program was €0.5 billion (December 31, 2022: €11.0 billion).

Group Risk Controlling prepares an annual internal funding plan, which is based on the funding requirements calculated for the DZ BANK Group and DZ BANK for the next three years. The funding plan is calculated for a baseline scenario (matching the baseline scenario for strategic planning) and for at least one adverse scenario. The funding requirements are updated monthly and the adopted planning is backtested.

The risk report within this group management report includes disclosures on **liquidity adequacy** (chapter VII.6). The year-on-year changes in cash flows from operating activities, investing activities, and financing activities are shown in the **statement of cash flows** in the consolidated financial statements. Contractual cash inflows and cash outflows are set out in the **maturity analysis** in note 87 of the notes to the consolidated financial statements.

III Events after the balance sheet date

There were no events of particular importance after the end of the financial year.

IV Human resources report and sustainability

The non-financial report of the DZ BANK Group in accordance with section 340i in conjunction with section 315b of the German Commercial Code (HGB) is combined with the non-financial report of DZ BANK AG in accordance with section 340a in conjunction with section 289b HGB and integrated into the 2023 Sustainability Report.

The 2023 Sustainability Report is published in German at www.dzbank.de/berichte and in English at www.dzbank.com/reports.

V Outlook

1 Economic conditions

The outlook for the macroeconomic environment provides the basis for projections for 2024 regarding financial position and financial performance as well as expected liquidity and capital adequacy. Any adverse macroeconomic factors that present a material risk to the DZ BANK Group are addressed and examined in detail in chapter VII.4.2 of the risk report. Opportunities arising from favorable factors are presented in chapter VI.2.1 of the opportunity report.

1.1 Global economic trends

The energy crisis triggered by the Russia-Ukraine war is not over yet but has abated somewhat. This is reflected, for example, in noticeably lower energy prices (including electricity prices) and well-filled gas storage facilities. Interest rates have risen strongly and rapidly, resulting in more challenging investment conditions. One of the sectors most keenly affected by this is residential construction. At the same time, structural problems in China, for example in the real estate sector, are holding back the country's economic growth and, by extension, global trade. As inflation rates continue to fall, the economy of the eurozone is predicted to stage a recovery in 2024. From the second half of the year, this upturn should enjoy a tailwind from the first interest-rate cuts but is nonetheless expected to remain relatively weak in 2024.

Threats to global economic growth include the risk of fresh protectionist measures being imposed on trade between the US, China, and Europe. This is reflected in the debate about the Inflation Reduction Act in the US and the ever-growing list of sensitive raw materials for which Chinese export licenses are required. Geopolitical tensions, such as over the position of Taiwan, may also prompt a further escalation of trade disputes. This would adversely affect the global economy and hit the heavily export-dependent German economy particularly hard. Supply chain problems and renewed upswings in energy prices could prolong the phase of elevated inflation rates.

In many parts of the world, the dramatic rise in inflation had already reached its peak at the end of 2022. Consequently, inflation rates came down noticeably in 2023, but still remained well above the target levels of major central banks. For many products, it took a while for the impact of the extreme energy price spike during the energy squeeze to filter through the various production stages to the retail prices charged to end customers. In addition, healthy wage increases – designed to offset the inflation-linked erosion of purchasing power – prompted businesses in the service sector and other industries to raise their prices, which consequently slowed down the fall in inflation rates. In 2024, inflation should generally continue to come down but will likely still remain above central bank targets.

1.2 Trends in the USA

The US economy remained in surprisingly robust shape over the course of 2023. Quarter-on-quarter GDP growth was particularly pronounced in the third quarter of 2023. The fact that the US economy continued to perform well in spite of rising interest rates is likely attributable to a significant upturn in employment, the favorable long-term mortgage finance deals that many private households had secured when interest rates were still low, and – last but not least – government spending measures. Thanks to these sources of support, a recession now looks avoidable, although it remains a risk.

For 2024, DZ BANK predicts a marked slowdown in economic growth. Strongly elevated interest rates can be expected to put a damper on investment and consumer spending, thereby holding back economic growth. Against this backdrop, gross domestic product will likely grow by only 1.5 percent. US politics also remain a risk factor. As the government's majority in the House of Representatives is wafer-thin, the budget negotiation process is proving long and arduous. A temporary government shutdown cannot be ruled out for 2024. One driver of the discord in the US political arena may well be the upcoming presidential and congressional elections in November 2024. This environment could heighten concerns about a potential fiscal policy crisis. The sustainability of US government debt levels may be called into question. And further interest-rate hikes in the US would certainly also take their toll on other economies.

The trajectory of inflation is a further risk factor. Inflation is trending downward, but high wage demands and efforts to boost production in the US make it likely that heightened inflationary pressures will persist for some time yet. DZ BANK thus expects inflation to remain at clearly elevated levels beyond 2023. On this basis, it projects an average inflation rate of 3.0 percent for the US in 2024.

1.3 Trends in the eurozone

Overall, the eurozone economy performed sluggishly in 2023. Consumer spending was weakened by persistently high inflation, while higher interest rates continued to act as a drag on investment over the course of the year. In addition, exports faced increasingly strong headwinds in connection with weak global economic growth. The eurozone recorded economic growth of 0.5 percent in 2023.

Over the course of 2024, the bloc should gradually emerge from its economic weak patch. Upward pressures on consumer prices should continue to ease, which – paired with continuing wage growth – should improve the spending headroom of private households. The fact that interest rates have reached their peak and may start to be cut again in the second half of the year should reduce adverse pressures on investment. However, there is a risk of interest rates remaining high or even being raised further. This could also have unfavorable fiscal policy implications, as highly indebted countries in the eurozone are vulnerable to the pressures arising from a growing interest burden.

Provided the global economy starts to gather pace in the second half of 2024, even if only moderately, European exports should enjoy a small boost. DZ BANK anticipates that the eurozone economy will grow at a rate of 0.8 percent in 2024 as a whole.

The normalization of previously overblown gas and electricity prices also started to push down consumer prices, a trend that still remains intact. This led to a reduction in the inflation rate to an average of 5.4 percent in 2023. In 2024, inflation should continue to slow, albeit only very gradually. Government measures implemented to mitigate soaring energy prices are set to expire in a number of eurozone countries. In addition, upward pressure on prices in the service sector due to wage increases remains strong and will abate only slowly. DZ BANK predicts an inflation rate of 3.0 percent for the eurozone in 2024.

1.4 Trends in Germany

Amid a perfect storm of adverse factors ranging from high energy prices and interest-rate hikes to weak global economic growth, Germany's economy has slid into recession. Although survey-based leading indicators seemed to be showing small signs of improvement in the autumn, they closed 2023 at very low levels. Uncertainty also stemmed from the debate about budgetary funding in the wake of the German Federal Constitutional Court's ruling on the debt brake. There is no immediate prospect of an upturn. In 2023 as a whole, economic output shrank by 0.3 percent.

The outlook for the coming year is similarly bleak. Energy prices are still higher than before Russia's war of aggression against Ukraine, meaning that Germany's industrial sector remains burdened with a competitive disadvantage. The health of the global economy also remains precarious and exports are consequently unlikely to bounce back to the strong levels seen before the pandemic. In addition, bureaucratic barriers to investment will take time to dismantle. Nonetheless, the economy should be able to stage a modest recovery in 2024. The marked easing of inflationary pressures is a positive signal. DZ BANK expects inflation to gradually fall in 2024. It anticipates that consumer prices will rise by 3.2 percent in 2024, compared with an average inflation rate for 2023 of 6.0 percent.

Demand in the real estate market has been depressed significantly by the sharp rise in interest rates. Compared with 2021, new business in the consumer home finance segment has fallen by almost half while investment in commercial real estate and residential property portfolios has diminished by nearly two-thirds. Property prices have been falling across all market segments since mid-2022. In 2024, the year-on-year reduction in prices should slow to between 2 and 4 percent for residential real estate and between 5 and 7 percent for commercial real estate. The combination of high interest rates and sharp increases in construction costs meant that many construction projects were put on hold as building of rented housing has become unprofitable. There were many insolvencies among project developers in 2023. The housing market is likely to see much fewer completions in 2024, in spite of substantial demand for housing. The extremely sparse supply of homes is causing a marked rise in rental prices. Consequently, the housing market environment is set to be even more fraught in 2024.

Conditions for investment remain challenging. The construction sector is struggling with high interest rates and increased construction costs. However, slowing inflation and robust wage growth are easing the pressure on consumers' purses. In addition, the ECB looks likely to start cutting interest rates again from the second half of the year. Headwinds for exporters should diminish as the international trade environment begins to improve in the second half of 2024. All in all, DZ BANK expects the German economy to grow by 0.5 percent in 2024.

1.5 Trends in the financial sector

In 2023, major central banks around the world maintained the new policy direction that they had embarked on in the previous year. The US Fed had already discontinued its bond-buying program and had begun to trim its balance sheet in 2022. The ECB followed suit in 2023, gradually reducing its holdings under the asset purchase program and terminating the pandemic emergency purchase program (PEPP). Repayments under the PEPP will continue to be reinvested until the end of 2024 but can be allocated in a flexible manner. This cautious approach from the ECB, which has been designed with flexibility in mind and is complemented by the transmission protection instrument (TPI), has helped to prevent the excessive widening of spreads on the bonds of individual eurozone countries and thus to counter potential fragmentation risk. Current spread levels also reflect the somewhat muted economic environment. As economic conditions brighten over the course of 2024, spreads could narrow.

The Fed raised the upper end of the federal funds rate range to 5.5 percent in 2023. This appears to be the highest that it will go, and interest-rate cuts are likely in 2024. Moreover, the ECB increased its main refinancing rate to 4.5 percent in 2023. With inflation coming down faster than originally anticipated, the first reductions in key eurozone interest rates are predicted for the second half of 2024. Consequently, interest-related business probably reached its maximum upside potential in 2023. Although the developments described above may stimulate the real estate market, the growth of this market will be held back by interest rates remaining at a high level, the general economic situation, and high investment costs.

Despite the headwinds created by geopolitical turmoil and the related trade disputes on the global economic stage, DZ BANK expects the German economy to grow slightly (see also chapter 1.4 of the outlook). Given that the uncertainty factors – which are relevant to the major economic areas (United States, Europe, and China) – are occurring simultaneously, it is impossible to rule out unexpected adverse effects on companies and households, which in turn would have negative implications for the financial position and financial performance of the financial sector in 2024.

The year ahead is therefore likely to be challenging for the financial sector. Regardless of the aforementioned macroeconomic conditions, the financial sector has also faced considerable pressures in terms of both adjustment and costs in recent years. These arise from structural changes and regulatory requirements and could be intensified by upward pressure on prices and the potential threat of a wage/price spiral. This environment is presenting the financial sector with the challenge of scrutinizing its existing business models, adapting them as required, and substantially improving its efficiency by digitalizing business processes.

The agenda of regulatory reforms initiated in response to the financial crisis has a range of objectives, including making the financial sector more resilient in the event of a crisis – mainly through improved capital and liquidity adequacy – and ensuring that the risks arising from the business activities in the financial industry are not borne by the public sector. As a result, the financial industry has progressively reduced its leverage and substantially bolstered its risk-bearing capacity by improving liquidity and capital adequacy. The planned implementation of EU banking regulations must also be seen in this light.

The issue that is likely to continue shaping activities in the financial industry in the long term is the implementation of the multifaceted ESG standards and their implications for the business models used in the sector. At present, the primary challenge faced by the financial sector is to implement the relevant requirements at an operational level throughout the value chain, which includes business management, risk management, and the internal and external reporting systems. The consideration of ESG aspects in the financial and capital markets is, on the one hand, opening up new market opportunities for the financial sector. On the other, events in the various ESG categories should also be seen as risks and managed accordingly. Information on the handling of ESG risks can be found in the risk report (chapter VII.5).

2 Financial position and financial performance

In 2024, the DZ BANK Group will continue to pursue its strategic objectives in the context of its role within the Cooperative Financial Network. In an environment that remains challenging in terms of both market and competition, this means, for example, rigorously exploiting potential business in collaboration with the cooperative banks, while at the same time maintaining the planned implementation of various initiatives focused on the digitalization and sustainability of the DZ BANK Group along the entire value chain.

The forecasts below are based on the outcome of the DZ BANK Group's annual planning process. Further information on the planning process can be found under 'DZ BANK Group fundamentals' (chapter I.2.4). Potential variances during 2024 from the underlying planning scenario, in the form of opportunities and risks, may have an influence on financial position and financial performance. These uncertainties are monitored continuously and factored into the DZ BANK Group's planning, reporting system, and management.

According to the planning for 2024, **total assets** will hold steady compared with the figure as at the end of 2023.

In light of the muted economic outlook and expected change in interest-rate levels, **net interest income** (including net income from long-term equity investments) is predicted to fall substantially in 2024 compared with the high level recorded in 2023. The figure for the reporting year received a significant boost not only from the good level of income from the operating business but also from accounting-related effects that had a positive impact on net interest income but a countervailing impact on gains and losses on trading activities.

Although **net fee and commission income** is projected to diminish slightly year on year in 2024 owing to the anticipated uncertain capital market environment, it will still make a hefty contribution to the earnings of the DZ BANK Group.

Gains and losses on trading activities will amount to a substantial net gain in 2024, which represents a significant improvement compared with 2023. This can be explained by the accounting-related effects mentioned above in connection with net interest income, which resulted in a net loss on trading activities in the reporting year.

Gains and losses on investments are anticipated to improve noticeably to a net gain in 2024, partly because the figure for the reporting year included losses on the sale of securities and impairment losses on a joint venture (see chapters II 3.2.4 'UMH' and 3.2.5 'DZ BANK – CICB' of the business report).

Other gains and losses on valuation of financial instruments will deteriorate markedly in 2024, returning to a normal level. This will largely be driven by the anticipated slight widening of credit spreads in public-sector finance.

Net income from insurance business is predicted to rise sharply in 2024. This projection is based on the expectation of a healthy operating performance in the insurance business.

Expenses for **loss allowances** are expected to be much higher in 2024 in view of the targeted volume of new business, the likely reduction in reversals of loss allowances, and the decline in income from loans and advances previously impaired.

Administrative expenses are expected to rise only marginally in 2024 compared with 2023, primarily because higher general and administrative expenses and staff expenses will be largely offset by savings in connection with the bank levy.

The DZ BANK Group's **other net operating income** will increase in 2024, returning to a normal level. This is mainly because the 2023 figure was affected by non-recurring items (see chapters II 3.2.4 'UMH' and 3.2.7 'DZ PRIVATBANK' of the business report).

In spite of the challenging geopolitical conditions, accompanied with further interest-rate hikes, the DZ BANK Group was able to generate significantly higher profit before taxes in the reporting year than originally projected. Based on current assessments, **profit before taxes** in 2024 is predicted to be within the long-term target range – which has been raised to between €2 billion and €2.5 billion – as the macroeconomic environment is expected to remain challenging.

The **cost/income ratio** for the DZ BANK Group is likely to be a little higher in 2024 as a result of the expected small year-on-year decrease in income and simultaneous slight rise in administrative expenses.

Regulatory RORAC is predicted to fall sharply in 2024 owing to the expected decrease in income, the rising regulatory base rate of return used in the calculation, and R+V's growing solvency capital requirement.

3 Liquidity and capital adequacy

Based on the position at the end of the reporting year and the funding measures planned for 2024, the DZ BANK Group predicts that it will be able to continue maintaining an appropriate level of economic and regulatory **liquidity adequacy** in 2024.

Further information on liquidity adequacy can be found in the risk report (chapter VII.6).

As matters currently stand, the DZ BANK Group's **capital adequacy** will continue to be assured for 2024 from both economic and regulatory perspectives; that is to say, it will continue to have at its disposal the available internal capital and eligible own funds necessary to cover the risks associated with the finance business and other risks arising from the group's business operations.

Over the last few years, the DZ BANK Group has greatly strengthened its capital base from its own resources (through the retention of profits) and through corporate action. In 2024, a high priority will once again be given to strengthening the capital base in order to ensure stable capital ratios.

For 2024, DZ BANK anticipates that the DZ BANK Group's **common equity Tier 1 capital ratio** will hold steady at above 15 percent.

Further information on capital adequacy can be found in the risk report (chapter VII.7).

4 Operating segments in detail

4.1 BSH

For years, housing starts enjoyed a healthy tailwind from exceptionally low interest rates on residential real estate loans and substantial excess demand. However, this dynamic collapsed under the combined pressure of the interest-rate policy turnaround, rising prices, supply bottlenecks, and high energy costs. Around the end of 2023 and the start of 2024, some of the regressive factors that had dominated the market environment in the recent past, such as the COVID-19 pandemic, high inflation, and supply chain disruption, began to fade into the background. But the significantly higher level of interest rates and the increase in costs look set to remain a drag on residential construction in 2024. The Zentralverband des Deutschen Baugewerbes e. V. (ZDB) [German Construction Confederation] is therefore forecasting the completion of just 235,000 or so homes in 2024, which equates to a year-on-year decline of 4.1 percent. This forecast is subject to significant uncertainty though. Geopolitical challenges could cause inflation and interest rates to rise again, which would put additional adverse pressure on loan-financed housing starts.

By contrast, the market for renovation work and energy efficiency measures will continue to act as an anchor of stability in 2024 amid the prevailing construction crisis. The roadmaps set out for achieving official climate targets will require buildings to be made compliant with higher energy efficiency standards going forward. The European Energy Performance of Buildings Directive (EPBD) envisages a reduction in primary energy consumption of 16 percent by 2030 and 22 percent by 2035. Measures to improve the energy performance of the least efficient residential buildings are expected to deliver 55 percent of the total planned reduction. From 2024, Riester savings products will be eligible as a means of funding for building renovation projects.

The weak economic environment will likely also be reflected in lower demand for labor from businesses. However, companies will be keen to retain skilled staff, meaning that unemployment is expected to rise in 2024 only to the extent that the overall labor force is set to grow. Consequently, a significant increase in payment difficulties within BSH’s existing building loans portfolio is not anticipated in the forecast period.

The core home finance business is expected to pick up again slightly in 2024 following the slump induced by the crisis in 2023. Statutory requirements aimed at climate change mitigation are becoming noticeably tougher and having a positive impact. New business in the home savings segment, the other area of core business, declined in 2023 but remained at a good level and is expected to trend sideways in 2024 as macroeconomic conditions are likely to remain challenging.

The subsidiary Fundamenta-Lakáskassza Lakástakarékpénztár Zrt. (FLK), Budapest, is scheduled to be removed from the scope of consolidation in the first half of 2024 following its sale. At group level, FLK was treated as a disposal group not qualifying as a discontinued operation in accordance with IFRS 5 in the year under review. Consequently, FLK is not included in the analysis below.

Taking these various factors into account, BSH anticipates a higher, albeit still low, **profit before taxes** in 2024 that will comprise the following.

The sharp rise in interest rates will have a growing positive impact on own-account investing and building loan business at BSH in 2024. Whereas funding measures relating to regulatory requirements had a significant negative impact on interest expense in the reporting year due to soaring interest rates, no substantial increase is expected in this regard in 2024. Based on these expectations, **net interest income** is forecast to rise markedly in 2024.

Net fee and commission income is likely to decline sharply in 2024 in percentage terms, primarily due to a contraction in new home savings business.

With regard to loss allowances, BSH will benefit from the expected solidity of the labor market, despite volatile economic conditions in Germany. Interest rates peaked in 2023, as anticipated, and the trajectory of inflation is looking moderate for 2024. These circumstances should have a stabilizing effect. Against this backdrop, **loss allowances** should remain virtually unchanged, even though the loan portfolio has grown substantially in recent years.

In 2024, **administrative expenses** are projected to be a little lower than in 2023, partly as a result of strategic and operational adjustments to the management of costs at BSH.

Based on current assessments, the **cost/income ratio** will fall slightly.

Regulatory RORAC is expected to record a mild increase.

4.2 R+V

Given the macroeconomic risk factors and geopolitical tensions, 2024 will be another very challenging year. Nonetheless, R+V – the composite insurer in the Cooperative Financial Network – is planning to continue on its trajectory of profitable growth in 2024.

Overall, R+V anticipates a small year-on-year increase in the insurance segment's **profit before taxes** in 2024. Insurance revenue is forecast to decline slightly. The premiums included in insurance revenue, which comprise the premiums actually received, will hold steady compared with the reporting year.

Gains and losses on investments held by insurance companies are expected to deteriorate markedly year on year based on the capital market parameters forecast for 2024. Insurance finance income or expenses will also deteriorate sharply.

The **non-life insurance** division is expected to continue to grow as planned in 2024. A significant increase in insurance revenue is predicted for 2024. Premiums received should show significant growth too. The combined ratio (net) is projected to improve, falling to just below the level of the reporting year.

Insurance revenue in the **life and health insurance** division is expected to be a little lower in 2024 than in 2023. For reasons of comparability, this does not take account of the experience adjustments for 2023. These adjustments are defined in Appendix A to IFRS 17. Premiums received are expected to fall sharply in 2024. The contractual service margin will be on a par with the 2023 level in 2024. The amortization of the contractual service margin will increase substantially.

In the **inward reinsurance** division, the improvement in prices for reinsurance cover is expected to continue in 2024. This should result in significant growth of insurance revenue and a jump in the volume of premiums received, which are included in this revenue. The forecast shows a sharp rise in the combined ratio (net).

Regulatory RORAC will see a substantial decline in 2024 owing to the higher base rate of return used in the calculation.

4.3 TeamBank

The overall economic environment is expected to improve slightly in 2024 and inflation should continue to slow. Moreover, the labor market remains stable and wages have recently risen – sharply in some cases. All of these factors may boost consumers' purchasing power and willingness to spend. As a result, both the inclination to make purchases and the inclination to borrow may strengthen.

In collaboration with the cooperative banks, TeamBank is aiming in 2024 to generate profitable, sustainable growth at a rate that is higher than that of the market. This may result in a noticeable increase in **net interest income**.

Net fee and commission income is predicted to fall substantially year on year, mainly because of the expected increase in bonus payments to partner banks in line with the higher level of new business.

The reversals in 2023, which were mainly attributable to changed expectations resulting from new insights into the impact of insolvency law reforms, are likely to give way to a significant rise in the **expense for loss allowances** in 2024, especially in view of the strong portfolio growth being targeted.

Administrative expenses are expected to remain steady in 2024.

In view of the changes described above, TeamBank forecasts a significant increase in **profit before taxes**.

The **cost/income ratio** for 2024 is predicted to improve substantially year on year.

There is likely to be a marked fall in **regulatory RORAC** in 2024, primarily because of the strong growth in the base rate of return used in the calculation.

4.4 UMH

The capital market environment has improved in recent weeks. Inflation looks set to continue to slow in 2024, albeit only very gradually. Although geopolitical risks remain elevated, conditions in the capital markets are improving on balance when considering key factors such as growth, inflation, monetary policy, and financial market stability. Consequently, 2024 is shaping up to be both a challenging and a promising year for the capital markets.

In this environment, UMH plans to continue on its profitable growth path in 2024 and to boost its success relative to its competitors. It intends to do so by becoming more agile and innovative. Progress is also being made with the digitalization of offerings and processes and the use of artificial intelligence. At the same time, efforts are being made to improve effectiveness, for example through the creation of the FitForFuture program. Under this program, measures have been developed to wind down activities that are not delivering much benefit and instead focus resources on more promising activities. The first measures are expected to contribute to making UMH more robust in 2024.

UMH is aiming for a significantly higher average level of assets under management in 2024. New business is expected to be down year on year and overall performance to be just into positive territory in 2024.

Net fee and commission income for 2024 is projected to be up slightly compared with the year under review.

A significant deterioration in **net financial income/net finance costs** – comprising net interest income, gains and losses on investments, and other gains and losses on valuation of financial instruments – is likely in 2024, largely because of an anticipated sharp negative change in the effect from the valuation of guarantee commitments for investment products and from a much lower contribution from the investment fund units held as part of own-account investing activities.

Administrative expenses are projected to rise slightly in 2024. UMH intends to keep staff expenses at the same level as in 2023 but, based on current assessments, general and administrative expenses will rise markedly, largely because of higher expenses for consultancy. Depreciation and amortization charges are predicted to be on a par with 2023.

A sharp increase in **other net operating income** is expected. This is mainly because non-recurring items, such as non-recurring write-offs or restructuring expenses, are no longer included in the planning.

Based on the factors described above, **profit before taxes** in 2024 is projected to be a little lower than in 2023.

From the current perspective, a slight increase in the **cost/income ratio** and a significant fall in **regulatory RORAC** are expected.

4.5 DZ BANK – CICB
Energy prices are coming down again compared with 2023, allowing inflation in the eurozone to slow and easing upward pressure on prices. This will bring about a slight improvement in economic growth. Against this backdrop, the ECB is expected to start to gradually lower its key interest rates in late 2024 and share prices are projected to edge up.

Net interest income (excluding income from long-term equity investments) for 2024 is predicted to be below the 2023 figure. In the reporting year, net interest income was boosted by volume growth in the Corporate Banking business line and increases in income from the money market and capital markets business. The lending volume in the Corporate Banking business line is predicted to remain level with 2023. In the Structured Finance division, the contribution margin is expected to remain stable in spite of an even more competitive market environment and higher funding costs due to the expansion of the business in key product fields. Net interest income in the money market and capital markets business will likely fall sharply due to anticipated interest-rate cuts by the ECB.

Net fee and commission income is projected to not quite match the high level of 2023 and will probably decline significantly in 2024. This is largely the result of slightly more conservative estimates for service fees in the individual operating units within DZ BANK – CICB in response to the general market uncertainty. The Corporate Banking business line's net fee and commission income for 2024 is expected to be slightly below the strong 2023 figure. In the Transaction Banking business line, net fee and commission income is likely to stabilize in 2024 due to the strong positioning of this business in the market resulting from the sustained trend toward the use of credit cards and additional mobile payment options, driven mainly by advancing digitalization and connectivity. Net fee and commission income in the Capital Markets business line is projected to fall. One of the sources of such income is the underwriting business, in which brokerage fees are collected from retail and institutional customers. The approach for generating operating fee and commission income remains focused on strengthening existing customer relationships, signing up new Depot-B-customers, and expanding the product range.

Gains and losses on trading activities are generated from margins and trading volume in customer business involving investment and risk management products and from the related customer-initiated trading contributions. In the operating business in the Capital Markets business line, a key income driver in 2024 is likely to be the further exploitation of capital-markets-related cross-selling potential in corporate banking. Moreover, measures to intensify collaboration with the cooperative banks in the Depot-B-customer business will be taken to leverage additional potential in the securities business. Trading activity is anticipated to remain at a high level in 2024, with the market as a whole subject to significant volatility. Consequently, and due to pull-to-par effects on own issues, gains and losses on trading activities will probably deteriorate sharply in 2024.

Loss allowances for 2023 included not only reversals but also a significant volume of income from recoveries on loans and advances previously impaired. This income is not expected to be at the same level in 2024, so there is likely to be a much greater need for net additions to **loss allowances** in 2024.

Administrative expenses are projected to rise slightly in 2024.

In view of these circumstances, **profit before taxes** in the DZ BANK – CICB operating segment is expected to fall sharply in 2024.

Current assessments show that the **cost/income ratio** will go up significantly in 2024 as a result of the pronounced decline in financial performance that is forecast relative to 2023 and a slight rise in administrative expenses.

As things stand, **regulatory RORAC** will probably decrease markedly in 2024 – despite slightly lower capital requirements – owing to the reduction in profit before taxes.

4.6 DZ HYP

Further interest-rate increases by the central banks in 2023 and soaring prices for construction products and services have put a damper on real estate investment. However, the fall in purchase prices began to slow in the fourth quarter of 2023 and the ECB is expected to cut interest rates. These and other factors suggest that the real estate market will start to stabilize in 2024, which will result in a higher volume of transactions. Moreover, real estate is maintaining its appeal as an investment product.

Net interest income in 2024 is projected to be on a par with the 2023 figure. DZ HYP anticipates that business activities will remain stable, based on reasonable lending margins combined with a marked increase in the volume of new real estate finance business compared with 2023.

Current assessments show that credit spreads in public-sector finance are likely to widen slightly in 2024. Consequently, **other gains and losses on valuation of financial instruments** are expected to amount to a small net loss in 2024.

Loss allowances in 2024 are projected to be on a par with 2023.

Greater regulatory requirements and the digital transformation of DZ HYP are having a negative impact on **administrative expenses**, with the result that this figure is expected to be up noticeably on the corresponding 2023 figure.

Based on a stable operating performance, but particularly because of the deterioration in **other gains and losses on valuation of financial instruments** and rising administrative expenses, **profit before taxes** in 2024 is predicted to be well below the 2023 figure.

Accordingly, the **cost/income ratio** is expected to rise significantly.

Regulatory RORAC is likely to decline markedly due to the fall in profit before taxes forecast for 2024.

4.7 DZ PRIVATBANK

DZ PRIVATBANK's operating business is expected to perform well thanks to the projected rise in the volume-related key figures in its various areas of business.

Net interest income will probably decline considerably in 2024 as certain items of non-recurring income that had a positive effect in 2023 will not be repeated.

Net fee and commission income is likely to rise slightly in 2024. The assets under management in private banking are also projected to rise because of planned increases in inflow rates. The main value driver is fund volume, and the volume of funds from Union Asset Management Holding AG that are held by DZ PRIVATBANK is expected to grow markedly.

Gains and losses on trading activities are forecast to improve significantly in 2024 because customer-driven transaction figures are likely to be higher.

DZ PRIVATBANK's **administrative expenses** are projected to hold steady in 2024.

As the 2023 figure included non-recurring items, DZ PRIVATBANK's other **net operating income** will increase in 2024, returning to a normal level.

Based on current forecasts, a modest increase in **profit before taxes** is expected for 2024 despite challenging market conditions.

The **cost/income ratio** for 2024 is likely to be on a par with the reporting year, while **regulatory RORAC** will probably be down slightly due to the higher base rate of return used in the calculation.

4.8 VR Smart Finanz

As the economic environment begins to normalize and the German economy gradually returns to growth, VR Smart Finanz intends to significantly expand its finance business in 2024, as it did in 2023. Demand for object finance is expected to continue to increase in view of the rise in asset prices and a persistently high need for investment, particularly in energy efficiency measures and digitalization.

VR Smart Finanz intends to respond to the ever-fiercer competition by stepping up its collaboration with the cooperative banks and other sales partners, such as digital financing platform providers. Sustainability-related activities will also be intensified. Further sales potential can be unlocked by expanding omnichannel capabilities and gradually integrating solutions and digital services into the Cooperative Financial Network's omnichannel platform. VR Smart Finanz also aims to expand data-driven analysis and the digital market reach with a view to further strengthening the marketing of the cooperative banks in the target customer segment.

To ensure a state-of-the-art IT infrastructure, VR Smart Finanz will continue to drive forward the implementation of SAP S/4HANA. Contract processing will be further automated in order to improve efficiency and thus help to stabilize costs.

Risks arising from the emerging renewed upturn in insolvencies are actively managed using a proactive, IT-supported risk management system. Measures to prevent fraud are also being expanded to counter the increasing risks arising in connection with digital environments.

In the context of SME customers' growing need for liquidity and finance, the planned initiatives to generate new business growth and accelerate collaboration with the cooperative banks and other partners are likely to result in a strong increase in **net interest income**.

A sharp rise in **loss allowances** is also projected for 2024, reflecting the planned growth in the volume of existing and new business.

On the basis of a jump in administrative expenses compared with 2023 and a significant increase in income, there will be a noticeable improvement in the **cost/income ratio**.

The developments described above should mean a substantial improvement in **profit before taxes** in 2024, accompanied by slightly higher **regulatory RORAC** resulting from a sharply rising base rate of return used in the calculation.

4.9 DZ BANK – holding function

Net interest income is predicted to fall markedly in 2024. This forecast is mainly due to changes in average interest rates and in the balance of expenses for the funding of long-term equity investment carrying amounts and income from the investment of capital.

Administrative expenses are projected to decrease substantially in 2024. This can be explained, for the most part, by an expected fall in protection levies (bank levy).

A significantly smaller **loss before taxes** is forecast for 2024.

VI DZ BANK Group and DZ BANK opportunity report

The details relating to DZ BANK are included in the opportunity report for the DZ BANK Group. A separate opportunity report is not prepared for DZ BANK. Unless stated otherwise, the disclosures relating to the DZ BANK Group also apply to DZ BANK.

1 Management of opportunities

The DZ BANK Group defines **opportunities** as situations in which potential income can be unlocked and/or potential cost savings can be achieved.

The management of opportunities is integrated into the **annual strategic planning process**. The potential for returns is identified and analyzed on the basis of various macroeconomic scenarios, trends, and changes in the market environment, and then included in strategic financial planning. Details about the strategic planning process are presented in chapter I.2.4 in 'DZ BANK Group fundamentals' in this (group) management report.

Opportunity management is an integral component of **governance** and is therefore taken into account in the general management approach, in the management of subsidiaries via appointments to key posts, and in the DZ BANK Group's committees. Details about the governance of the DZ BANK Group can be found in chapter I.2.2 in 'DZ BANK Group fundamentals' in the 2023 (group) management report.

2 Potential opportunities

2.1 Potential opportunities from macroeconomic developments

The statements made in the outlook on the expected business performance of the DZ BANK Group in the year ahead are based on the macroeconomic scenario that DZ BANK considers to be the most likely.

If economic conditions in the relevant markets are better than expected, opportunities may arise for the DZ BANK Group. In a positive scenario such as this, the easing of the trade disputes between China and the US would avoid further barriers to trade affecting, in particular, the EU and Germany, the latter being heavily dependent on exports. The global economic downturn, especially in China, would be milder and shorter than expected and would not materialize in the US, which would lessen the risk of a global recession. Political stability and continuity in the US and a rapid end to the war between Israel and Hamas could also have a positive impact on the situation.

In spite of populist governments and high levels of government debt in the EU, stability in the eurozone – forged through European economic policy, joint solutions, and a gradual fall in interest rates – would drive growth in the European economy. Effective use of transmission protection instruments of the European Central Bank (ECB) would also mean that countries in the eurozone could continue to obtain finance easily. This would have a positive knock-on effect on the financial and capital markets. Furthermore, a gradual fall in interest rates would lessen the impact of factors that drive inflation, such as wage/price spirals. In the US, too, a downward movement in interest rates would have a positive effect on the country's budget and government debt. If interest rates remained high or even edged up further, however, net interest income and the net interest margin in the Bank sector and life insurance business in the Insurance sector would be positively impacted.

Consumer confidence could increase and improve if the German government's ongoing budget crisis can be remedied in the near term. A decline in energy and commodity prices – potentially supported by a foreseeable end to the war in Ukraine – could help to boost confidence further. In combination with a fall in the rate of inflation toward the level targeted by the ECB, this would have a positive impact on the German economy. Moreover, an absence of further price corrections in the real estate markets coupled with declining interest rates would benefit the DZ BANK Group's financial performance and provide stability, above all for the commercial real estate market.

All of the positive factors outlined above are highly unlikely to materialize together. From the DZ BANK Group's perspective, however, even the occurrence of individual factors would create an environment for the financial sector that would probably benefit the individual business models and the financial position and financial performance of the DZ BANK Group as a whole. Stable conditions in the financial and capital markets would have a positive impact on the net interest income and net fee and commission income generated from customer business and on net income from insurance business. In particular, an assumed economic recovery could potentially limit the net expense recognized for loss allowances and thereby help to increase the Group's net profit.

2.2 Potential opportunities from regulatory initiatives

Regulatory changes and initiatives may provide banks and insurance companies with the opportunity to offer products or services that are better tailored to customers' needs. For example, sustainability aspects are becoming increasingly important for many customers when making purchases and investments. Initiatives at European level, such as sustainable finance strategies and proposals for an EU green bond standard, underline the significance of sustainability aspects for the financial sector. Further development of these initiatives may lead to customers and the markets participating in sustainable finance initiatives on a greater scale, which would provide banks and insurance companies with the opportunity to strengthen the unique selling points of their products and services and to unlock potential growth in sustainable finance. This would have a positive impact on, for example, net fee and commission income and net interest income.

2.3 Potential opportunities from strategic initiatives

The strategic focus in the DZ BANK Group (see chapter I.1 in 'DZ BANK Group fundamentals' in the 2023 (group) management report) follows the guiding principle of fulfilling the role of a **network-oriented central institution and financial services group**. Business activities are centered on the local cooperative banks and their customers. The objective of this strategic approach is to consolidate the positioning of the Cooperative Financial Network as one of the leading financial services providers in Germany on a long-term basis. The partnership between the cooperative banks and the entities in the DZ BANK Group is built on the principles of subsidiarity, decentralization, and regional market responsibility.

The DZ BANK Group develops and implements **strategic initiatives and programs** at three levels:

Firstly, the entities in the DZ BANK Group work on strategic projects and initiatives in collaboration with the cooperative banks and Atruvia, with the BVR taking a leading role. The strategy agenda entitled 'Shaping the future cooperatively' provides a framework within which the entities of the Cooperative Financial Network are implementing the initiatives in the strategic KundenFokus (customer focus) project with the aim of establishing an omnichannel model to strengthen their competitiveness.

Secondly, the entities in the DZ BANK Group have jointly identified key areas of collaboration (such as operating models and sustainability) that offer potential to reinforce their future viability and profitability. The aim is to continue to develop and take action in these areas of collaboration over the coming years.

Thirdly, each individual entity in the DZ BANK Group pursues its own strategic initiatives. One example is the 'Verbund First 4.0' strategic program at DZ BANK, which is designed to ensure the organization's resilience for the future. The program is aimed at improvements in three key areas: market presence (network-focused, customer-oriented, and digital), control and production processes (efficient, effective, and focused), and corporate culture (performance-driven and integrative). The 'Verbund First 4.0' strategic program is updated continually in line with requirements. This transformation is being driven predominantly by key topics such as sustainability, digitalization, and employer branding.

BSH describes its long-term objective through its vision of being the leading product and solutions provider in the homes and housebuilding cooperative ecosystem. It intends to remain the market leader in the home savings market and, together with the cooperative banks, become the no. 1 in the home finance market. In addition, it is making inroads into new areas of growth for homes and housebuilding by maintaining a firm focus on customers and facilitating close collaboration between the cooperative banks and BSH's field staff on marketing. BSH is a center of excellence (provider of products and solutions) for consumer home finance, supporting the cooperative banks and playing an important part in strengthening the Cooperative Financial Network's market position. The evolution of BSH's role into that of a solutions provider for its bank partners and its integration into the homes and housebuilding cooperative ecosystem address the demand for end-to-end solutions and the development of new business models centered around customers' basic needs alongside financial products and extending the value chain.

DZ HYP is forging ahead with digitalization in many areas of its business. In consumer home finance, it is further expanding its role as a decentralized product supplier for the banks in the Cooperative Financial Network. Competitive products, rapid processes, and a risk-adjusted pricing model give banks scope to generate income through fees and commissions and through cross-selling options. The integration of Atruvia's omnichannel platform will be a central focus in 2024, enabling DZ HYP to support local cooperative banks with best-in-class products and services on this platform that they can use to advise customers on consumer home finance. The main aspects of DZ HYP's FK Digital project in its corporate customer business are deploying data optimally within processes, improving interfaces, and unlocking the associated potential for greater efficiency while, at the same time, catering to the current and future requirements of market players and supervisory authorities alike. The initial implementation phase of FK Digital began in July 2023 and is expected to be completed in spring 2025. This should also help to further optimize the bank's streamlined, profitable approach incorporating intensive customer relationship management. The bank has also drawn up a strategy for implementing the DZ HYP cloud infrastructure. In 2024, it plans to finish establishing the fundamental cloud infrastructure and migrate the majority of the IT landscape to the future operating model. The real estate sector has the potential to play a key role in combating climate change. DZ HYP sees its own role as supporting the green transformation of the economy in order to channel cash flows toward more sustainable business, for example by financing more energy-efficient real estate.

R+V's vision is to be the cooperative center of excellence for insurance, healthcare cover, and retirement pensions, working closely with its sales partners. Making customers happy is the cornerstone of future success under its strategic program, WIR@R+V. The program is designed to boost R+V's earnings power by putting a greater emphasis on profitability so that it can continue to make a significant contribution to the success of business in the Cooperative Financial Network. R+V also remains firmly focused on its growth strategy of strengthening areas of importance for the future, such as healthcare and long-term nursing care, membership, sustainability, and the omnichannel approach. By delivering a consistently robust business performance, it can maintain sufficient financial strength to be able to remain a reliable partner and deliver on its value propositions in the long term.

In response to the changing conditions in which it operates, **Union Investment** has created the internal FitForFuture program, which establishes the strategic areas of investment going forward. These areas of investment include not only sustainability and digitalization but also a 'learning organization'. Other key areas are the cementing of Union Investment's positioning as an active asset manager and the Masterplan platform in its retail business, which chimes with the aim of harnessing the potential of high-net-worth customers and the related product range. This investment in the future will be cost-neutral and will thus help to secure the profitable growth of the Union Investment Group.

Positive effects from the strategic programs and initiatives could have a beneficial impact on, for example, net fee and commission income, net interest income, or administrative expenses.

VII DZ BANK Group and DZ BANK risk report

1 Disclosure principles

In its capacity as the parent company in the DZ BANK Group, DZ BANK is publishing this risk report in order to meet the transparency requirements for risks applicable to the DZ BANK Group as specified in **section 114 and section 117 of the German Securities Trading Act (WpHG)** and **section 315 of the German Commercial Code (HGB)** in conjunction with **German Accounting Standard (GAS) 20**. Furthermore, the risk report meets the transparency requirements regarding risks applicable to DZ BANK as a separate entity that are specified in **section 289 HGB** in accordance with GAS 20. Based on the requirements set out in GAS 20.A1.3, this risk report is structured according to risk type. The chapters about the individual risk types are preceded by general information and information relating to all risk types.

With this report, DZ BANK also meets the risk reporting requirements specified in the International Accounting Standards (IASs) and International Financial Reporting Standards (IFRSs), specifically those set out in the following legal standards:
– **IAS 1.134–136** (capital)
– **IFRS 7.31–42** (nature and extent of risks arising from financial instruments)
– **IFRS 17.121–132** (nature and extent of risks arising from contracts within the scope of IFRS 17); at the start of 2023, the provisions of IFRS 17.121–132 replaced the rules that had applied until the previous year (IFRS 4.38–39A)

This information is referred to in the notes to the consolidated financial statements and, as such, is also formally part of the notes to the consolidated financial statements.

This does not include the legal standards below, because the required disclosures are not used to manage risk. In these instances, the disclosures are made in the notes to the consolidated financial statements:
– Accounting-related credit disclosures in accordance with **IFRS 7.35F(a)–36(b)**: note 86
– Maturity analysis in respect of financial assets and financial liabilities in accordance with **IFRS 7.39(a) and (b)**: note 87
– Sensitivity analyses in accordance with **IFRS 17.128**: note 97
– Claims rate trend for direct non-life insurance business and for the inward reinsurance business in accordance with **IFRS 17.130**: note 95
– Maturity analysis for insurance contracts issued and for reinsurance contracts held in accordance with **IFRS 17.132(b) and (c)**: note 97

The requirements set out in IFRS 7 are generally limited to financial instruments, shifting the focus of reporting to credit risk, equity investment risk, market risk, and liquidity risk. In contrast, the DZ BANK Group takes a holistic view of all these risks when using risk management tools and when assessing the risk position. As a consequence, the groupwide risk management system not only covers risks that arise specifically in connection with financial instruments, but also all other relevant types of risk. This integrated approach is reflected in this risk report.

In preparing this risk report, DZ BANK also takes account of the **recommended risk-related disclosures** issued by the Financial Stability Board (FSB), the European Banking Authority (EBA), and the European Securities and Markets Authority (ESMA) that are designed to improve the usefulness of disclosures in the decision-making process.

The quantitative disclosures in this risk report are based on information that is presented to the Board of Managing Directors and used for internal management purposes (known as the **management approach**). The disclosure of this information, which is important for knowledgeable users, is designed to ensure that external reporting is useful when such users need to make decisions.

The details relating to DZ BANK are included in the risk report for the DZ BANK Group. A separate risk report is not prepared for DZ BANK. Unless stated otherwise, the disclosures relating to the DZ BANK Group and the Bank sector also apply to DZ BANK. References in this risk report to governing bodies (Board of Managing Directors and Supervisory Board), committees, or organizational units relate to DZ BANK. If the governing bodies, committees, or organizational units of subsidiaries are meant, however, this is indicated by stating the name of the relevant subsidiary.

Detailed information on individual subsidiaries of DZ BANK is only provided if the subsidiaries are of material significance to risk management, risk factors or the risk position, and if the situation in the subsidiaries differs substantially from the overall descriptions applicable to the DZ BANK Group. However, subsidiaries are always mentioned where this is necessary to explain the amount, structure, and management of the risks in the DZ BANK Group, and the changes in these risks.

The disclosure of **non-financial risks** in accordance with section 315c HGB in conjunction with section 289c HGB is included in the separate combined non-financial report of the DZ BANK Group and DZ BANK, which forms part of the Sustainability Report. The report analyzes the impact of the activities of the entities in the DZ BANK Group on economic units and persons outside the DZ BANK Group. The concept of risk in section 315c HGB therefore fundamentally differs from the standard concept of risk as defined in Basel Pillar 2, which is concerned with risks that affect the entities in the DZ BANK Group themselves. The risks as defined in Basel Pillar 2 are disclosed in this risk report. Non-financial risks subject to regulatory standards comprise reputational risk and operational risk. Details on the management of these risks are included in chapters VII.13 and VII.19 'Reputational risk' and in chapters VII.14 and VII.20 'Operational risk'.

DZ BANK Group

2 Summary

2.1 Risk management system

2.1.1 Regulatory framework for risk management

The DZ BANK Group's risk management system takes into account the statutory requirements specified in section 25 (1) of the German Supervision of Financial Conglomerates Act (FKAG) in conjunction with section 25a of the German Banking Act (KWG) and the German Minimum Requirements for Risk Management for Banks and Financial Services Institutions (MaRisk BA). Furthermore, in light of the different business models in place in parts of the DZ BANK Group, other specific legal requirements have also been observed. These include sections 26 and 27 of the German Act on the Supervision of Insurance Undertakings (VAG) in conjunction with the German Minimum Requirements for the System of Governance of Insurance Undertakings (MaGo) and section 28 of the German Capital Investment Code (KAGB) in conjunction with the German Minimum Requirements for Risk Management for Investment Management Companies (KAMaRisk).

When the DZ BANK Group designed the risk management system, it followed the guidance provided by the EBA and the European Insurance and Occupational Pensions Authority (EIOPA), together with the pronouncements of the Basel Committee on Banking Supervision (BCBS) and the FSB on risk management issues.

2.1.2 Fundamental features of risk management

Risks result from adverse developments affecting financial position or financial performance, and essentially comprise the risk of an unexpected future liquidity shortfall or unexpected future losses. A distinction is made between liquidity and capital. Risks that materialize can affect both of these resources.

DZ BANK and its subsidiaries have a **risk management system** that is updated on an ongoing basis in line with changes to the business and regulatory environment. The risk management system is designed to enable them to identify material risks – particularly risks to their ability to continue as a going concern – at an early stage and to initiate the necessary control measures. The main elements of the risk management system are organizational arrangements, methods, IT systems, the limit system based on economic risk-bearing capacity, stress testing of all material risk types, and internal reporting.

The risk management system is based on the **risk appetite statement** – the fundamental document for determining risk appetite in the DZ BANK Group – and the specific details and additions in **risk strategies**, which are consistent with the business strategy and are approved by the Board of Managing Directors. The risk appetite statement contains risk policy guidelines and strategy requirements that are applicable throughout the group. It also sets out quantitative requirements reflecting risk appetite.

The DZ BANK Group strives to avoid **concentrations of risk** that are not the conscious result of business policy.

The methods used to **measure risk** are an integral element of the risk management system. They are regularly reviewed, refined where necessary, and adapted to changes in internal and external requirements. Risk model calculations are used to manage the DZ BANK Group.

The tools used for the purposes of risk management are also designed to enable the DZ BANK Group to respond appropriately to **significant market movements**. For example, the market data used for the centralized, model-driven measurement of market risk is updated every trading day and significant market movements therefore lead to an immediate increase in the volatility of risk factors and, consequently, changes in market risk. In addition, changes in credit ratings and correlations affect the modeled level of credit risk. Conservative crisis scenarios for short-term and medium-term liquidity are intended to ensure that liquidity risk management takes adequate account of market crises.

2.1.3 KPIs

Risks affecting liquidity and capital resources are managed on the basis of groupwide liquidity risk management and groupwide risk capital management. The purpose of **liquidity risk management** is to ensure adequate levels of liquidity reserves are in place in respect of risks arising from future payment obligations (liquidity adequacy). The aim of **risk capital management** is to ensure the availability of capital resources that are commensurate with the risks assumed (capital adequacy).

The key risk management figures used in respect of **liquidity** are the minimum liquidity surplus, the liquidity coverage ratio (LCR), and the net stable funding ratio (NSFR). The key risk management figures used in respect of **capital** are economic capital adequacy, the coverage ratio for the financial conglomerate, the regulatory capital ratios, the leverage ratio, and the metrics for the minimum requirement for own funds and eligible liabilities (MREL). These metrics are the MREL ratio as a percentage of risk-weighted assets, the MREL ratio as a percentage of the leverage ratio exposure, the subordinated MREL ratio as a percentage of risk-weighted assets, and the subordinated MREL ratio as a percentage of the leverage ratio exposure.

2.1.4 Management units and sectors

The DZ BANK Group is managed using the main types of risk, taking into account particular features relating to DZ BANK and its material subsidiaries (also referred to below as management units). Where a subsidiary acts as the parent company of a subgroup, the entire subgroup comprising the parent company plus its subsidiaries and second-tier subsidiaries is considered to be the management unit.

The management units represent the operating segments in the consolidated financial statements of the DZ BANK Group and form the core of the financial services group. All entities in the DZ BANK Group are integrated into the groupwide risk management system. Risk is managed groupwide on a consolidated basis. From a risk perspective, the 'DZ BANK' management unit equates to the central institution and corporate bank operating segment and the holding function.

The management units are deemed to be material in terms of their contribution to the DZ BANK Group's aggregate risk and are directly incorporated into the group's risk management system. The other subsidiaries and investee entities of DZ BANK are integrated into the risk management system either indirectly as part of equity investment risk or directly as part of other types of risk. This is decided for each of them annually.

The management units' subsidiaries and investees are also included in the DZ BANK Group's risk management system – indirectly via the majority-owned entities – with due regard to the minimum standards applicable throughout the group.

The **insurance business** operated at **R+V** differs in material respects from the other businesses of the DZ BANK Group. For example, actuarial risk is subject to factors that are different from those affecting the risks typically assumed in banking business. Furthermore, policyholders have a share in any gains or losses from investments in connection with life insurance, health insurance, and casualty insurance as specified under statutory or contractual arrangements, and this must be appropriately taken into account in the measurement of risk. Not least, the supervisory authorities also treat banking business and insurance business differently and this is reflected in differing regulatory regimes for banks and insurance companies.

Because of these circumstances, two sectors – Bank sector and Insurance sector – have been created within the DZ BANK Group for the purposes of economic risk management. The management units are assigned to these sectors as follows:

Bank sector:
- DZ BANK
- BSH
- DZ HYP
- DZ PRIVATBANK
- TeamBank
- UMH
- VR Smart Finanz

Insurance sector:
- R+V

DZ BANK and **DZ HYP** have elected to apply the **liquidity waiver** pursuant to article 8 of the Capital Requirements Regulation (CRR). The waiver enables the LCR and NSFR to be applied at the level of a single liquidity subgroup consisting of DZ BANK and DZ HYP. This means that it is no longer necessary to comply with the regulatory liquidity requirements at the level of the two individual institutions.

Furthermore, **DZ HYP** has applied the **capital waiver** pursuant to section 2a (1), (2), and (5) KWG in conjunction with article 7 (1) CRR, under which – provided certain conditions are met – regulatory supervision at individual bank level may be replaced by supervision of the entire banking group.

2.2 Risk factors and risks

The entities in the DZ BANK Group are exposed to a number of risk factors. These include adverse factors concerning the entity's environment that either affect multiple types of risk (general risk factors) or are limited to specific types of risk (specific risk factors). Disclosures on **general risk factors** can be found in chapter VII.4. The **specific risk factors** are shown in the risk-type-specific chapters of this risk report.

The main features of the directly managed **risks** in the Bank and Insurance sectors and how they break down across the **operating segments** reported in note 33 of the notes to the consolidated financial statements are shown in Fig. VII.1 and Fig. VII.2. The risks shown there correspond to the outcome of the risk inventory check and reflect the risks that are material to the DZ BANK Group.

To ensure that the presentation of the disclosures remains clear, the risk management system disclosures included in the risk report are limited to the main material entities in the group (indicated in Fig. VII.1 by a dot on a dark gray background). This selection is based on a **materiality assessment**, which takes into account the contribution of each management unit to the DZ BANK Group's overall risk for each type of risk. However, the figures presented in the risk report cover all the management units included in the internal reporting system (indicated additionally in Fig. VII.1 by a dot on a light gray background).

2.3 Risk profile and risk appetite

The DZ BANK Group's **business model** and the associated business models used by the management units (see chapter I.1 in 'DZ BANK Group fundamentals') determine the risk profile. The main risks associated with the business models are shown in Fig. VII.1 and Fig. VII.2. The businesses operated by the management units that have a significant impact on the risk profile are described under 'Business background and risk strategy' within the chapters of the risk report covering the different risk types.

The values for the measurement of **liquidity and capital adequacy** presented in Fig. VII.3 and Fig. VII.4 reflect the liquidity risks and the risks backed by capital assumed by the DZ BANK Group. They illustrate the **risk profile** of the DZ BANK Group. The values for these KPIs are compared against the (internal) threshold values specified by the Board of Managing Directors – also referred to below as **risk appetite** – and against the (external) minimum targets laid down by the supervisory authorities. The KPIs are explained in more detail later in this risk report.

The **MREL ratio as a percentage of the leverage ratio exposure** and the **subordinated MREL ratio as a percentage of the leverage ratio exposure** were added to the liquidity and capital adequacy KPI systems at the start of 2023.

FIG. VII.1 – RISKS AND OPERATING SEGMENTS IN THE BANK SECTOR[1]

Risks

	Risk type	Definition	Risk factors
	RISK NOT COVERED BY CAPITAL		
	Liquidity risk	Risk that cash and cash equivalents will not be available in sufficient amounts to ensure that payment obligations can be met (insolvency risk)	– Follow-up funding risk – Collateral risk – Fair value risk – Drawdown risk – Termination risk – New business risk – Repurchase risk – Intraday risk – Foreign currency funding risk
	RISK COVERED BY CAPITAL		
Financial risks	**Credit risk** – Traditional credit risk – Issuer risk – Replacement risk	Risk of losses arising from the default of counterparties (borrowers, issuers, other counterparties) and of losses in connection with the recovery of loans, advances, receivables, or collateral	General credit risk factors: – Increase in the concentration of volume in counterparties, industries, or countries – Accumulation of exposures with longer terms to maturity Specific credit risk factors: – Negative macroeconomic and environmental trends – Physical and transition risks related to climate and the environment
Financial risks	**Equity investment risk**	Risk of losses arising from negative changes in the fair value of that portion of the long-term equity investments portfolio for which the risks are not included in other types of risk	Increased requirement for the recognition of impairment losses on the carrying amounts of investments – as a result of impaired carrying amounts – as a result of a lack of information in the case of non-controlling interests
Financial risks	**Market risk** – Interest-rate risk – Equity risk – Fund price risk – Currency risk – Commodity risk – Spread risk and migration risk – Asset-management risk – Market liquidity risk	– Risk of losses that could arise from adverse changes in market prices or in the parameters that influence prices (market risk in the narrow sense of the term) – Risk of losses that could arise from adverse changes in market liquidity such that assets can only be liquidated in markets if they are discounted and that it is only possible to carry out active risk management on a limited basis (market liquidity risk)	General market risk factors: – Changes in the yield curve – Changes in credit spreads – Changes in exchange rates – Changes in share prices Specific market risk factors: – A further unexpected rise in interest rates – Risks to the global economy
Financial risks	**Technical risk of a home savings and loan company**[2] – New business risk – Collective risk	– Risk of a negative impact from possible variances compared with the planned new business volume (new business risk) – Risk of a negative impact that could arise from variances between the actual and forecast performance of the collective building society operations caused by significant long-term changes in customer behavior unrelated to changes in interest rates (collective risk)	– Decline in new business – Changed customer behavior (unrelated to changes in interest rates)
Financial risks	**Business risk**	Risk that financial performance is not in line with expectations, and this is not covered by other types of risk	– Costs of regulation – Competition based on pricing and terms
Non-financial risks	**Reputational risk**[3]	Risk of losses from events that damage confidence, mainly among customers (including the cooperative banks), shareholders, employees, the labor market, the general public, and the supervisory authorities, in the entities in the Bank sector or in the products and services that they offer	– Decrease in new and existing business – Backing of stakeholders is no longer guaranteed – Materialization of the risks assessed in connection with ESG risks
Non-financial risks	**Operational risk**	Risk of losses from human behavior, technological failure, weaknesses in process or project management, or external events	– Compliance risk including conduct risk: Violations of legal provisions; failure to comply with corporate policies – Legal risk: Violations of legal provisions or failures in applying such provisions; adverse changes in the legal environment – Information risk including ICT risk: Failure to maintain the confidentiality, integrity, availability, or authenticity of information or data – Security risk: Inadequate protection of individuals, premises, assets, or time-critical processes – Outsourcing risk: Disruptions to outsourced processes and services – Project risk: Failure to complete projects on schedule

1 Apart from migration risk on traditional loans, which are covered by the capital buffer.
2 Including business risk and reputational risk of BSH.
3 The Bank sector's reputational risk is contained in the risk capital requirement for business risk. BSH's reputational risk, which is covered mainly by the technical risk of a home savings and loan company, is not included here.

Risk management KPIs disclosed	Risks	DZ BANK	BSH	DZ HYP	DZ PRIVATBANK	TeamBank	UMH	VR Smart Finanz
– Liquid securities – Unsecured short-term and medium-term funding – Minimum liquidity surplus – LCR – NSFR	Chapter VII.6.2.6 Chapter VII.6.2.6 Chapter VII.6.2.7 Chapter VII.6.3.3 Chapter VII.6.3.4	●	●	●	●	●		●
– Lending volume – Risk capital requirement for credit risk	Chapters VII.8.6 to VII.8.9 Chapter VII.8.10	●	●	●	•	●		•
– Carrying amounts of investments – Risk capital requirement for equity investment risk	Chapter VII.9.5 Chapter VII.9.5	●	●	•		●	•	•
– Value-at-risk for market risk – Risk capital requirement for market risk	Chapter VII.10.7.1 Chapter VII.10.7.2	●	●	●	•	•	●	•
Risk capital requirement for the technical risk of a home savings and loan company	Chapter VII.11.5		●					
Risk capital requirement for business risk	Chapter VII.12.6	●		•	•	•		•
		●	●	●	●	●	●	●
– Losses from operational risk – Risk capital requirement for operational risk	Chapter VII.14.7 Chapter VII.14.8	●	•	•	●	•	●	•

Management unit disclosures in the risk report:

● Quantitative and qualitative disclosures

• Quantitative disclosures

Not relevant

FIG. VII.2 – RISKS IN THE INSURANCE OPERATING SEGMENT AND SECTOR

	Risk type	Definition	Risk factors	Risk management KPIs disclosed	
	RISK COVERED BY CAPITAL PURSUANT TO SOLVENCY II				
Financial risks	**Actuarial risk** – Life actuarial risk	Risk arising from the assumption of life insurance obligations in relation to the risks covered and the processes used in the conduct of this business	– Adverse change in the calculation assumptions for life insurance over the lifetime of the contract – Increase in claim events as a result of pollution and climate change	– Claims rates and settlements in non-life insurance – Overall solvency requirement	Chapter VII.16.6 Chapter VII.16.7
Financial risks	– Health actuarial risk	Risk arising from the assumption of health and casualty insurance obligations in relation to the risks covered and the processes used in the conduct of this business	– Higher drawdown of benefits by health insurance policyholders – Increase in claim events as a result of pollution and climate change		
Financial risks	– Non-life actuarial risk	Risk arising from the assumption of non-life insurance obligations in relation to the risks covered and the processes used in the conduct of this business	– Unexpected rise in claims incurred, e.g. due to weather-related natural disasters attributable to climate change – Rise in claims incurred as a result of silent cyber risk		
Financial risks	**Market risk** – Interest-rate risk – Spread risk – Equity risk – Currency risk – Real-estate risk	Risk arising from fluctuation in the level or volatility of market prices of assets, liabilities, and financial instruments that have an impact on the value of the assets and liabilities of the entity	It becomes difficult to generate a guaranteed rate of return because of a narrowing of spreads on investments The fair values of investments fall because of – a further unexpected rise in interest rates – a widening of spreads on investments – the issuer's transition risk	– Lending volume – Overall solvency requirement	Chapter VII.17.4 Chapter VII.17.5
Financial risks	**Counterparty default risk**	Risk of losses due to unexpected default or deterioration in the credit standing of counterparties or debtors of insurance or reinsurance companies over the subsequent twelve months	Deterioration of counterparties' financial circumstances	– Lending volume – Overall solvency requirement	Chapter VII.18.4
Non-financial risks	**Reputational risk**[1]	Risk of losses that could arise from damage to the reputation of R+V or of the entire industry as a result of a negative perception among the general public	– Decrease in new and existing business – Backing of stakeholders is no longer guaranteed – Materialization of the risks assessed in connection with ESG risks		
Non-financial risks	**Operational risk**	Risk of losses arising from inadequate or failed internal processes, personnel, or systems, or from external events	– Legal and compliance risk: Violations of legal provisions or failures in applying such provisions; adverse changes in the legal environment; violations of statutory provisions; failure to comply with corporate policies – Information risk, including ICT risk: Malfunctions or breakdowns in IT systems – Security risk: Business interruptions could result in lasting disruptions to processes and workflows – Outsourcing risk: Disruptions to outsourced processes and services – Project risk: Failure to complete projects on schedule	Overall solvency requirement	Chapter VII.20.4
	RISK COVERED BY CAPITAL PURSUANT TO SOLVENCY I				
	Risks from entities in other financial sectors	The entities in other financial sectors mainly consist of pension funds and occupational pension schemes	Generally corresponding to the risk factors for risks backed by capital pursuant to Solvency II	Overall solvency requirement	Chapter VII.21

1 The Insurance sector's reputational risk is included in the overall solvency requirement for life actuarial risk (lapse risk).

In addition, an **internal observation threshold** was introduced for each KPI included in Fig. VII.3 and Fig. VII.4 at the start of 2023. These observation thresholds mark the transition point from a comfortable risk situation to a state of heightened alert, whereas the minimum thresholds represent a mandatory internal limit that must be maintained. Both thresholds are elements of the risk appetite statement. The internal minimum thresholds in the risk appetite statement largely represent the warning thresholds in the recovery plan. They are defined by the Board of Managing Directors and presented to the Supervisory Board's Risk Committee for acknowledgement. Depending on the situation and significance, the Chief Risk Officer, the Chief Financial Officer, the relevant committee of the Board of Managing Directors, or the full Board of Managing Directors may initiate operational measures if observation thresholds are crossed. If the minimum thresholds are crossed, the escalation mechanisms set out in the recovery plan are triggered.

FIG. VII.3 – LIQUIDITY AND CAPITAL ADEQUACY KPIS OF THE DZ BANK GROUP

	Measured figure		External minimum target		Internal minimum threshold		Internal observation threshold	
	Dec. 31, 2023	Dec. 31, 2022	2023	2022	2023	2022	2023	2022
LIQUIDITY ADEQUACY								
DZ BANK Group (economic perspective)								
Minimum liquidity surplus (€ billion)[1]	18.5	14.3	0.0	0.0	4.0	4.0	5.0	
DZ BANK banking group (normative perspective)								
Liquidity coverage ratio (LCR, percent)	145.8	145.9	100.0	100.0	110.0	110.0	120.0	
Net stable funding ratio (NSFR, percent)	126.5	122.3	100.0	100.0	106.0	105.0	107.0	
CAPITAL ADEQUACY								
DZ BANK Group (economic perspective)								
Economic capital adequacy (percent)	213.8	222.4	100.0	100.0	120.0	120.0	140.0	
DZ BANK financial conglomerate (normative perspective)								
Coverage ratio (percent)	154.6	151.2	100.0	100.0	113.0	110.0	121.0	
DZ BANK banking group (normative perspective)								
Common equity Tier 1 capital ratio (percent)[2]	15.5	13.7	9.8	9.0	11.3	10.0	12.5	
Tier 1 capital ratio (percent)[2]	17.7	15.2	11.7	10.8	13.3	11.9	14.3	
Total capital ratio (percent)[2]	20.1	18.0	14.1	13.2	15.8	14.3	16.8	
Leverage ratio (percent)[2]	6.2	4.7	3.0	3.0	4.0	4.0	4.3	
MREL ratio as a percentage of risk-weighted assets[3]	42.4	38.3	25.1	25.1	26.8	26.8	27.1	
MREL ratio as a percentage of the leverage ratio exposure	14.9	11.9	7.3	7.3	9.7		10.0	
Subordinated MREL ratio as a percentage of risk-weighted assets[3]	31.0	28.5	23.8	23.8	26.6	25.5	27.1	
Subordinated MREL ratio as a percentage of the leverage ratio exposure	10.9	8.9	7.1	7.1	9.7		10.0	

Not available

1 The measured value relates to the stress scenario with the lowest minimum liquidity surplus.
2 The external minimum targets are the binding regulatory minimum capital requirements. Further details can be found in chapter VII.7.3.3.
3 Calculated as the ratio of the total of regulatory own funds and eligible bail-in-able liabilities to the total risk exposure amount.

With the entry into effect of **IFRS 17** (previous standard: IFRS 4) on January 1, 2023, the accounting treatment of insurance contracts, in particular the treatment of liabilities to policyholders recognized under equity and liabilities, has been changed at R+V. The first regulatory key figures affected by the transition to IFRS 17 were those reported as at June 30, 2023 following the review of the interim consolidated financial statements. Until this point, a temporary accounting effect had applied, as only financial instruments that are predominantly recognized on the asset side of the balance sheet were measured at fair value under IFRS 9 as at December 31, 2022.

Fig. VII.5 shows the material regulatory key figures affected by the implementation of IFRS 17, assuming for regulatory purposes that the new standard had already been applied as at December 31, 2022 (column ‘Dec. 31, 2022 including effect of IFRS 17’), and, as a comparison, the actual regulatory key figures reported for this balance sheet date.

The other key figures included in Fig. VII.3 are not affected by the transition to IFRS 17. The coverage ratio for the DZ BANK financial conglomerate and economic capital adequacy are based on the provisions of Solvency II, meaning that both assets and equity and liabilities are already measured at fair value. The LCR and the minimum liquidity surplus are also unaffected by the transition. The LCR involves only a comparison of liquid assets and net outflows, while the minimum liquidity surplus is based on a cash flow analysis that is independent of the accounting treatment.

FIG. VII.4 – LIQUIDITY AND CAPITAL ADEQUACY KPIS (NORMATIVE PERSPECTIVE) OF DZ BANK

	Measured figure		External minimum target		Internal observation threshold	
	Dec. 31, 2023	Dec. 31, 2022	2023	2022	2023	2022
LIQUIDITY ADEQUACY						
Economic perspective						
Minimum liquidity surplus of DZ BANK (€ billion)[1]	4.8	4.2	0.0	0.0	1.86	
Minimum liquidity surplus of the liquidity subgroup (€ billion)	6.8	7.8	0.0	0.0	1.86	
Normative perspective						
Liquidity coverage ratio (LCR) of the liquidity subgroup (percent)	143.1	142.7	100.0	100.0	115.0	
Net stable funding ratio (NSFR) of the liquidity subgroup (percent)	119.0	113.4	100.0	100.0	106.0	
CAPITAL ADEQUACY						
Normative perspective						
Common equity Tier 1 capital ratio (percent)[2]	14.6	14.8	7.7	7.0	10.3	
Tier 1 capital ratio (percent)[2]	17.6	16.6	9.2	8.5	11.8	
Total capital ratio (percent)[2]	21.4	20.3	11.2	10.5	13.8	
Leverage ratio (percent)[2]	6.8	6.3	3.0	3.0	4.3	

Not available

1 The measured value relates to the stress scenario with the lowest minimum liquidity surplus.
2 The external minimum targets are the binding regulatory minimum capital requirements. Further details can be found in chapter VII.7.3.3.

FIG. VII.5 – LIQUIDITY AND CAPITAL ADEQUACY KPIS (NORMATIVE PERSPECTIVE) OF THE DZ BANK BANKING GROUP, TAKING ACCOUNT OF THE IFRS 17 EFFECT AS AT DECEMBER 31, 2022

	Dec. 31, 2023	Dec. 31, 2022 including effect of IFRS 17[1]	Dec. 31, 2022
Liquidity adequacy of the DZ BANK banking group			
Net stable funding ratio (NSFR, percent)	126.5	122.0	122.3
Capital adequacy of the DZ BANK banking group			
Common equity Tier 1 capital ratio (percent)	15.5	15.1	13.7
Tier 1 capital ratio (percent)	17.7	16.6	15.2
Total capital ratio (percent)	20.1	19.1	18.0
Leverage ratio (percent)	6.2	5.6	4.7
MREL ratio as a percentage of risk-weighted assets	42.4	37.9	38.3
MREL ratio as a percentage of the leverage ratio exposure	14.9	12.7	11.9
Subordinated MREL ratio as a percentage of risk-weighted assets	31.0	28.8	28.5
Subordinated MREL ratio as a percentage of the leverage ratio exposure	10.9	9.7	8.9

1 The values differ from those shown in the risk report in the 2023 interim group management report due to retrospective measurement adjustments.

2.4 Solvency and risk-bearing capacity

The **solvency** of DZ BANK and its subsidiaries was never in jeopardy at any point during the reporting period. They also complied with regulatory requirements for liquidity adequacy. By holding ample liquidity reserves, the group aims to be able to protect its liquidity against any threats in the event of a crisis.

The DZ BANK Group remained within its economic **risk-bearing capacity** in 2023 and also complied with regulatory requirements for capital adequacy on every reporting date.

3 Fundamental principles of risk management

3.1 Risk culture

The DZ BANK Group's risk culture is shaped by the high degree of responsibility assumed by the Cooperative Financial Network for its members and for society, by the values of sustainability, stability, and diversity, and by a strong culture of dialogue. The priority for the day-to-day handling of risk is compliance with strategic and associated operating requirements.

The following **principles** apply in respect of the day-to-day handling of risk:
- **Leadership culture**: The management must set out clear expectations regarding the handling of risk and lead by example.
- **Risk appetite**: Every individual at DZ BANK must understand their role and their part in the risk management system; they must assume responsibility for their decisions.
- **Communications**: Internal communications must be open and consensus-based. Alternative opinions must be respected and employees encouraged to analyze risk transparently.
- **Employees and expertise**: Employees must bear responsibility for conscious handling of risk. They must use the available expertise and undertake continuing professional development in a changing environment.
- **Change management**: DZ BANK must learn from past experience and ensure the business model is sustainable by managing change proactively.

The key features of the risk culture are documented in a framework, which is available to all employees of DZ BANK.

3.2 Risk appetite

The entities in the DZ BANK Group define risk appetite as the nature and extent of the risks that will be accepted at group level or by the management units within their risk capacity when implementing their business models and business objectives. The term 'risk appetite' equates to the term 'risk tolerance' used by the supervisory authorities in a disclosure context. Risk capacity is the maximum risk that the DZ BANK Group can take on based on its capital adequacy, liquidity adequacy, capacity for risk management and control, and regulatory restrictions. Risk capacity is therefore largely determined by the DZ BANK Group's available internal capital, own funds, and available liquid assets. Risk capacity should always exceed risk appetite. The difference between risk capacity and risk appetite reflects the DZ BANK Group's need for security.

The **risk appetite statement** formulates risk policy principles on risk tolerance in the DZ BANK Group. The principles are overarching statements that are consistent with the business model and the risk strategies. The qualitative principles are supplemented by quantitative key figures, for which threshold values are set internally. The values for the KPIs and the internal threshold values are shown in Fig. VII.3. The overall risk report is used to monitor the internal threshold values.

3.3 Risk strategies

The **systematic controlled assumption of risk in relation to target returns** is an integral part of corporate control in the DZ BANK Group. The activities resulting from the business model require the ability to identify, measure, assess, manage, monitor, and communicate risks. The need to hold appropriate reserves of cash and to cover risks with adequate capital is also recognized as an essential prerequisite for the operation of the business and is of fundamental importance.

For each of the material risks, the Board of Managing Directors draws up risk strategies that are linked to the **business strategy**. The risk strategies each encompass the main risk-bearing business activities, the objectives of risk management (including the requirements for accepting or preventing risk), and the action to be taken to attain the objectives. The risk strategies are each valid for one calendar year.

The annual updating of the risk strategies is integrated with the **strategic planning process** and is carried out by the Group Risk Controlling, Group Risk Control & Services, and Group Finance divisions in close consultation with other relevant divisions at DZ BANK and its subsidiaries.

The risk strategies are described in the chapters covering the individual risk types in this risk report.

3.4 Risk-oriented corporate governance

3.4.1 Governance structure

The DZ BANK Group's **risk management system** builds on the risk appetite statement and risk strategies. It is based on three lines of defense that are interlinked and well established in the monitoring and control environment. Fig. VII.6 shows the governance structure for risk management. R+V has implemented a modified governance structure because it is subject to different regulatory requirements.

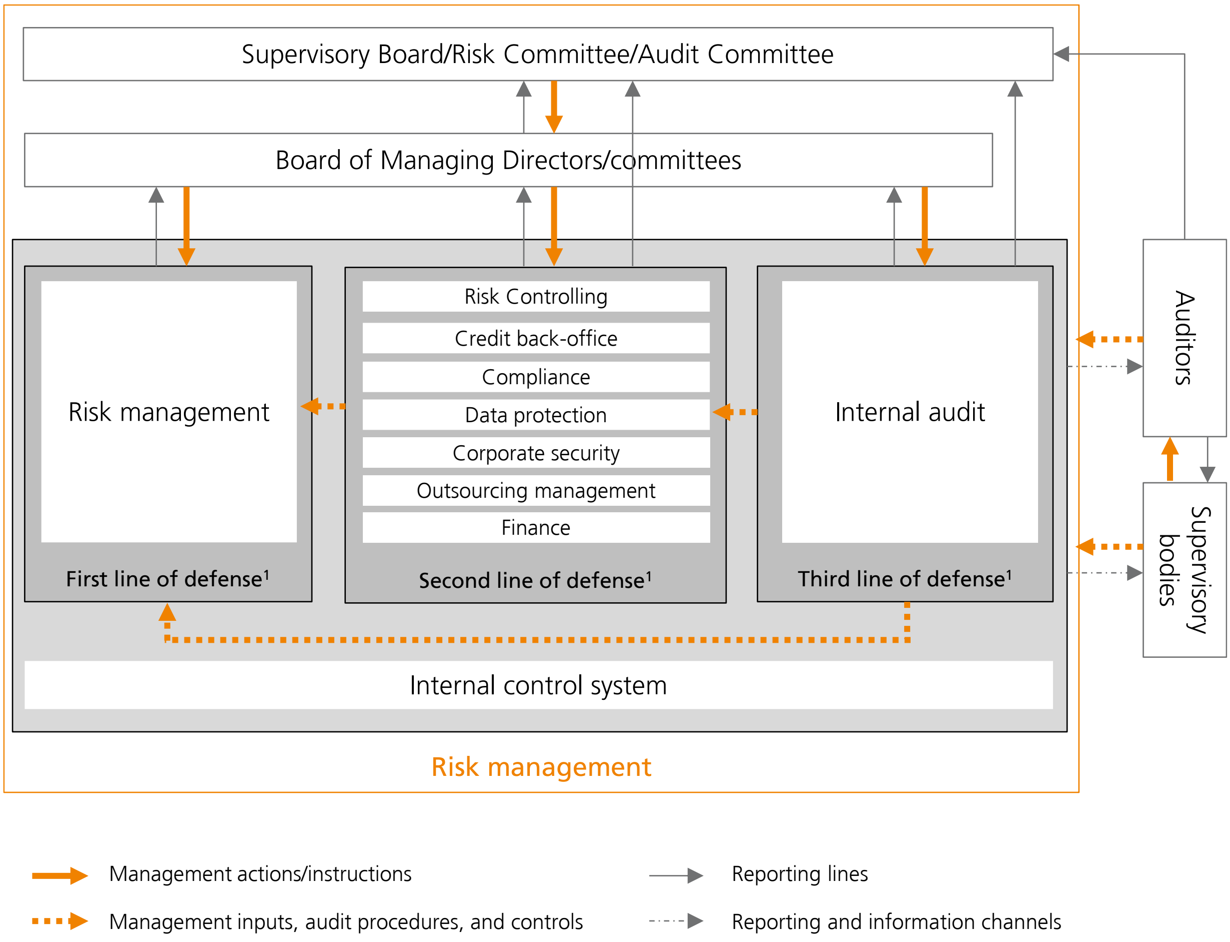
The **three-lines-of-defense model** clarifies the understanding of risk management within the DZ BANK Group and sets out the roles and responsibilities. The interaction between the three lines of defense is intended to provide the basis for effective groupwide risk management. The tasks of the individual lines of defense are as follows:

First line of defense:
- Day-to-day assumption and management of risk; related reporting to the Board of Managing Directors

Second line of defense:
- Establishment and enhancement of a framework for risk management
- Monitoring of compliance with the framework in the first line of defense and related reporting to the Supervisory Board and Board of Managing Directors
- Second vote in credit decisions as defined in MaRisk BA and other specific legal requirements, such as KAMaRisk
- Development and monitoring of principles for compliance with data protection requirements and structuring and monitoring of corporate security and external procurement management (referred to as outsourcing management at the level of the DZ BANK Group). These rules do not limit the data protection officers' freedom to operate independently.
- The tasks listed are primarily carried out by the Group Risk Controlling, Group Risk Control & Services, Credit, Compliance, Group Finance, and Group Financial Services divisions. They are also part of the remit of the Group IT Governance department.
- The Group Risk Controlling, Group Risk Control & Services, and Credit divisions together form the risk management function.

Third line of defense:
- Process-independent examination and assessment of risk management and control processes in the first and second lines of defense
- Reporting to the Board of Managing Directors, Supervisory Board, and Audit Committee
- Communication with external control functions
- Tasks in the third line of defense are primarily carried out by Group Audit.

FIG. VII.6 – GOVERNANCE STRUCTURE OF RISK MANAGEMENT IN THE DZ BANK GROUP



1 The names reflect corporate functions; they are not necessarily identical to the names of these functions in the organizational structure.

Independent auditors, together with supervisory authorities, form the **external control functions** and these functions regularly hold discussions with all three lines of defense. The supervisory authorities can specify key points to be covered by independent auditors in their audits of financial statements. The auditors report to the supervisory authorities on the findings of their audits of financial statements and special audits.

Risk management is an integral component of governance and is therefore taken into account in the general management approach, in the management of subsidiaries via appointments to key posts, and in the DZ BANK Group's committees. The governance of the DZ BANK Group is described in chapter I.2.2 in 'DZ BANK Group fundamentals'.

3.4.2 Risk management

Risk management refers to the operational **implementation of the risk strategies** based on standards applicable throughout the group. The management units make conscious decisions on whether to assume or avoid risks. They must observe guidelines and risk limits specified by the head office. The divisions responsible for risk management in the first line of defense are separated in terms of both organization and function from the divisions in the second and third lines of defense.

3.4.3 Risk control

The Group Risk Controlling and Group Risk Control & Services divisions, which form DZ BANK's central risk control function, are responsible for **identifying, measuring, and assessing** risk in the DZ BANK Group. This role includes early detection, full recording of data (to the extent that this is possible), and internal monitoring for all material risks. The risk control function lays down the fundamental requirements for the risk measurement methods to be used throughout the group and coordinates implementation with the risk control functions in the other management units. This structure is designed to ensure that risk is managed consistently throughout the group. DZ BANK's risk control function also draws up groupwide rules for the credit risk processes.

Both at DZ BANK and in the other management units, the risk control function is responsible for the transparency of risks assumed and aims to ensure that all risk measurement methods used are up to date. In cooperation with the other management units, the risk control function at DZ BANK therefore prepares groupwide **risk reports** covering all material types of risk. The risk reports are compiled for the Supervisory Board and the Board of Managing Directors and for the other management units.

The risk control units in the management units **monitor** compliance with the limits defined for the minimum liquidity surplus and with the entity-related limits that have been set based on the risk capital allocated by DZ BANK.

3.4.4 Credit back-office division

The Credit divisions of the entities in the Bank sector form the back office within the meaning of MaRisk BA. They are responsible for aspects of identifying, measuring, monitoring, and managing credit risk. These aspects include analyzing the risk (including producing ratings), approving or rejecting a credit decision with the back office's 'second vote', ensuring compliance with the credit risk strategy, and identifying and appropriately assessing the risks from loans to members of the governing bodies.

The responsibilities of the back office also comprise the ongoing monitoring of loan exposures, including identifying and processing non-performing exposures and deciding on measures to be implemented if limits are exceeded, as well as the management of loan collateral. In the case of exposures that are relevant for management, the exposure throughout the group is taken into account and appropriate management guidance is given to the management units.

3.4.5 Compliance

Compliance function

The Board of Managing Directors of DZ BANK and the Boards of Managing Directors of the other management units are responsible for compliance with legal provisions and requirements and with the principles and measures implemented for this purpose. To fulfill these duties, the Boards of Managing Directors generally appoint an independent compliance function.

The main tasks of the compliance function are to identify, manage, and mitigate compliance risk in order to protect customers, the entities in the DZ BANK Group, and their employees against breaches of legal provisions and requirements. The compliance function is also responsible for mitigating risks arising from non-compliance with the legal provisions and requirements. Other tasks of the compliance function are to keep senior management up to date with new regulatory requirements and to advise the departments on implementing new provisions and requirements.

In accordance with the requirements of the Supervisory Review and Evaluation Process for Basel Pillar 2 (SREP), there is a single compliance framework for the material entities in the DZ BANK Group. This framework lays down rules on cooperation between the individual compliance functions and sets out their authority and responsibilities. The compliance framework comprises the compliance policy of the DZ BANK Group and compliance standards.

The compliance policy sets out requirements for establishing and organizing the compliance functions and details of their duties. It is supplemented by compliance standards, which specify how to implement these requirements at an operational level. If individual requirements in the compliance standards cannot be fulfilled by a management unit, for example because they conflict with local rules or special legal requirements, the affected management unit must provide an explanation. Special circumstances may arise because R+V is subject to different legal and regulatory requirements. The DZ BANK Group's compliance framework is reviewed annually and on an ad hoc basis to check that it is up to date.

Further disclosures relating to compliance risk can be found in chapters VII.14.5.1 and VII.20.3.1.

Code of conduct

The risk culture principles (see chapter VII.3.1) are mirrored in the DZ BANK Group's code of conduct. The code of conduct represents a framework for the group entities. Its content is implemented in the management units by means of internal regulations and policies that are tailored to their respective core businesses and entity-specific requirements.

The code of conduct encompasses the responsibility to stakeholders who are directly affected by the management unit concerned. These stakeholders include customers, business partners, shareholders, and employees. Compliance with social and ethical standards also forms part of the code of conduct, as do aspects of sustainability.

The subsidiaries of DZ BANK have undertaken to comply with DZ BANK's standards on preventing money laundering, the financing of terrorism, and other criminal offenses where required by law. The measures required by the German Anti-Money Laundering Act (GwG) have been put in place and implemented. They are reviewed regularly to check that they are up to date and, if necessary, amended. No corruption is tolerated, either in the entities of the DZ BANK Group or at business partners or other third parties. The DZ BANK Group implements appropriate organizational arrangements designed to ensure compliance with all applicable sanctions and embargoes.

Data protection

The entities in the DZ BANK Group have introduced suitable precautions aimed at ensuring that they comply with data protection provisions relating to customers, business partners, and employees. The data protection officers required by law have been appointed and their names have been submitted to the competent data protection authorities. Standard data protection principles have been issued within the DZ BANK Group. In addition, employees regularly receive updates on the currently applicable data protection provisions.

In the management units, independent data protection officers report to the relevant Board of Managing Directors. The Data Protection Officers working group in the DZ BANK Group generally meets three times a year. The working group deals with current issues relating to data protection.

3.4.6 Corporate security

The entities in the DZ BANK Group take into account the relevant regulatory requirements in the following areas of corporate security:
- Information security
- Business continuity management (contingency and crisis management)

The regulatory requirements are implemented in all of the group's subsidiaries by means of written specifications and compliance is monitored by DZ BANK.

Information security

The aim of information security is to safeguard the confidentiality, integrity, authenticity, and availability of the data and information (information assets) used in business processes. Technical and organizational measures must be taken to adequately protect these information assets against unauthorized access, disclosure, or modification and against loss or theft.

To manage information security, the **DZ BANK Group** has established a groupwide information security management system (Group ISMS) based on ISO/IEC 27001:2013.

DZ BANK has implemented an information security management system (ISMS). The rules that it contains, along with the methodological framework that it provides, are also based on the ISO/IEC 27001:2013 standard. The ISMS is designed to ensure the confidentiality, integrity, availability, and authenticity of the data and information (information assets) used in DZ BANK's core processes, management processes, and support processes. The governance model implemented defines the methods, processes, roles, responsibilities, authority, and reporting channels that are necessary to achieve the strategic objectives and carry out the tasks of information security at operational level. It also provides an operational framework for the consistent quantitative and qualitative evaluation and management of information security risk, which forms part of operational risk.

Further disclosures relating to information risk, including ICT risk, can be found in chapters VII.14.5.3 and VII.20.3.2.

Business continuity management

A groupwide business continuity management system has been set up to implement regulatory requirements throughout the group and to mitigate security risk relating to time-critical processes. Group standards are applied to address the regulatory minimum requirements for this system, and a governance process is used to track compliance with the standards.

At DZ BANK, business continuity management provides structures and methodologies that will enable time-critical business processes to be maintained should an emergency arise (dealing with emergencies). Measures to protect people, premises, and assets are also developed and implemented (preventing emergencies). In this way, DZ BANK aims to ensure that it can maintain its operations in the event of emergencies, even though the level of activity may have to be reduced. This applies particularly if there are situations in which whole groups of individuals, significant parts of the buildings or IT infrastructure, or the procurement of services are affected.

At DZ BANK, time-critical business processes are identified in accordance with the rules of the head-office team for business continuity management using business impact analyses and protected by business continuity planning. DZ BANK's business continuity management system has been certified in accordance with the ISO 22301 standard.

Further disclosures relating to security risk can be found in chapters VII.14.5.4 and VII.20.3.3.

3.4.7 Outsourcing management

At DZ BANK, the Central Outsourcing Management unit acts as the central point of contact for all issues relating to risk management for external procurement. This includes outsourcing and management-relevant external procurement (external procurement of IT services and other purchases from third parties). The Central Outsourcing Management unit is responsible for developing, introducing, and monitoring the framework specifications as well as for appropriately implementing the statutory requirements in respect of regulated external procurement at DZ BANK.

The sector-wide rules on outsourcing management include general requirements for the management units in the Bank sector to ensure that the management of outsourcing is largely standardized throughout the DZ BANK Group. The Insurance sector is subject to separate regulatory requirements that are described in internal guidance issued by R+V.

Further disclosures relating to outsourcing risk can be found in chapters VII.14.5.5 and VII.20.3.4.

3.4.8 Finance

DZ BANK's **finance function** comprises the Group Finance, Bank Finance, and Group Financial Services divisions. These divisions are responsible for managing the DZ BANK Group and DZ BANK from a commercial-law, regulatory, and business perspective. This includes, in particular, preparing the consolidated and separate financial statements and undertaking regulatory reporting.

From a regulatory perspective, the Group Finance and Group Financial Services divisions are responsible – as part of the tasks specified for risk management governance under the three-lines-of-defense model – for the complete and consistent groupwide and bank-wide preparation, reporting, management, and monitoring of the key figures required under the EU Financial Conglomerates Directive and Basel Pillar 1.

The internal management reporting process is cross-functional and used to report to the Supervisory Board, the Board of Managing Directors, and the subsidiaries. The finance function provides and enhances the requisite IT systems to ensure that it can receive the data it needs. Commercial-law and regulatory matters are handled with the assistance of dedicated organizational units.

The aforementioned tasks are carried out by the finance or risk control functions in the subsidiaries.

3.4.9 Control functions

Internal audit

The internal audit departments of the management units are responsible for control and monitoring tasks. Independently of individual processes and with a focus on risk, they review and assess compliance with statutory and regulatory requirements and the effectiveness and appropriateness of risk management in general and the internal control system in particular. They also check that all activities and processes are carried out properly, regardless of whether they are outsourced or not. The internal audit departments also ensure that problems identified in audit findings are rectified.

The internal audit departments at the entities in the DZ BANK Group report to the chief executive officer or other senior managers of the entity concerned.

DZ BANK's internal audit department is responsible for internal audit tasks at group level. These tasks include, in particular, the design and coordination of audits involving multiple entities, the implementation of which lies within the remit of the individual internal audit departments in the management units concerned, and the evaluation of individual management unit audit reports of relevance to the group as a whole. Cooperation between internal audit departments in the DZ BANK Group is governed by general parameters, the operational details of which are set out in a separate group audit manual. DZ BANK's internal audit department also carries out audit activities for selected subsidiaries under service agreements.

Supervisory Board

The Board of Managing Directors reports in detail to the Supervisory Board of DZ BANK once a year about the updating of the risk strategies and the status and further development of the risk management system of DZ BANK and the DZ BANK Group. Using the overall risk report, the Board of Managing Directors reports to the Supervisory Board about the risk situation four times a year. At the same intervals, the Board of Managing Directors also reports portfolio-specific and exposure-specific management information and reports on the credit portfolio using the credit risk report. The Supervisory Board is also regularly informed about significant investment exposures. The Supervisory Board discusses these issues with the Board of Managing Directors, advises it, and monitors its management activities. The Supervisory Board is involved in decisions of fundamental importance.

The Supervisory Board has set up a Risk Committee, which addresses issues related to overall risk appetite and risk strategy. The chairman of the Risk Committee reports to the full Supervisory Board four times a year on the material findings of the committee's work.

At least quarterly, the Board of Managing Directors makes the centrally produced risk reports available to the members of the Risk Committee and the other members of the Supervisory Board. The chairman of the Risk

Committee informs the full Supervisory Board about the main content of these reports no later than at its next meeting. In addition, the Audit Committee regularly examines the effectiveness of the internal control system, risk management system, and internal audit. It passes on important information to the other Supervisory Board members in the Audit Committee Chairman's reports at Supervisory Board meetings and by distributing the minutes from Audit Committee meetings to the other Supervisory Board members.

External control functions

Independent **auditors** carry out audits pursuant to section 29 (1) sentence 2 no. 2a KWG in conjunction with section 25a (1) sentence 3 KWG in relation to the risk management system, including the internal control functions, of the entities in the Bank sector. For the Insurance sector, an audit of the Solvency II balance sheet is carried out pursuant to section 35 (2) VAG and an audit of the early-warning system for monitoring risks that may jeopardize the ability to continue as a going concern, including the internal monitoring system of R+V, is carried out pursuant to section 35 (3) VAG in conjunction with section 317 (4) HGB and section 91 (2) of the German Stock Corporation Act (AktG).

The **supervisory authorities**, particularly the banking and insurance supervisory authorities, also conduct risk-based audits.

3.4.10 General internal control system

The objective of the internal control systems operated in the entities of the DZ BANK Group is to ensure the effectiveness and efficiency of business activity and compliance with the relevant legal provisions by means of suitable basic principles, action plans, and procedures.

DZ BANK has a bank-wide internal control system that is able to adapt to changing business and operating environments. The methodology of this control system is based on the Internal Control – Integrated Framework of the Committee of Sponsoring Organizations of the Treadway Commission (COSO), a comprehensive and internationally accepted framework for the appropriate design of internal control systems.

As part of the control system, regular updates and assessments are carried out in respect of the internal controls for reducing material risk in the business processes documented in the written set of procedural rules. The outcome of the assessments provides a statement on the appropriateness and effectiveness of the bank-wide internal control system for the Board of Managing Directors and Supervisory Board. The organizational and technical measures integrated into DZ BANK's operational and organizational structure are the starting point for the design of the controls.

The internal control system for the (consolidated) financial reporting process, which is described in chapter VII.3.4.11 below, is a sub-system of the bank-wide internal control system.

3.4.11 Internal control system for the (consolidated) financial reporting process

Objective and responsibilities

DZ BANK is subject to a requirement to prepare consolidated financial statements and a group management report as well as separate financial statements and a management report. The primary objective of external (consolidated) financial reporting is to provide decision-useful information for the users of the reports. This includes all activities to ensure that (consolidated) financial reporting is properly prepared and that material violations of accounting standards – which could result in the provision of inaccurate information to users or in mismanagement of the group – are avoided with a sufficient degree of certainty.

In order to limit operational risk in this area of activity, the entities in the DZ BANK Group have set up internal control systems for the (consolidated) financial reporting process as an integral component of the control systems put in place for the general risk management process. In this context, the activities of employees, the implemented controls, the technologies used, and the design of work processes are structured to ensure that the objectives associated with (consolidated) financial reporting are achieved.

Overall responsibility for (consolidated) financial reporting lies with DZ BANK's Group Finance division, with all the consolidated entities in the DZ BANK Group responsible for preparing and monitoring the quantitative and qualitative information required for the consolidated financial statements.

Instructions and rules

The methods to be applied within the DZ BANK Group in the preparation of the consolidated financial statements are set out in writing in a group manual. The methods to be applied within DZ BANK in the preparation of the separate financial statements are documented in a written set of procedural rules. Both of these internal documents are updated on an ongoing basis. The instructions and rules are audited to assess whether they remain appropriate and are amended in line with changes to internal and external requirements.

Resources and methods for minimizing risk

The group's financial reporting process is decentralized. Responsibility for preparing and checking the quantitative and qualitative information required for the consolidated financial statements lies with the organizational units used for this purpose in the entities of the DZ BANK Group. DZ BANK implements the relevant controls and checks in respect of data quality and compliance with the DZ BANK Group rules.

The organizational units post the accounting entries for individual transactions. The consolidation processes are carried out by DZ BANK's Group Finance division and by the accounting departments of each entity in the DZ BANK Group. The purpose of this structure is to ensure that all accounting entries and consolidation processes are properly documented and checked.

Financial reporting, including consolidated financial reporting, is chiefly the responsibility of employees of DZ BANK and the other organizational units used for this purpose in the entities of the DZ BANK Group. If required, external experts are brought in for certain accounting-related calculations as part of the financial reporting process, such as determining the defined benefit obligation and valuing collateral.

Consolidated financial reporting is based on mandatory workflow plans agreed between DZ BANK's Group Finance division and the individual accounting departments of the subsidiaries. These plans set out the procedures for collating and generating the quantitative and qualitative information required for the preparation of statutory financial reports. The plans also apply to the financial reports prepared for DZ BANK.

Generally accepted valuation methods are used in the preparation of the consolidated financial statements and group management report, and the separate financial statements and the management report. These methods are regularly reviewed to ensure they remain appropriate.

In order to ensure the efficiency of the (consolidated) financial reporting system, the processing of the underlying data is extensively automated using IT systems. Control mechanisms are in place with the aim of ensuring the quality of processing and are one of the elements used to limit operational risk. (Consolidated) accounting input and output data undergoes automated and manual checks.

Business continuity plans have also been put in place. These plans are intended to ensure the availability of HR and technical resources required for the (consolidated) accounting and financial reporting processes.

Information technology

The IT systems used for (consolidated) financial reporting have to satisfy the applicable security requirements in terms of confidentiality, integrity, availability, and authenticity. Automated controls are used to ensure that the processed (consolidated) accounting data is handled properly and securely in accordance with the relevant requirements. The controls in IT-supported (consolidated) accounting processes include, in particular, validation procedures to ensure consistent issue of authorizations, verification of master data modifications, logical access controls, and change management validation procedures in connection with developing, implementing, or modifying IT applications.

The IT infrastructure required for the use of electronic (consolidated) accounting systems is subject to the security controls implemented on the basis of the general IT security principles in the entities of the DZ BANK Group.

The information technology used for consolidated accounting purposes is equipped with the functionality to enable it to handle the journal entries in individual organizational units as well as the consolidation transactions carried out by DZ BANK's group accounting department and by the accounting departments in the subgroups.

IT-supported (consolidated) accounting processes are audited as an integral part of the internal audits carried out by the internal audit departments of the entities in the DZ BANK Group.

Ensuring and improving effectiveness

The processes used are reviewed to ensure they remain appropriate and fit for purpose; they are adapted in line with new products, circumstances, or changes in statutory requirements. To guarantee and increase the quality of (consolidated) accounting in the entities of the DZ BANK Group, the employees charged with responsibility for financial reporting receive needs-based training in the legal requirements and the IT systems used. When statutory changes are implemented, external advisors and auditors are brought in to provide quality assurance for financial reporting. At regular intervals, the internal audit department audits the internal control system related to the process for (consolidated) financial reporting.

3.5 Risk management tools

3.5.1 Accounting basis for risk management

Accounting basis for risk measurement

The transaction data that is used to prepare the DZ BANK Group's consolidated financial statements forms the basis for the measurement of risk in the Bank sector and Insurance sector. Similarly, the transaction data used by the entities in the DZ BANK Group to prepare separate financial statements and subgroup financial statements is also used for the measurement of risk in the management units. A wide range of other factors are also taken into account in the calculation of risk. These factors are explained in more detail during the course of this risk report.

The line items in the consolidated financial statements significant to risk measurement are shown in Fig. VII.7. The information presented is also applicable to the measurement of risk for the separate financial statements of DZ BANK and the measurement of its risk, which does not include the technical risk of a home savings and loan company or the risks incurred by the Insurance sector.

The sections below provide a further explanation of the link between individual types of risk and the consolidated financial statements.

A further breakdown of the line items in the consolidated financial statements used to determine **credit risk** is given in chapter VII.8.6.2.

The investments used for the purposes of measuring **equity investment risk** are the following items reported in note 54 of the notes to the consolidated financial statements: shares and other shareholdings, investments in subsidiaries, investments in associates, and investments in joint ventures.

In the **Bank sector**, the measurement of financial instruments both for the purposes of determining market risk and for financial reporting purposes is based on market data provided centrally. Discrepancies in carrying amounts arise from the differing treatment of impairment amounts in the market risk calculation and in the accounting figures. Differences also arise because the market risk calculation measures bonds on the basis of issuer and credit spreads using available market data whereas the accounting treatment uses liquid bond prices. If no liquid prices are available for bonds, issuer and credit spreads are also used to measure bonds for accounting purposes. With the exception of these differences, the disclosures relating to **market risk** reflect the fair values of the assets and liabilities concerned.

The measurement for the **technical risk of a home savings and loan company** is based on the loans and advances to banks and customers (home savings loans) and also the home savings deposits (deposits from banks and customers) described in notes 62 and 63 of the notes to the consolidated financial statements.

Insurance contract liabilities, as reported in the financial statements, are a key value for determining all types of **actuarial risk**. The line item Investments held by insurance companies is used to determine all types of **market risk** and **counterparty default risk**. The line item Other assets is included in the computation of actuarial risk and counterparty default risk.

Operational risk in the Bank sector, **business risk** (Bank sector), and **reputational risk** (Bank sector and Insurance sector) are measured without a direct link to balance sheet line items reported in the consolidated financial statements. On the other hand, **operational risk in the Insurance sector** is based on insurance contract liabilities.

The calculation of **liquidity risk** is derived from future cash flows, which in general terms are determined from all of the on-balance-sheet and off-balance-sheet items in the consolidated financial statements.

Accounting basis for risk coverage

The link between the counterbalancing capacity, which is used to determine economic liquidity adequacy, and the consolidated balance sheet is described in chapter VII.6.2.6.

The link between available internal capital, which is used to determine economic capital adequacy, and the consolidated balance sheet is covered in chapter VII.7.2.1.

3.5.2 Risk measurement

Framework

Risk management in the DZ BANK Group is based on a **resource-oriented perspective of liquidity and capital**. The group uses this approach to implement the regulatory requirements for the internal liquidity adequacy assessment process (ILAAP) and the internal capital adequacy assessment process (ICAAP). This involves dovetailing between the economic and normative perspectives within the ILAAP and ICAAP.

FIG. VII.7 – RISK-BEARING LINE ITEMS IN THE CONSOLIDATED FINANCIAL STATEMENTS[1]

		BANK SECTOR												INSURANCE SECTOR									
		Credit risk				Market risk								Actuarial risk			Market risk						
						General market risk																	
Consolidated financial statements		Traditional credit risk	Issuer risk	Replacement risk	**Equity investment risk**	Interest-rate risk	Equity risk	Fund price risk	Currency risk	Commodity risk	Spread risk and migration	Asset-management risk	**Technical risk of a home savings and loan company**	Life	Health	Non-life	Interest-rate risk	Spread risk	Equity risk	Currency risk	Real-estate risk	**Counterparty default risk**	**Operational risk**
Risk-bearing assets	Loans and advances to banks	•		•		•			•		•		•										
	Loans and advances to customers	•		•		•			•		•		•										
	Derivatives used for hedging (positive fair values)			•		•	•	•	•	•	•												
	Financial assets held for trading		•	•		•	•	•	•	•	•												
	Investments		•	•	•	•	•	•	•	•	•												
	Investments held by insurance companies																•	•	•	•	•	•	
	Property, plant and equipment, investment property, and right-of-use assets				•																		
	Other assets	•		•										•	•	•						•	
	Financial guarantee contracts and loan commitments	•				•			•														
Risk-bearing liabilities	Deposits from banks					•			•				•										
	Deposits from customers					•			•				•										
	Debt certificates issued including bonds					•	•	•	•														
	Derivatives used for hedging (negative fair values)			•		•	•	•	•	•	•	•											
	Financial liabilities held for trading			•		•	•	•	•	•	•												
	Insurance contract liabilities													•	•	•	•						•

1 The details for liquidity risk are not provided here for reasons of clarity as liquidity risk is generally determined on the basis of all line items in the consolidated financial statements.

A distinction is also made between **economic and normative liquidity adequacy and between economic and normative capital adequacy**. The impact of each risk type on both economic capital and economic liquidity is taken into consideration. The effect and materiality of the various types of risk may vary, depending on the resource in question.

Economic liquidity adequacy

To ascertain the DZ BANK Group's economic liquidity adequacy, the minimum surplus cash that would be available if various scenarios were to materialize within the following year is determined as part of the **measurement of liquidity risk**. There is no capital requirement in connection with liquidity risk.

Concentrations of liquidity risk can occur primarily due to the accumulation of outgoing payments at particular times of the day or on particular days (concentrations of maturities), the distribution of funding across particular currencies, markets, products, and liquidity providers (concentrations of funding sources), and the distribution of liquidity reserves across particular currencies, ratings, and issuers (concentrations of reserves).

R+V (Insurance sector) is not material with regard to liquidity risk in the DZ BANK Group. This is because liquidity is typically tied up in liabilities with maturities of five years or more in insurance business.

Economic capital adequacy

In the **Bank sector**, the **risk capital requirement** is calculated for credit risk, equity investment risk, market risk, the technical risk of a home savings and loan company, operational risk, and business risk in order to ascertain economic capital adequacy. This risk capital requirement is generally calculated as value-at-risk with a holding period of 1 year and a confidence level of 99.9 percent.

The capital requirement for the individual risk types is aggregated into the total risk capital requirement for the Bank sector taking into account various diversification effects. The diversified risk capital requirement reflects the interdependency of individual types of risk. The risks relating to the Bank and Insurance sectors are aggregated, disregarding diversification effects between the sectors.

In the **Insurance sector**, risk measurement is based on the method specified in Solvency II with the aim of determining value-at-risk, which is the measure of **economic capital**. The value-at-risk for the change in economic own funds is determined with a confidence level of 99.5 percent over a period of one year.

The DZ BANK Group holds a **capital buffer** as a component of aggregate risk to allow for a possible lack of precision in the measurement of the risks backed by capital.

Normative perspective

The normative perspective is a forward-looking multi-year analysis of regulatory KPIs for liquidity adequacy and capital adequacy that are used to manage the DZ BANK banking group and its entities. It comprises the following management dimensions: monitoring of the actual figures for regulatory KPIs, liquidity planning, funding planning, capital planning, and adverse stress tests.

3.5.3 Stress tests

In addition to the risk measurements, the effects of extreme but plausible events are also analyzed. Stress tests of this kind are used to establish whether the DZ BANK Group can sustain its business models, even under extreme economic conditions. Stress tests are carried out in respect of liquidity, economic risk-bearing capacity, and regulatory capital ratios. They also help to identify and quantify specific risks and potential risk concentrations in the DZ BANK Group or in individual portfolios and to assess risk factors, vulnerabilities, and threats.

The stress tests include scenarios for the purposes of liquidity management, capital planning, and internal capital and risk management. Stress tests are also carried out as part of bank recovery and resolution planning. Furthermore, the DZ BANK Group takes part in supervisory stress tests organized by the EBA and ECB. The outcome of the stress tests provides guidance for the management of risk, business planning, and decisions on liquidity measures or corporate action.

3.5.4 Limitation principles

The DZ BANK Group has implemented a system of limits to ensure that it retains an adequate level of liquidity and maintains its risk-bearing capacity. A system of limits and pre-set threshold values aims to ensure that the **liquidity surplus** at the level of the DZ BANK Group does not become a shortfall and that an adequate level of liquidity is guaranteed. In the case of **risks backed by capital**, the limits take the form of risk limits or volume limits, depending on the type of business and type of risk. Whereas risk limits in all types of risk restrict the risk capital requirement measured with an economic model, volume limits are applied additionally in lending and trading transactions to limit credit risk. Risk management is also supported by the setting of limits for relevant key performance indicators.

3.5.5 Hedging objectives and hedging transactions

Hedging activities can be undertaken where appropriate in order to transfer credit risk, market risk (Bank sector), market risk (Insurance sector), actuarial risk, and operational risk to the greatest possible extent to third parties outside the DZ BANK Group. All hedging activities are conducted within the strategic rules specified in writing and applicable throughout the group. Derivatives and other instruments are used to hedge credit risk and market risk.

If the hedging of risk in connection with financial instruments gives rise to **accounting mismatches** between the hedged item and the derivative hedging instrument used, the DZ BANK Group designates the hedging transaction as a hedge in accordance with the hedge accounting requirements of IFRS 9 in order to eliminate or reduce such mismatches. The DZ BANK Group continues to account for portfolio hedges in application of the rules under IAS 39. Hedge accounting in the DZ BANK Group encompasses the hedging of interest-rate risk. It therefore affects market risk in both the Bank and Insurance sectors. Hedging information is disclosed in note 84 of the notes to the consolidated financial statements.

DZ BANK uses derivatives to hedge **interest-rate risk**. It uses micro hedges between securities in the liquidity reserve and derivatives used for hedging in order to account for economic hedging in accordance with the provisions of section 254 HGB. Internal hedging instruments are included by means of the deputization principle.

3.5.6 Risk reporting and risk manual

The quarterly **overall risk report** includes the risks throughout the group identified by DZ BANK. Together with the **DZ BANK Group stress tests report**, which is also compiled on a quarterly basis, the overall risk report is the main channel through which risks incurred by the DZ BANK Group and the management units are communicated to the Supervisory Board's Risk Committee, the Board of Managing Directors, and the Group Risk and Finance Committee. Economic and regulatory key risk indicators are also made available to the Board of Managing Directors in a **monthly overall risk report**, which is intended to ensure that the Board is informed promptly about the overall risk situation. In addition, the Board of Managing Directors and the Supervisory Board's Risk Committee receive portfolio and exposure-related management information in the quarterly **credit risk report for the DZ BANK Group**. The Board of Managing Directors also receives monthly information on **liquidity risk** in the DZ BANK Group and in the management units.

To complement the above, the management units have further reporting systems for all relevant types of risk. Depending on the degree of materiality in the risk exposures concerned, these systems aim to ensure that decision-makers and supervisory bodies receive transparent information at each measurement date on the risk profile of the management units for which they are responsible.

The **risk manual**, which is available to all employees of the management units, sets out the general parameters for identifying, measuring, assessing, managing, monitoring, and communicating risks. These general parameters are intended to ensure that risk management is properly carried out in the DZ BANK Group. The manual forms the basis for a shared understanding of the minimum standards for risk management throughout the group.

The material subsidiaries also have their own risk manuals covering special aspects of risk related specifically to these management units. R+V has Solvency II guidelines.

3.5.7 Risk inventory check and appropriateness test

Every year, DZ BANK conducts a **risk inventory check**, the objective of which is to identify the types of risk that are relevant for the DZ BANK Group and assess the materiality of these risk types. According to need, a risk inventory check may also be carried out at other times in order to identify any material changes in the risk profile during the course of the year. A materiality analysis is carried out for those types of risk that could arise in connection with the operating activities of the entities in the DZ BANK Group. The next step is to assess the extent to which there are concentrations of risk types classified as material in the Bank sector, the Insurance sector, and across sectors.

DZ BANK also conducts an annual **appropriateness test**, both for itself and at DZ BANK Group level. The appropriateness test may also be carried out at other times in response to specific events. The aim is to check whether the risk measurement methods used for all types of risk classified as material are in fact fit for purpose. The appropriateness test found that risk measurement in the DZ BANK Group is generally appropriate, although potential improvements to some aspects of risk measurement were identified.

The risk inventory check and appropriateness test are coordinated in terms of content and timing. All management units in the DZ BANK Group are included in both processes. The findings of the risk inventory check and the appropriateness test are incorporated into the risk management process.

Risk inventory checks and appropriateness tests are generally conducted in a similar way for the material subsidiaries.

3.6 Management of risk concentrations

Based on an analysis of portfolios, the sector-specific and cross-sectoral identification of risk concentrations aims to identify potential downside risks that may arise from the accumulation of individual risks and, if necessary, to take corrective action. A distinction is made between risk concentrations that occur within a risk type (**intra-risk concentrations**) and concentrations that arise as a result of the interaction between different types of risk (**inter-risk concentrations**). Inter-risk concentrations are implicitly taken into account when determining correlation matrices for the purposes of inter-risk aggregation. They are mainly managed by using quantitative stress test approaches, which aim to provide a holistic view across all types of risk.

Standard processes are in place to manage **sector-specific risk concentrations** . Those processes are presented in the risk-type-specific chapters of this risk report. In the event of major, extraordinary events occurring in **cross-sectoral risk concentrations**, necessary management measures are initiated, coordinated, and monitored, for example by task forces made up of representatives from the risk management and risk control teams in the affected management units. The Board of Managing Directors is notified of such cases on an ad hoc basis. To support the cross-sectoral identification and management of risk, the members of the Board of Managing Directors of DZ BANK hold seats on the Supervisory Boards of its subsidiaries.

3.7 Recovery and resolution planning

In the reporting year, DZ BANK updated its **group recovery plan** for the DZ BANK Group in accordance with the requirements specified by banking supervisors and submitted it to the ECB. The recovery plan is based on the requirements specified in the German Bank Recovery and Resolution Act (SAG) and in other legal sources, especially Commission Delegated Regulation (EU) 2016/1075, various EBA guidelines, and the German Regulation on Minimum Requirements for the Design of Recovery Plans (MaSanV). The recovery plan is closely linked to the risk appetite statement of the DZ BANK Group as it uses the same KPIs. R+V prepares a hypothetical recovery plan in accordance with section 26 (1) VAG in conjunction with section 275 (1) VAG. **R+V's recovery plan** was voluntarily updated in 2023.

In accordance with article 7 (2) of Regulation (EU) No. 806/2014, the Single Resolution Board (SRB) is the European regulator responsible under the **Single Resolution Mechanism (SRM)** for the preparation of resolution plans and for all decisions in connection with the resolution of all institutions that are under the direct supervision of the ECB. A group resolution plan is drawn up for institutions that are subject to supervision at consolidated level. The SRB works closely with the national resolution authorities (this is BaFin in Germany).

The **resolution plan** is aimed at ensuring the resolvability of the banking group. In accordance with section 42 (1) SAG, the resolution authority (BaFin) can demand that the institution provide it with comprehensive assistance in connection with drawing up and updating the resolution plan. For this reason, DZ BANK supported the ongoing preparation of the resolution plan for the DZ BANK Group in 2023. It supplied the resolution authority with numerous analyses related to DZ BANK and completed standardized questionnaires.

4 General risk factors

The entities in the DZ BANK Group are exposed to a range of risk factors that affect multiple risk types. These general risk factors are presented below.

4.1 Regulatory risk factors

DZ BANK and its subsidiaries are exposed to changes in the regulatory environment. This applies especially to regulation of the financial services sector, which is subject to rapid change. The term ‘regulation’ refers to all aspects of intervention in the financial services industry involving the imposition of rules. Regulation may involve standards related to supervisory law, commercial law, capital markets law, company law, or tax law. Changes in the regulatory environment could have a negative impact on the business activities of DZ BANK and its subsidiaries.

4.1.1 Regulatory capital buffers

BaFin decided to introduce a sectoral systemic risk buffer of 2.0 percent of risk-weighted assets for domestic loans secured by residential real estate and to raise the countercyclical capital buffer rate for Germany from 0.0 percent to 0.75 percent. Since February 1, 2023, these two capital buffers are to be met entirely from common equity Tier 1 capital and result in higher minimum requirements for the common equity Tier 1 capital ratio, Tier 1 capital ratio, and total capital ratio.
All credit institutions in the Bank sector are affected by the countercyclical capital buffer. The sectoral systemic risk buffer affects DZ BANK, BSH, and DZ HYP. The two capital buffers also apply at the level of the DZ BANK banking group.

As at December 31, 2023, BaFin ordered the capital buffer for systemic risk of 4.5 percent enacted in Norway to be applied to exposures located in Norway. Accordingly, institutions must apply the systemic risk buffer if their risk-weighted exposures in Norway exceed NOK 5.0 billion (approximately €435 million). As at December 31, 2023, the risk-weighted exposures of the DZ BANK banking group and DZ BANK did not reach the threshold and the systemic risk buffer for exposures located in Norway has therefore not been applied to date.

There is a risk that, in the face of higher minimum requirements, it is not possible to obtain the necessary additional own funds needed to comply with the stricter requirements, it is possible to obtain them only at increased cost, or existing risk-weighted assets have to be scaled back. This could reduce profitability and limit the flexibility enjoyed by the management units in the Bank sector and by the DZ BANK Group as a whole in the operation of their business. However, this would only be the case if the capital ratios measured in the future were significantly lower than at present. This scenario is not currently foreseeable.

4.1.2 Switch in interest-rate benchmarks

The publication of US dollar Libor was discontinued by the administrator with effect from June 30, 2023. For the 1-month, 3-month, and 6-month tenors, a non-representative ‘synthetic US dollar Libor’ will be published until September 30, 2024, which can be used on an interim basis for existing business that is difficult to amend (‘tough legacy’).

Most of the outstanding transactions and contracts referencing US dollar Libor as well as measurement and risk calculation methods have been amended by DZ BANK as planned and in keeping with relevant deadlines so that they use SOFR-based interest rates and yield curves instead. Certain individual contracts were switched over after June 30, 2023 but before the end of the current interest period in which the interest rate is still based on US dollar Libor, or alternatively with the help of the synthetic US dollar Libor.

These steps were implemented in 2023, thereby completing the replacement of US dollar Libor at DZ BANK. Risks associated with this process will therefore no longer apply to the DZ BANK Group going forward. Further information on the switch in interest-rate benchmarks is contained in note 85 of the notes to the consolidated financial statements.

4.2 Macroeconomic risk factors

4.2.1 Geopolitical tensions and resulting trade friction

Some regions of the world are experiencing conflict that extends beyond their borders and is resulting in tensions between superpowers. It is impossible to rule out adverse financial effects on the real economy in the European Union (EU) including Germany.

The political implications of the war between **Israel and the terrorist organization Hamas** are much more far-reaching than previous disputes between the two sides. The biggest military, and economic, risk lies in Iran entering the war. That would pit the region's two largest armies against each other, and Israel's close ally, the USA, would in theory be prepared to intervene militarily if necessary. This would have serious consequences for the global economy. Major bottlenecks would be expected in the supply of crude oil and liquefied petroleum gas, which could send global market prices soaring and push up inflation again.

The economic impact of the **war in Ukraine** can be felt globally. Russia's invasion of Ukraine triggered the biggest commodity price shock since 1973 and caused one of the most serious interruptions to wheat supply in a century.

Attention has recently shifted back to the dispute between **China and Taiwan**, in which Taiwan believes it is at constant risk of invasion. The US reiterated its security guarantees for Taiwan in response to a more aggressive stance from the Chinese government and a series of military maneuvers. As China does not recognize Taiwan's independence, this dispute is likely to continue fueling tensions between China and the US. However, it is difficult to gauge China's willingness to escalate the dispute. There is also potential for conflict with other neighboring countries due to China's territorial claims in the South China Sea.

In addition, the protracted dispute on the **Korean peninsula** flares up repeatedly due to North Korea's nuclear weapons program and its many military provocations. Any escalation would directly affect the interests of the superpowers China and the US and could widen into a conflict with global consequences.

The aforementioned geopolitical tensions can **adversely affect global trade**. In addition to the effects of disrupted supply chains described in chapter V.1 of the outlook, there is a risk of a renewed escalation of trade disputes between the US, China, and the EU. This could have negative consequences for the global economy, and for the export-dependent German economy in particular. The sanctions imposed on Russia by western countries in response to the war in Ukraine create further potential for tension between the EU and the US on the one hand and, on the other, countries that either fail to implement these sanctions or only partially impose them, for example China. For companies in Germany, restrictions on global trade could lead to higher import prices and a shortage of input products, and conversely, cause a decline in exports.

The geopolitical tensions particularly affect **credit risk** and **equity investment risk** in the Bank sector and **market risk** in the Insurance sector.

4.2.2 Global economic downturn

In the last few months of 2023, the **Chinese economy** in particular struggled with the weakness in the global environment. Its exports fell sharply year on year, with exports to the US taking an especially big hit. However, that was not just due to weak demand but also because the US has already begun to progressively reduce its reliance on Chinese imports. China's homegrown problems also hampered growth. The Chinese real estate market has been in crisis for a couple of years and investment in housing construction continues to slide. But demand for housing is also not there as there has been a deep loss of confidence among China's population, which has increased its propensity to save. This is not only evident in the real estate market, it is also a key reason why the initial recovery from the COVID-19 pandemic dissipated so quickly and the Chinese economy is now experiencing a period of deflation.

The comparatively high level of stability of the **US economy** is attributable to vast government support programs. The annual US budget deficit is currently running at 7 percent of GDP. Because Congress will not tackle the problem in 2024, which is an election year, the high level of indebtedness is expected to persist. The potential re-election of Donald Trump would probably lead to more tax cuts and thus push up debt even further. A second term of office for Trump would also likely exacerbate existing trade disputes, with negative implications for Germany's export-driven economy. If debt levels remain high in the US, the interest burden could grow and damage market confidence in the long term. This would, in turn, see capital spending fall, dampen market activity, and ultimately bring about a recession in the US. A weakening of the US economy would have far-reaching consequences for the world economy as the US plays a key role in global trade and is an important sales market for many countries. If US demand falls and economic uncertainty rises, other countries could also be impacted by lower exports and economic headwinds, potentially triggering a global recession.

A global recession would in particular affect **credit risk** and **equity investment risk** in the Bank sector and **market risk** in the Insurance sector.

4.2.3 Economic policy divergence in the eurozone

The ongoing **fiscal problems** in Spain, Italy, and Portugal have produced high levels of debt and mounting interest burdens. This is weighing on these countries' budgets and limiting the financial headroom for capital investment and public spending.

The outlook is particularly negative for **Italy**. The return to rising interest rates has pushed up Italy's funding costs substantially. A reduction in the ECB's bond purchases or the absence of progress with bringing down government debt could make it much more difficult for Italy and its banks to access the capital markets.

In the last few years, the **expansionary monetary policy of the ECB**, and particularly its buying programs in various bond segments, largely prevented the structural problems in some European Monetary Union (EMU) member countries from being reflected in the capital markets. This may change as a result of the tightening of monetary policy and the expiry of the pandemic emergency purchase program. The ECB has developed the transmission protection instrument so that it can intervene in the markets in order to counteract any excessive rise in risk premiums. However, if it is unable to do so, the risk premiums of more highly indebted member states could increase sharply, which would make it considerably more difficult for these countries to obtain funding through the capital markets.

The effects of economic policy divergence in the eurozone particularly impact on **market risk** in the Insurance sector.

4.2.4 Economic slowdown in Germany

In 2023, GDP in Germany fell by 0.3 percentage points compared with 2022. The **phase of weakness in the German economy**, with growth at around zero, could well continue for the time being, especially given the dampening effect of elevated interest rates.

There is also a risk that **structural problems**, such as labor shortages and persistently high energy prices, could cause inflation to rise again, and that the resulting inflation may not just be a temporary phenomenon but could remain firmly above the ECB's inflation target for an extended period. This would be particularly problematic if the higher prices, combined with the reduction in manufacturing output, made consumers reluctant to spend and wages simultaneously rose as this would result in a wage/price spiral. This could ultimately lead to a protracted period of stagflation, i.e. a combination of elevated inflation, stagnant output and demand, and rising unemployment. Moreover, the ECB's latitude for tackling inflation is probably more limited than in the past, not least because the pandemic has resulted in further increases in government debt in vulnerable eurozone countries.

Stagflation may impact on **credit risk** and **equity investment risk** in the Bank sector and on **market risk** in the Insurance sector, in particular. As at the reporting date, no stagflation-related increase in these risks was evident.

4.2.5 Correction in real estate markets

The real estate markets are suffering from the jump in prices for construction work and building materials coupled with much higher interest rates. Elevated interest rates are increasing the financial burden on real estate buyers, while inflation is reducing the income that households and investors have available for repayments. Transaction activity is very muted, with moderate declines in market values.

In the commercial real estate market, project developers and property developers are especially affected by the increasing costs of construction and borrowing. With the market for property development and project development work largely at a standstill, there is heightened marketing risk for plots of land. Furthermore, uncertainty persists about the effect of economic trends and inflation and about structural changes in terms of demand for space. This uncertainty particularly affects hotel real estate, office real estate, department stores, shopping malls, and inner-city commercial properties mainly used for retail/wholesale businesses not offering day-to-day essentials.

These developments mainly relate to **credit risk** and **equity investment risk** in the Bank sector, and **market risk** in the Insurance sector.

4.2.6 Unpredictable interest-rate market

Scenarios involving interest-rate cuts

Following **interest-rate hikes** by the Federal Reserve Board (Fed) and the ECB in the past two years, market interest rates have reached levels last seen prior to the financial crisis. Interest rates are having an effect on the rate of inflation, which fell more rapidly than anticipated by the markets at the end of 2023 due to the weak state of the economy and base effects in energy prices. With the central banks' inflation target of 2 percent moving back within reach, interest rates could fall more quickly than expected over the coming year. If interest rates are cut too quickly, there is a risk that inflationary effects, such as a wage/price spiral, may push inflation back up.

A reduction in interest rates could negatively impact on net interest income and net interest margin in the **Bank sector**. In the **Insurance sector**, a fall in interest rates would have a positive valuation effect on R+V's portfolio of interest-bearing exposures in the near term. A renewed period of low interest rates could, in the medium term, pose additional challenges for R+V in its life insurance business in respect of the guaranteed returns that it needs to generate.

Scenarios involving interest-rate hikes

US public debt rose significantly in 2023. This was accompanied by a substantial fall in demand for US government bonds from institutional investors. If this trend continues, the disparity between supply and demand will increase and lead to rising, structurally higher yields. This would exacerbate concerns about a fiscal policy crisis in the US if the budget deficit remains high, and the sustainability of US government debt levels could be called into question. In the event of a renewed interest-rate hike in the US, it is likely that interest rates would also rise in the eurozone, which would call the sustainability of government debt levels of some European countries into question too. Unexpectedly strong **economic growth in Europe** could also lead to an interest-rate hike in the eurozone.

Higher rates of interest could lead to cash outflows in collective building society operations, thereby increasing liquidity risk. In the **Bank sector**, a further rapid rise in interest rates could heighten market risk. Fair value losses on the securities portfolios of BSH and UMH could impact on DZ BANK's capital. In the **Insurance sector**, a rise in interest rates would also result in fair value losses on investments. There would also be a risk that policyholders could increasingly allow existing life insurance contracts to lapse and that new business declines.

4.3 Rating downgrades for DZ BANK

For the entities in the DZ BANK Group, their own credit rating is an important element in any comparison with competitor banks. A downgrade or even just the possibility of a downgrade in the rating for a management unit could have a detrimental effect in all entities in the DZ BANK Group on the relationship with customers and on the sale of products and services.

If DZ BANK's credit rating or the network rating for the Cooperative Financial Network were to be downgraded, this would have a negative impact on DZ BANK's **costs of raising equity and borrowing**. In the event of a rating downgrade, new **liabilities** could also arise, or liabilities dependent on the maintenance of a specific credit rating could become due for immediate payment.

Furthermore, if a rating downgrade were to occur, the management units could face a situation in which they had to furnish additional **collateral** in connection with rating-linked collateral agreements for derivatives (regulated by a credit support annex to an appropriate master agreement for financial futures) or in which they were no longer considered suitable **counterparties for derivative transactions** at all.

If the credit rating for a management unit were to fall out of the range covered by the top four rating categories (investment-grade ratings, disregarding rating subcategories), the operating businesses of all the entities in the DZ BANK Group could be adversely affected. This could also lead to an increase in the **liquidity requirement in relation to derivatives** and to a rise in **funding costs**. The effects of downgrades of long-term ratings are discussed in the chapter covering the measurement of liquidity risk (see chapter VII.6.2.5).

The rating agencies S&P Global Ratings, Moody's, and Fitch Ratings confirmed **DZ BANK's ratings** in 2023. The outlooks for the ratings also remained stable.

5 ESG risks

5.1 Expansion of ESG risk management

ESG risks are defined as events or circumstances in the climate-related and environmental ('E'), social ('S'), or corporate governance ('G') spheres that, if they materialized, would definitely or potentially have an adverse impact on the financial position or financial performance of the DZ BANK Group and on its reputation. ESG risks are also referred to as sustainability risks.

The areas of focus include climate-related and environmental risks resulting from climate change. These risks comprise both physical risks, such as more frequent natural disasters and floods, and transition risks, which can arise particularly as a result of legislative initiatives and changes in consumer behavior. ESG risks primarily have medium- to long-term effects.
The DZ BANK Group does not classify ESG risks as a risk type in their own right. In accordance with the regulatory definitions, it instead views them as drivers of the classic financial and non-financial risk types. Economic, societal, and (geo)political events and conditions are examples of risk factors.

These ESG risk factors are analyzed as part of the **risk inventory check**. This makes it possible to assess each year which potentially material risk factors in the climate-related and environmental, social, and corporate governance spheres the DZ BANK Group is exposed to. The analysis was refined and backed up by quantitative data in 2023. Potentially material ESG risk factors affect the risk types credit risk, operational risk, and reputational risk in the Bank sector and actuarial risk and market risk in the Insurance sector.

ESG risks are **managed** centrally at the level of the DZ BANK Group and on a decentralized basis at the level of the management units. DZ BANK is currently working on implementing various regulatory requirements regarding the management of ESG risks as part of its sustainability umbrella program. The main program requirements are the Guide on climate-related and environmental risks published by the ECB, the EBA's Guidelines on loan origination and monitoring, the delegated regulation on the EU taxonomy, and the ESG disclosure requirements issued by the EBA.

Having participated in the ECB's climate stress test in 2022, DZ BANK has gradually integrated sustainability risks in its internal stress test. With the help of exploratory scenario analyses, the internal stress test examines the impact of physical and transition climate-related risks on the main types of risk affected, taking the channels of impact into account.

DZ BANK also uses an **internal classification tool** based on the 17 sustainable development goals (SDGs) of the United Nations to assess the sustainability of the lending business. The tool measures the positive and adverse SDG impacts of DZ BANK's business from an ESG perspective. This primarily relates to the traditional corporate customer lending business, in which the positive impacts outweigh the adverse impacts overall. Building on this, DZ BANK has set itself the target of ensuring that, by 2026, at least two-thirds of the volume of lending to corporate customers make a positive contribution to at least one of the sustainable development goals.

5.2 Climate-related and environmental risks

The significant risks in relation to the climate and environmental aspect are physical climate-related and environmental risks and transition risks.

5.2.1 Physical climate-related and environmental risks

The physical climate-related and environmental risks may relate to acute events, for example more frequent natural disasters such as flooding, or (chronic) negative effects attributable to long-term climate change.

Losses in the **lending business** may arise, for example, if the recoverability of collateral for loan exposures is adversely impacted by climate events. Further information on the impact on credit risk if physical climate-related and environmental risks were to materialize is provided in chapter 8.3.2.

In the Insurance sector, **non-life actuarial risk** (catastrophe risk) at R+V is the main type of risk that could be significantly affected by physical climate-related risk. Specifically, in any one year, the actual impact from the size and frequency of losses could exceed the forecast impact. Details can be found in chapters VII.16.2 and VII.16.5.

In both the Bank sector and the Insurance sector, physical climate-related risk could also give rise to **operational risk**, for example in connection with the non-availability of buildings or IT systems due to weather or environmental events. This type of security risk is described for the Bank sector in chapter VII.14.5.4 and for the Insurance sector in chapter VII.20.3.3.

5.2.2 Transition risks

Transition risks are a major risk factor. They may occur in connection with the switch to a lower-carbon and more environmentally friendly economy, particularly if business partners in industries with particular relevance to climate change do not transition to the necessary extent or with the necessary speed. The causes of transition risk include political conditions and transformation targets, changes to legislation, changes in consumer preferences, and the accompanying technological shift.

The transition to a low-emission economy is resulting in a changed business and regulatory environment that creates risks for the real economy and could have a negative impact on the financial system and on banks. As a result, climate-related transition risks have a substantial impact on the DZ BANK Group's customers and, in turn, have an indirect impact on the DZ BANK Group too. The medium-term nature of these effects means that they are particularly relevant to the lending business. Furthermore, negative effects from transition risks on the reputation of the DZ BANK Group and DZ BANK cannot be ruled out.

Transition risks are relevant to **credit risk** in the Bank sector (see chapter VII.8.3.2), to **market risk** in the Insurance sector (see chapter VII.17.3.3), and to **reputational risk** (see chapter VII.13.3) and **operational risk** in both sectors.

As a result of transition effects, there is a risk in the **lending business** that the earnings power of corporate finance borrowers could diminish. These effects could lead to a deterioration of the borrowers' credit quality and thus to higher impairment losses. Further information on the significance of climate-related and environmental risks is provided in chapter VII.8.3.2.

5.3 Social risks and corporate governance risks

Social risks could arise due to inadequate standards for upholding DZ BANK Group employees' **basic rights** and for **protecting them against discrimination** or due to inappropriate **customer practices**. If social risks materialize, employees may bring financial claims against entities in the DZ BANK Group or employees may leave who are particularly crucial to the success of the business. Ineffective or disruptive **business processes** may also lead to the loss of key employees. Other potential sources of social risk are unfair, opaque, or improper business practices in respect of customers, especially if these lead to changes in customer behavior or in demand.

Social risk may also have a financial impact in the long term with regard to borrowers and business partners. At individual loan level, social risk in DZ BANK's lending business is assessed as part of the **lending processes**. For example, it is prohibited to maintain business relationships with customers if significant breaches of human rights in their business practices cannot be ruled out.

Potential causes of **corporate governance risks** include **governance structures** that are inadequate or lack transparency. Another possibility is if an entity has an inadequate **code of conduct** or does not have one at all. These shortcomings may weaken employees' confidence in the effectiveness of the entity's senior management and lead to ineffective business processes. A lack of, or only inadequate, measures to tackle **money laundering** and all forms of **corruption** (acceptance of advantages, granting of advantages, active bribery, and passive bribery) constitute further forms of corporate governance risk. They may damage the DZ BANK Group entities' reputation among employees, customers, and business partners.

Corporate governance risks can also arise for **borrowers and business partners** if there are indications that the company in question is not being run in an orderly fashion. The relevant factors include suspected corruption, tax evasion proceedings, and ongoing antitrust proceedings. Similarly to social risk, the risk here lies in the effects of possible judicial proceedings and in a potential drop in revenue as a result of declining demand. The lending process is designed to ensure that transactions with customers that do not satisfy the minimum corporate governance requirements defined by the DZ BANK Group are prohibited. Checks for critical corporate governance aspects, such as in the anti-corruption and competition/tax categories, are conducted and evaluated in a standardized manner.

Social and corporate governance risks alike may have negative effects on the **reputation** of individual entities in the DZ BANK Group or on the DZ BANK Group as a whole.

5.4 Management of ESG risks in the loan origination and monitoring process

ESG risks may adversely impact on – and compound – reputational risk, credit risk, and other risk types. The section below explains how ESG risks are taken into consideration in credit risk processes.

The DZ BANK Group has developed sector-specific, groupwide exclusion criteria for **lending activities** in order to prohibit lending that does not satisfy the minimum ESG requirements or entails a greater reputational risk for the DZ BANK Group. Among the excluded industries are arms trading, arms production (mines, anti-personnel mines, depleted uranium munitions, cluster bombs, and nuclear, biological, and chemical weapons), the sex industry (pornography, prostitution), and controversial gambling. Moreover, project funding for new coal-fired power plants cannot be provided. In addition, it is prohibited to enter into business relationships with customers if significant breaches of human rights or significant breaches of environmental standards in their business practices cannot be ruled out.

DZ BANK applies further sector-specific requirements – **sector criteria** – for certain industries that are particularly vulnerable from a sustainability perspective. These criteria specify the details to be reviewed with reference to international industry-specific conventions, recognized standards and certification, and optimum production processes.

The **ad hoc exclusion criteria committee** supports DZ BANK in the interpretation of exclusion criteria and sector criteria in its lending decisions. Its members are points of contact for the Credit, Corporate Banking, Structured Finance, and Strategy & Group Development divisions and meet weekly.

At DZ BANK, loan applications are systematically assessed against relevant sustainability criteria as part of the credit check process. Factors of relevance to the financing arrangement in question are assessed in relation to social, ethical, and environmental risks using the **ESG checklist**, which is based on the ten principles of the UN Global Compact. The ESG checklist helps to gauge the sustainability efforts of a customer or project and determines the reputational impact on DZ BANK. It also enables possible negative environmental impacts (such as air pollution and water shortages), including on biodiversity, to be identified and mitigated. Various asset-specific ESG checklists exist for corporates, project finance (aligned or not with the Equator Principles), finance companies, and countries. The Equator Principles are a voluntary set of guidelines adopted by banks to ensure compliance with environmental and social standards in project finance.

In addition to gauging the ESG-related reputational impact on DZ BANK, the processes for the extension and monitoring of loans also involve assessing the effects of ESG aspects on customers' credit risk. DZ BANK has used the **ESG credit risk score** for this purpose since October 2023. This score supplements the credit rating for corporate customers by providing an additional relative statement on creditworthiness with respect to ESG risks. The ESG credit risk score encompasses transition and physical environmental risks, social risks, and corporate governance risks, providing a separate subscore for each risk type.

The findings from application of the ESG tools (check against the exclusion criteria and sector criteria, ESG checklist, ESG credit risk score) are factored to varying degrees into the separate **ESG vote** within the loan application process. The aim is to provide decision-makers with an overview of the customer's ESG aspects so that they can be taken into account in the lending decision.

The management of ESG-related risks in **R+V's** investment process is described in chapter VII. 17.3.3.

6 Liquidity adequacy

6.1 Strategy

The management of liquidity adequacy is an integral component of business management in the DZ BANK Group and the management units. Liquidity adequacy is defined as the holding of sufficient liquidity reserves in relation to the risks arising from future payment obligations. It is considered from both an economic and a normative (regulatory) perspective. Whereas the economic perspective takes into account the requirements of the ECB Guide to the ILAAP and MaRisk BA, the normative perspective – while also taking account of the ECB

Guide to the ILAAP – additionally applies the requirements from the CRR and the German national requirements for the implementation of the Capital Requirements Directive (CRD) in KWG.

Economic liquidity adequacy is managed on the basis of the internal liquidity risk model, which takes account of the impact on liquidity of other risks when measuring liquidity risk. Liquidity risk is significantly influenced by the risks that are backed by capital and those that are not backed by capital. In particular, reputational risk is relevant to liquidity risk. The DZ BANK Group fulfills the regulatory liquidity adequacy requirements by managing economic liquidity adequacy.

6.2 Economic perspective

Owing to the close ties between management of economic liquidity adequacy at DZ BANK and that of the DZ BANK Group, the information below on economic liquidity adequacy also applies to DZ BANK. Liquidity risk is a key aspect of economic liquidity adequacy. Liquidity risk at DZ BANK to a large degree determines liquidity risk in the DZ BANK Group.

6.2.1 Definition

Liquidity risk is the risk that cash and cash equivalents will not be available in sufficient amounts to ensure that payment obligations can be met. It is therefore defined as insolvency risk.

6.2.2 Business background and risk strategy

The activities of DZ BANK and the management units BSH, DZ HYP, DZ PRIVATBANK, TeamBank, VR Smart Finanz, and the liquidity subgroup consisting of DZ BANK and DZ HYP (due to the liquidity waiver) are relevant to the level of liquidity risk in the DZ BANK Group.

Specifying and monitoring risk appetite for liquidity risk are key aspects of the liquidity risk strategy, which aims to establish a binding basis for implementing these specifications at operational level.

The operations of the entities in the DZ BANK Group are governed by the principle that liquidity risk must only be assumed if it is in compliance with the **risk appetite** specified by the Board of Managing Directors. Solvency must be ensured, even in times of serious crisis. Risk appetite is expressed by the key figures and internal threshold values in the risk appetite statement and by the stress scenarios defined for risk measurement in the economic perspective within the ILAAP. The stress scenarios also take into account the specific MaRisk BA requirements for the structure of stress scenarios at capital-market-oriented banks.

However, further **extreme scenarios** are not covered by the risk appetite. The risks arising in this regard are accepted and therefore not taken into account in the management of risk. Examples of such scenarios are a run on the bank, i.e. an extensive withdrawal of customer deposits as a result of damage to the reputation of the banking system, or a situation in which all non-collateralized funding sources on money markets completely dry up over the long term, also encompassing transactions with those corporate customers, institutional customers, and customer banks that have close ties to the entities in the DZ BANK Group. On the other hand, the risk of a short-term and complete loss, or the risk of a medium-term and substantial loss, of unsecured funding from institutional investors is not accepted and this risk is the subject of relevant stress scenarios.

Liquidity reserves in the form of liquid securities are held by the entities so that they can remain solvent, even in the event of a crisis. Potential sources of funding in the secured and unsecured money markets are safeguarded by maintaining a broadly diversified national and international customer base. The local cooperative banks also provide a significant source of funding.

DZ BANK aims to ensure that the liquidity risk strategy is consistent with the **business strategies**. To this end, the liquidity risk strategy is reviewed at least once a year with due regard to the business strategies and adjusted as necessary.

6.2.3 Risk factors

The following factors, alone or in combination with each other, could lead to an increase in liquidity risk, adversely affect financial position and, in an extreme case, cause the insolvency of DZ BANK:

- Funding is withdrawn but cash nevertheless still flows out when legally due (**follow-up funding risk**).
- Derivatives result in greater collateral requirements that involve cash outflows (**collateral risk**).
- Changes in the fair value of financial instruments mean that less liquidity can be generated (**fair value risk**).
- Cash is paid out earlier than expected because drawing rights are exercised (**drawdown risk**).
- Cash outflows are earlier than expected or cash inflows later than expected because termination rights are exercised (**termination risk**).
- New business is entered into on a significant scale, resulting in cash outflows (**new business risk**).
- Products are repurchased on a significant scale, resulting in cash outflows (**repurchase risk**).
- The liquidity requirement to ensure intraday payment obligations can be satisfied is greater than expected (**intraday risk**).
- There has been a negative impact on opportunities for funding in foreign currencies, for example the generation of currency-related liquidity through currency swaps (**foreign currency funding risk**).

These and other events are incorporated into the calculation of liquidity risk as **stress scenarios** (see chapter VII.6.2.5).

6.2.4 Organization, responsibility, and risk reporting

Organization and responsibility

The strategic guidelines for the management of liquidity risk by the entities in the DZ BANK Group are established by the **Group Risk and Finance Committee**. At the level of DZ BANK, this is the responsibility of the **Asset/Liability Committee**.

Liquidity risk control in the DZ BANK Group is coordinated by the Group Risk Control working group and carried out in Risk Controlling at DZ BANK independently of the units that are responsible for liquidity risk management. The risk data calculated by the subsidiaries on the basis of intragroup guidelines is aggregated to provide a group perspective.

Risk reporting

Liquidity up to 1 year and structural liquidity of 1 year or more are reported by liquidity risk control at DZ BANK on a daily basis to the **members of the Board of Managing Directors** of DZ BANK responsible for the Group Treasury and Group Risk Controlling divisions. The **Board of Managing Directors** receives a monthly report on liquidity risk. The DZ BANK Group Treasury division and the units in the subsidiaries responsible for the management of liquidity risk also receive detailed daily information showing the contribution from each individual position to the aggregate position.

The **Group Risk and Finance Committee** receives a quarterly report on the liquidity risk of the DZ BANK Group and the individual management units. The entities in the DZ BANK Group have their own corresponding reporting procedures that help to manage and monitor liquidity risk at individual entity level.

Group Treasury is informed on a daily basis of the largest providers of liquidity in the unsecured money markets. This is reported to the **Asset/Liability Committee** and the **Board of Managing Directors** on a monthly basis. These reports make a distinction between customers and banks, ensuring that any possible concentration risk as regards sources of liquidity can be clearly identified at an early stage.

6.2.5 Risk management

Measurement of liquidity risk

DZ BANK uses an **internal risk model** to determine liquidity risk for the DZ BANK Group and DZ BANK over a time horizon of 1 year. Using this model, four stress scenarios and one risk scenario are simulated on a daily basis. In addition to DZ BANK, all other entities in the DZ BANK Group that are material in terms of liquidity risk are integrated into the groupwide measurement of this risk.

A **minimum liquidity surplus** figure is calculated for each scenario. This figure quantifies the minimum surplus cash that would be available if the scenario were to materialize suddenly within the next financial year. To carry out this calculation, cumulative cash flow (forward cash exposure) is compared against available liquidity reserves (counterbalancing capacity) on a day-by-day basis. The minimum liquidity surplus expresses economic liquidity adequacy. **Forward cash exposure** includes both expected and unexpected payments.

The **counterbalancing capacity** includes balances on nostro accounts, liquid securities, and unsecured funding capacity with customers, banks, and institutional investors. By including the counterbalancing capacity, the calculation of the minimum liquidity surplus already takes into account the effect on liquidity of the measures that could be implemented to generate liquidity in each scenario. These measures include collateralized funding of securities in the repo market.

DZ BANK's internal liquidity risk model is validated using an **appropriateness test** independently of the organizational unit responsible for developing the model. Furthermore, the model is adjusted in line with changes in the market, products, and processes. Validation is carried out for each entity in the DZ BANK Group and aggregated at group level.

Liquidity risk stress tests

Stress tests are conducted for the forward cash exposure and for the counterbalancing capacity using the following four scenarios with defined limits: downgrading, corporate crisis, market crisis, and combination crisis. The stress scenarios are defined as follows:

– **Downgrading**: Long-term ratings awarded by Standard & Poor's, Moody's, and Fitch Ratings to one or more entities in the DZ BANK Group downgraded by one notch. The downgrade is triggered by a deterioration in profitability or in the earnings forecast or by a preceding loss of confidence among customers and banks.

– **Corporate crisis**: Serious entity-specific crisis, for example caused by reputational damage. The main consequences of this scenario could be a considerable negative impact on customer behavior and the downgrading by three notches of the long-term ratings awarded by all of the aforementioned rating agencies.

– **Market crisis**: Turmoil in global money and capital markets. The primary feature of this scenario is a sudden, sharp fall in the value of assets traded in these markets. The scenario assumes, for example, a loss of confidence among money market players, which could lead to a liquidity squeeze.

– **Combination crisis**: Analysis of a combination of bank-specific and market-related factors. However, it does not constitute a mere aggregation of the two stress scenarios arising from a market crisis and a corporate crisis. Instead, the interaction between the two scenarios is taken into account. The combination crisis assumes that the financial sector would be particularly badly affected. The underlying scenario is also based on a deterioration in the reputation of the entities in the DZ BANK Group. It assumes there would only be very limited access to unsecured funding from customers, banks, and institutional investors over the forecast period of 1 year.

The stress scenario with the lowest minimum liquidity surplus is deemed to be the **squeeze scenario**. Economic liquidity adequacy is determined as the amount of the minimum liquidity surplus in the squeeze scenario.

Further stress scenarios in addition to the scenarios with defined limits are analyzed, and a **reverse stress test** is carried out and reported on a monthly basis. The reverse stress test shows which stress events (changes in risk factors) could still occur without liquidity falling below the limit in a subsequent liquidity risk measurement and triggering the need for a business model adjustment. In addition, **adverse stress tests** are carried out to provide a forward-looking assessment of liquidity risk. They involve analyzing whether the DZ BANK Group would be able to ensure an adequate level of liquidity even in the event of exceptional, but plausible, developments over a medium-term horizon. The adverse stress test scenarios underlying this forecast are also used in ICAAP stress testing.

Management of limits for liquidity risk

Liquidity risk is monitored and managed with the aim of ensuring economic liquidity adequacy at every measurement date. This is based on the minimum liquidity surplus calculated for the four stress scenarios with defined limits. The Board of Managing Directors has set, at the level of the **DZ BANK Group**, a limit for liquidity risk (€1.0 billion; December 31, 2022: €1.0 billion) and an internal observation threshold (€5.0 billion; December 31, 2022: €4.0 billion) that is higher than the limit.

The Board of Managing Directors has also specified a limit for each management unit. The limit for both **DZ BANK** and the **liquidity subgroup** was €0.86 billion as at December 31, 2023 (December 31, 2022: €0.7 billion). As at January 1, 2023, an internal observation threshold of €1.86 billion was set for both of them for the first time.

The limits and the observation thresholds are **monitored** by the liquidity risk control function at DZ BANK both at group level and also for the management units.

The limit system aims to ensure that the DZ BANK Group remains solvent even in serious stress scenarios. **Emergency liquidity plans** are in place so that the group is able to respond to crisis events rapidly and in a coordinated manner. The emergency plans are revised annually.

Liquidity risk mitigation

Within liquidity management activities, measures to reduce liquidity risk are initiated by the treasury units of the subsidiaries. Active liquidity risk management is made possible by holding instruments in the form of cash and liquid securities, and by managing the maturity profile of money market and capital market transactions.

Liquidity transfer pricing system

The DZ BANK Group aims to use liquidity – which is both a resource and a success factor – in line with risks. Liquidity costs, benefits, and risks are allocated among the entities in the DZ BANK Group based on the liquidity transfer pricing system using internal prices charged by the units generating liquidity and paid by those consuming liquidity. Care is taken to ensure that the transfer prices are consistent with risk measurement and risk management.

Transfer prices are set for all significant products. The transfer pricing system takes into account the holding period and market liquidity of the products and has an impact on risk/return management.

6.2.6 Quantitative variables in liquidity risk

Liquid securities

The available liquid securities have a significant influence on the level of the minimum liquidity surplus. Liquid securities are a component of the **counterbalancing capacity** and are largely held in the portfolios managed by DZ BANK's Group Treasury and Capital Markets Trading divisions or in the portfolios of the treasury units at the subsidiaries of DZ BANK. Only bearer bonds are counted as liquid securities.

Liquid securities comprise highly liquid securities that are suitable for collateralizing funding in private markets, securities eligible as collateral for central bank loans, and other securities that can be liquidated in the 1-year forecast period that is relevant for liquidity risk.

Securities are only eligible as liquid securities if they are not pledged as collateral, e.g. for secured funding. Securities that have been borrowed or taken as collateral for derivatives business or in connection with secured funding only become eligible when they are freely transferable. Eligibility is recognized on a daily basis and also takes into account factors such as restrictions on the period in which the securities are freely available.

Liquid securities represent a large proportion of the counterbalancing capacity and make a major contribution to maintaining solvency in the stress scenarios with defined limits at all times during the relevant forecast period. In the first month, which is a particularly critical period in a crisis, liquid securities are almost exclusively responsible for maintaining solvency in the stress scenarios with defined limits.

Fig. VII.8 shows the liquidity value of the liquid securities that would result from secured funding or if the securities were sold.

As at December 31, 2023, the total liquidity value at the level of the **DZ BANK Group** was €37.3 billion (December 31, 2022: €35.4 billion). The total liquidity value attributable to **DZ BANK** as at December 31, 2023 was €26.9 billion (December 31, 2022: €26.6 billion). The increase in liquid securities eligible as collateral for central bank loans mainly resulted from early repayment of targeted longer-term refinancing operations (TLTRO), which led to a substantial reduction in the volume of pledged collateral. The decline in liquid securities eligible for GC Pooling resulted from a reduction in reverse repo transactions.

Unsecured short- and medium-term funding

Other than liquid securities, the main factors determining the minimum liquidity surplus are the availability and composition of the sources of funding.

The DZ BANK Group has a diversified funding base for operational liquidity. A considerable portion is accounted for by money market activities resulting from the cash-pooling function with the **local cooperative banks**. Under these arrangements, the cooperative banks can invest excess liquidity with DZ BANK at any time. Conversely, if the cooperative banks need liquidity, they can obtain it from DZ BANK. Overall, this regularly results in a liquidity surplus in the DZ BANK Group and at DZ BANK, which provides one of the main bases for short-term funding in the unsecured money markets.

FIG. VII.8 – LIQUID SECURITIES

	DZ BANK Group		DZ BANK	
€ billion	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022
Liquid securities eligible for GC Pooling (ECB Basket)[1]	**15.8**	22.3	**9.9**	17.4
Securities in own portfolio	20.5	16.0	12.0	8.4
Securities received as collateral	5.9	17.4	5.9	17.4
Securities provided as collateral	-10.6	-11.1	-8.0	-8.4
Liquid securities eligible as collateral for central bank loans	**17.9**	9.1	**13.6**	5.5
Securities in own portfolio	18.0	16.7	13.2	11.8
Securities received as collateral	3.5	4.1	3.5	4.1
Securities provided as collateral	-3.6	-11.7	-3.2	-10.3
Other liquid securities	**3.7**	3.9	**3.5**	3.7
Securities in own portfolio	3.3	3.7	3.0	3.4
Securities received as collateral	0.6	0.3	0.6	0.3
Securities provided as collateral	-0.2	-0.1	-0.1	-0.1
Total	**37.3**	**35.4**	**26.9**	**26.6**
Securities in own portfolio	41.8	36.4	28.3	23.6
Securities received as collateral	9.9	21.8	9.9	21.8
Securities provided as collateral	-14.4	-22.9	-11.3	-18.7

1 GC = general collateral, ECB Basket = eligible collateral for ECB funding.

Corporate customers and **institutional customers** are another important source of funding for covering operational liquidity requirements in the DZ BANK Group. In the context of liquidity risk, corporate customers are those customers that are not banks and are not classified as institutional customers.

For funding purposes, the management units also issue **money market products based on debt certificates** under a standardized groupwide multi-issuer euro commercial paper program through the offices and branches in Frankfurt am Main, New York, Hong Kong, London, and Luxembourg. DZ BANK also runs a US-dollar-denominated commercial paper program for Frankfurt am Main. Key repo and securities lending activities, together with the collateral management process, are managed centrally in DZ BANK's Group Treasury division.

Funding on the **interbank market** is not strategically important, either to the DZ BANK Group or to DZ BANK.

The range of funding sources in the unsecured money markets is shown in Fig. VII.9.

FIG. VII.9 – UNSECURED SHORT-TERM AND MEDIUM-TERM FUNDING

	DZ BANK Group		DZ BANK	
€ billion	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022
Deposits	**99.7**	98.7	**85.3**	84.2
Deposits of local cooperative banks	59.7	57.3	59.1	56.6
Current account deposits of other customers	40.0	41.4	26.1	27.6
Money market borrowing	**59.8**	57.1	**57.9**	54.5
Central banks, interbank, and customer banks	7.8	9.4	7.8	9.3
Corporate customers and institutional customers	36.2	33.6	36.0	32.8
Certificates of deposit/commercial paper	15.8	14.1	14.1	12.3

The changes in the composition of the sources of funding compared with December 31, 2022 arose because customers and investors were more focused on diversification than in the previous year due to the interest-rate situation. The changes included reallocations from current account deposits to fixed-term deposits, which were made in light of ECB monetary policy measures.

Further information on liquidity management and funding can be found in chapter II.5 of the business report.

The **maturity analysis of contractual cash inflows and cash outflows** is set out in note 87 of the notes to the consolidated financial statements. However, the cash flows in these disclosures are not the same as the expected and unexpected cash flows used for internal liquidity risk management.

6.2.7 Risk position

Economic liquidity adequacy is assured if none of the four stress scenarios with defined limits exhibit a negative value for the key risk indicator 'minimum liquidity surplus'. Fig. VII.10 shows the results of measuring liquidity risk. The results are based on a daily calculation and comparison of forward cash exposure and counterbalancing capacity. The values reported are the values that occur on the day on which the liquidity surplus calculated over the forecast period of 1 year is at its lowest point.

FIG. VII.10 – LIQUIDITY UP TO 1 YEAR IN THE STRESS SCENARIOS WITH DEFINED LIMITS: MINIMUM LIQUIDITY SURPLUSES FOR THE DZ BANK GROUP

	Forward cash exposure		Counterbalancing capacity		Minimum liquidity surplus[1]	
€ billion	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022
Downgrading	-43.6	-39.1	90.6	67.8	46.9	28.7
Corporate crisis	-45.6	-30.2	64.1	44.5	18.5	14.3
Market crisis	-47.9	-32.9	78.9	57.6	31.0	24.7
Combination crisis	-47.4	-31.8	72.1	51.4	24.7	19.6

1 The values with an orange background are the minimum liquidity surplus in the squeeze scenario.

The reduction in the forward cash exposure and the increase in the counterbalancing capacity mainly resulted from the early repayment of TLTRO.

The liquidity risk value measured for the **DZ BANK Group** as at December 31, 2023 for the stress scenario with defined limits with the lowest minimum liquidity surplus (squeeze scenario) was €18.5 billion (December 31, 2022: €14.3 billion). The liquidity risk value attributable to **DZ BANK** as at December 31, 2023 was €4.8 billion (December 31, 2022: €4.2 billion). The liquidity risk value attributable to the liquidity subgroup as at December 31, 2023 was €6.8 billion (December 31, 2022: €7.8 billion). The change in the minimum liquidity surplus was largely due to a multitude of individual changes in the underlying exposures on which the calculation of the minimum liquidity surplus is based.

The minimum liquidity surplus for the DZ BANK Group, DZ BANK, and the liquidity subgroup exceeded the **external minimum targets** laid down by the supervisory authorities, the **internal observation thresholds**, and the **internal minimum thresholds**. The target/threshold values are shown in Fig. VII.3 and Fig. VII.4.

The minimum liquidity surplus as at December 31, 2023 for all management levels – the DZ BANK Group, DZ BANK, and the liquidity subgroup – was positive in the stress scenarios with defined limits. This is due to the fact that the counterbalancing capacity was above the cumulative cash outflows on each day of the defined forecast period in every scenario, which indicates that the cash outflows assumed to take place in a crisis could be comfortably covered. The limits for the minimum liquidity surplus at all management levels were thus adhered to.

The rise in interest rates during the reporting year led to significant movements in the market for interest-rate derivatives and to funding changes, making the DZ BANK Group's minimum liquidity surplus more volatile. **A further unexpected rise in interest rates**, which is described as a risk factor affecting all types of risk in chapter VII.4.2.6, could potentially result in the continuation in 2024 of the effects described for 2023 and may even cause them to become more pronounced.

6.2.8 Possible impact from crystallized liquidity risk

One of the main operating activities of the management units is to make long-term liquidity available to their customers for different maturity periods and in different currencies, for example in the form of loans. The units generally organize their funding to match these transactions that tie up liquidity. Any funding needs that are not covered by the local cooperative banks are met by obtaining additional funding in the money and capital markets, with the deposit base from money market funding reducing the need for long-term funding. When funding matures, it is therefore possible that the replacement funding required to fund transactions with longer maturities has to be obtained at **unfavorable terms and conditions**.

The entities in the DZ BANK Group are also exposed to the risk that the minimum liquidity surplus will fall below the limit. If the minimum liquidity surplus were to fall below the limit for an extended period, the possibility of **reputational damage and a rating downgrade** could not be ruled out.

Crystallization of liquidity risk causes an unexpected **reduction in the liquidity surplus**, with potential negative consequences for DZ BANK's financial position and enterprise value. If a crisis were to occur in which the circumstances were more serious or the combination of factors were significantly different from those assumed in the stress scenarios, there would be a risk of **insolvency**.

6.3 Normative perspective

6.3.1 Regulatory framework

The normative perspective is based on the liquidity ratios required under Basel Pillar 1. Its objective is to assess the DZ BANK banking group's ability to comply with regulatory minimum requirements (plus an internally specified management buffer). Internal liquidity risk management is supplemented by the liquidity coverage ratio (LCR) and the net stable funding ratio (NSFR) calculated in line with the CRR requirements.

6.3.2 Organization, responsibility, and reporting

The **Group Financial Services** division calculates the liquidity ratios reported for supervisory purposes resulting from the CRR and Commission Delegated Regulation (EU) 2015/61 for the liquidity subgroup and, using the corresponding values for the management units, for the DZ BANK banking group.

Both the **Asset/Liability Committee** and the **Board of Managing Directors** are notified of the LCR and the NSFR each month.

6.3.3 Liquidity coverage ratio

The liquidity coverage ratio has a short-term focus and is intended to ensure that institutions can withstand a liquidity stress scenario lasting 30 days. This KPI is defined as the ratio of available liquid assets (liquidity buffer) to total net cash outflows in defined stress conditions over the next 30 days. DZ BANK reports the LCR of the liquidity subgroup and that of the banking group, calculated in accordance with the CRR in conjunction with Commission Delegated Regulation (EU) 2015/61, to the supervisory authority on a monthly basis.
The LCR figure for the **DZ BANK banking group** and **DZ BANK** (including DZ HYP) can be found in Fig. VII.11.

FIG. VII.11 – LIQUIDITY COVERAGE RATIOS AND THEIR COMPONENTS

	DZ BANK banking group		DZ BANK (including DZ HYP)[1]	
	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022
Total liquidity buffer (€ billion)	125.6	122.0	105.8	103.7
Total net liquidity outflows (€ billion)	86.1	83.6	74.0	72.6
LCR (percent)	**145.8**	**145.9**	**143.1**	**142.7**

1 DZ BANK and DZ HYP form a liquidity subgroup pursuant to article 8 CRR.

The slight decrease in the LCR for the **DZ BANK banking group** from 145.9 percent as at December 31, 2022 to 145.8 percent as at December 31, 2023 resulted from the LCR's greater sensitivity in respect of the increased net liquidity outflows. This effect outweighs the greater increase in the liquidity buffer and the associated increase in excess liquidity cover (calculated by deducting the net liquidity outflows from the liquidity buffer).

The expansion of the liquidity buffer was mainly due to the growth of balances with central banks on the back of higher volumes of unsecured funding. In particular, deposits from banks in the Cooperative Financial Network and corporate customers increased, which – given their low outflow factors of 25 percent and 40 percent respectively compared with the associated rise in the liquidity buffer – led to a lower rise in weighted net liquidity outflows. As the LCR is more sensitive to changes in liquidity outflows than to changes in the liquidity buffer, the two opposing effects resulted in an overall reduction in the KPI.

As at the reporting date, the **external minimum target** laid down by the supervisory authorities, the **internal observation threshold**, and the **internal minimum threshold** for the LCR were exceeded for both the DZ BANK banking group and DZ BANK (including DZ HYP). The target/threshold values are shown in Fig. VII.3 and Fig. VII.4.

6.3.4 Net stable funding ratio

The net stable funding ratio has a long-term focus and is intended to identify mismatches between the maturity structures of assets-side and liabilities-side business. The ratio is the amount of available stable funding (equity and liabilities) relative to the amount of required stable funding (assets-side business). The funding sources are weighted according to their degree of stability and assets are weighted according to their degree of liquidity based on factors defined by the supervisory authority.

The NSFR calculated for the **DZ BANK banking group** and **DZ BANK** (including DZ HYP) is shown in Fig. VII.12.

Excess cover in relation to the NSFR is the difference between the available stable funding and the required stable funding.

The rises in the NSFR for the DZ BANK banking group and DZ BANK (including DZ HYP) are attributable to an increase in excess cover. The greater excess cover is mainly the result of an increase in available stable funding sources, which in turn is chiefly due to a higher volume of deposits from the Cooperative Financial Network and the privileged inclusion of certain own issues. The overall rise was partly offset by an increase in funding requirements relating to loans and advances and the early repayment of outstanding TLTRO tranches.

FIG. VII.12 – NET STABLE FUNDING RATIO AND ITS COMPONENTS

	DZ BANK banking group		DZ BANK (including DZ HYP)[1]	
	Dec. 31, 2023	Dec. 31, 2022	**Dec. 31, 2023**	Dec. 31, 2022
Available stable funding (weighted equity and liabilities; € billion)	287.9	269.5	212.7	199.6
Required stable funding (weighted assets; € billion)	227.6	220.3	178.7	176.1
Excess cover/shortfall (€ billion)[2]	60.3	49.2	34.0	23.5
NSFR (percent)	**126.5**	**122.3**	**119.0**	**113.4**

1 DZ BANK and DZ HYP form a liquidity subgroup pursuant to article 8 CRR.
2 Excess cover = positive values, shortfall = negative values.

As at the reporting date, the **external minimum target** laid down by the supervisory authorities, the **internal observation threshold**, and the **internal minimum threshold** for the NSFR were exceeded for both the DZ BANK banking group and DZ BANK (including DZ HYP). The target/threshold values are shown in Fig. VII.3 and Fig. VII.4.

7 Capital adequacy

7.1 Strategy, organization, and responsibility

7.1.1 Strategy

The management of capital adequacy is an integral component of business management in the DZ BANK Group and the management units. Capital adequacy is defined as the holding of sufficient capital to cover the risks assumed by the business. It is considered from both an economic and a normative perspective. Whereas the economic perspective takes into account the requirements of the ECB Guide to the ICAAP and MaRisk BA, the normative perspective – while also taking account of the ECB Guide to the ICAAP – additionally applies the requirements from the CRR and the German national requirements for the implementation of the CRD.

The aim of the ICAAP is to ensure that, from two complementary perspectives (the economic and the normative perspectives), **capital resources are adequate** for an institution to be able to continue operating. Both perspectives are equally valid management approaches. They are integrated mainly on the basis of the risk inventory check, which the management uses to determine and specify the main risks in the DZ BANK Group.

All management units are included in the groupwide management of capital adequacy. Management of economic and normative capital adequacy aims to ensure that the assumption of risk is consistent with the capital resources of the DZ BANK Group, the DZ BANK financial conglomerate, and the DZ BANK banking group.

7.1.2 Organization and responsibility

The **Board of Managing Directors of DZ BANK** defines the corporate objectives of the DZ BANK Group and DZ BANK in terms of both risks and returns and, in managing the risk profile, strives for an appropriate ratio between risk and risk coverage potential. DZ BANK is responsible for risk and capital management, and for compliance with capital adequacy at group level.

The management of economic and normative capital adequacy is based on internal target values. To avoid any unexpected adverse impact on **target values and capital ratios** and ensure that any changes in risk are consistent with corporate strategy, groupwide economic limits and risk-weighted assets are planned on an annual basis as part of the **strategic planning process**. This process results in a requirements budget for the economic and regulatory capital needed by the group. Any corresponding measures to raise capital are approved by the Asset/Liability Committee or recommended to the Board of Managing Directors for approval. The implementation of the measures is then coordinated by **Group Treasury** at DZ BANK.

At DZ BANK, the **Group Finance** division is responsible for monitoring and reporting on regulatory capital adequacy. Regular monitoring is designed to ensure that the applicable minimum regulatory requirements for solvency are met at every reporting date. Monitoring takes place monthly for the DZ BANK financial conglomerate, the DZ BANK banking group, and DZ BANK, and at least quarterly for the R+V Versicherung AG insurance group. The Board of Managing Directors and the supervisory authority are notified of the results within the monthly reports on capital management.

7.2 Economic perspective

Owing to the close ties between the management of economic capital adequacy at DZ BANK and that of the DZ BANK Group, the information below also applies to DZ BANK.

7.2.1 Measurement methods

The **economic perspective** is an internally defined management perspective aimed at ensuring that all of the DZ BANK Group's material capital risks are fully backed by capital plus an internally specified management buffer. The economic perspective is based on the assumption that an institution will continue to operate as a going concern.

The economic perspective is based on internal risk measurement methods that take into account all types of risk that are material with regard to capital adequacy. The methods selected ensure that risk capital management is integrated across the group.

In the **risk-bearing-capacity analysis**, the risk capital requirement is compared with the available internal capital. The risk capital requirement is determined by aggregating the capital required for the various risk types relevant to the DZ BANK Group.

Available internal capital is the economic value of equity. The equity used to determine available internal capital is the equity recognized on the balance sheet as calculated in accordance with the relevant accounting standards, plus/minus reserves and liabilities in respect of assets and liabilities, measured at present value. Adjustments are also made, in particular the deduction of components of additional Tier 1 capital.

The available internal capital is determined as follows:
- The available internal capital of the **Bank sector** is calculated on the basis of the IFRS data in accordance with regulatory financial reporting. In this process, R+V is not fully consolidated but taken into account using the equity method.
- The available internal capital of the **Insurance sector** is based on the own funds of the R+V Versicherung AG insurance group in accordance with Solvency II.
- The available internal capital from the two sectors is combined to produce the available internal capital of the DZ BANK Group. During this process, the effects of consolidation between the Bank and Insurance sectors are taken into account, resulting in a reduction in the available internal capital at group level.

The available internal capital is reviewed on a quarterly basis and, to some extent, on a monthly basis.

The Board of Managing Directors determines the risk capital requirement **limits** for the year on the basis of the available internal capital. If necessary, the limits can be adjusted during the year, e.g. if economic conditions change.

The purpose of the **capital buffer** is to cover the lack of precision in some areas of risk measurement. A distinction is made between centralized and decentralized capital buffer requirements. Decentralized capital buffer requirements are managed within the limits for the individual risk types, whereas the centralized capital buffer is managed on the basis of a limit covering all sectors and risk types.

R+V uses two measures defined by the supervisory authorities – the transitional measure on technical provisions and the volatility adjustment – for individual personal insurance companies. The transitional measure on technical provisions is a time-limited measure designed to make it easier for insurance companies to transition from Solvency I to the current regulatory regime, Solvency II. The volatility adjustment, which can be used indefinitely, prevents a brief phase of heightened market volatility from affecting the valuation of long-term insurance guarantees. Both measures have a positive impact on economic capital adequacy.

7.2.2 Traffic light system

Economic capital adequacy is monitored and managed using a traffic light system based on the ratio of available internal capital to aggregate risk (expressed as a percentage). The switch from green to amber in the traffic light system (**amber threshold**) is set at the internal threshold value for economic capital adequacy specified in the risk appetite statement, which in 2023 was unchanged compared with the previous year at 120.0 percent. The amber threshold serves as an early-warning indicator. The **red threshold**, i.e. the borderline between amber and red in the traffic light system, was set at 110.0 percent in the year under review, again unchanged compared with 2022. The threshold values for economic capital adequacy are reviewed annually and adjusted if necessary.

7.2.3 Risk-bearing capacity

Retrospective recalculation of the overall solvency requirement

The annual recalculation of the overall solvency requirement took place as at December 31, 2022 owing to scheduled changes to the parameters for the risk measurement procedures carried out in the second quarter of 2023 for the Insurance sector on the basis of R+V's 2022 consolidated financial statements and the updating of actuarial assumptions. The recalculation reflects updated measurements of insurance liabilities based on annual actuarial analyses and updates to parameters in the risk capital calculation. Because of the complexity and the amount of time involved, the parameters are not completely updated in the in-year calculation and an appropriate projection is made.

The recalculation led to changes in the available internal capital, the key risk indicators at the level of the DZ BANK Group, and economic capital adequacy. The figures as at December 31, 2022 given in this risk report have been restated accordingly and are not directly comparable with the figures in the 2022 risk report.

Available internal capital and limit

The DZ BANK Group's **available internal capital** as at December 31, 2023 stood at €32,290 million. The comparable figure as at December 31, 2022 was €30,879 million.

The **limit** derived from the available internal capital was specified at €19,698 million as at December 31, 2023 (December 31, 2022: €22,215 million).

As at December 31, 2023, **aggregate risk** was calculated at €15,102 million. The comparable figure as at December 31, 2022 was €13,886 million. The increase was primarily driven by higher market risk and business risk in the Bank sector.

Economic capital adequacy

As at December 31, 2023, the **economic capital adequacy ratio** for the DZ BANK Group was calculated at 213.8 percent. The comparable figure as at December 31, 2022 was 222.4 percent. As at the reporting date, the ratio was above the **external minimum target**, the **internal observation threshold**, and the **internal minimum threshold**. The target/threshold values are shown in Fig. VII.3.

In the case of the risk types in the Bank sector and Insurance sector, the risk capital requirement also contains any decentralized **capital buffer requirement** that has been assigned. To simplify matters, only the terms 'risk capital requirement' and 'overall solvency requirement' will be used in the remainder of this risk report. These include the decentralized capital buffer requirement.

Fig. VII.13 provides an overview of economic capital adequacy and its components.

The limits and risk capital requirements for the **Bank sector**, broken down by risk type, are shown in Fig. VII.14.

FIG. VII.13 – ECONOMIC CAPITAL ADEQUACY OF THE DZ BANK GROUP

	Dec. 31, 2023	Dec. 31, 2022
Available internal capital (€ million)[1]	32,290	30,879
Limit (€ million)	19,698	22,215
Aggregate risk (€ million)[1]	15,102	13,886
Economic capital adequacy (percent)[1]	**213.8**	**222.4**

1 Value as at December 31, 2022 after recalculation of R+V's overall solvency requirement. Different values were stated in the 2022 risk report.

FIG. VII.14 – LIMITS AND RISK CAPITAL REQUIREMENTS IN THE BANK SECTOR

	Bank sector				DZ BANK			
	Limit		Risk capital requirement		Limit		Risk capital requirement	
€ million	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022
Credit risk	4,988	6,387	3,971	3,766	2,760	2,854	2,359	2,254
Equity investment risk	1,281	1,230	998	997	795	767	664	632
Market risk	6,470	6,680	4,169	3,730	3,000	3,175	1,757	1,481
Technical risk of a home savings and loan company[1]	820	785	730	698				
Business risk[2]	450	280	363	43	410	235	335	43
Operational risk	1,148	1,112	978	966	651	625	550	554
Total (after diversification)	**14,218**	**15,380**	**10,471**	**9,485**				

Not relevant

1 Including business risk and reputational risk of BSH.
2 Apart from that of BSH, reputational risk is contained in the risk capital requirement for business risk.

Fig. VII.15 sets out the limits and overall solvency requirements for the **Insurance sector**, broken down by risk type, and includes policyholder participation features. The definition of the limits and determination of overall solvency requirements take into account the ability to offset deferred taxes against losses (which arises where deferred tax liabilities can be eliminated in the loss scenario). Diversification effects between the risk types are also taken into consideration. Owing to these effects of correlation, the overall solvency requirement and limit for each risk type are not cumulative.

FIG. VII.15 – LIMITS AND OVERALL SOLVENCY REQUIREMENTS IN THE INSURANCE SECTOR

	Limit		Overall solvency requirement	
€ million	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022[1]
Life actuarial risk[2]	1,060	1,200	946	1,060
Health actuarial risk	285	300	253	167
Non-life actuarial risk	1,900	3,000	1,707	1,878
Market risk	3,695	3,880	3,376	3,415
Counterparty default risk	245	350	219	224
Operational risk	700	1,000	629	598
Risks from entities in other financial sectors	225	180	210	135
Total (after diversification)	**4,800**	**6,155**	**4,241**	**3,930**

1 Values after recalculation of the overall solvency requirement. Different values were stated in the 2022 risk report.
2 Reputational risk is implicitly included in the overall solvency requirement for life actuarial risk (lapse risk).

In addition to the figures shown in Fig. VII.14 and Fig. VII.15, the aggregate risk includes **a centralized capital buffer requirement across all types of risk**, which was calculated at €391 million as at December 31, 2023 (December 31, 2022: €470 million). The corresponding **limit** was unchanged year on year at €680 million. The decrease in the centralized capital buffer requirement was predominantly due to the annual adjustment of the measurement of the longevity risk resulting from provisions for pensions and other post-employment benefits in the Bank sector to the higher discount rate.

7.2.4 Possible impact from crystallized risk covered by capital

If risk were to materialize and associated losses be incurred, there would be a risk that the risk capital requirement would exceed the available internal capital and the DZ BANK Group would thus **miss its economic capital adequacy target**. However, this situation could also occur with an increase in risk arising from heightened market volatility or as a consequence of changes in the business structure. Additional or more stringent regulatory requirements could also have a negative impact on the economic capital adequacy of the DZ BANK Group.

In a situation in which the economic capital adequacy of the DZ BANK Group could not be guaranteed, there would be insufficient capital available to meet the group's own standards with regard to the coverage of risk. If there is also insufficient capital to meet the level of protection demanded by the supervisory authority, this authority could initiate action, which in extreme cases could lead to the **resolution** of DZ BANK or its subsidiaries.

7.3 Normative perspective

7.3.1 Regulatory framework

The normative perspective is based on the capital ratios laid down by the supervisory authorities. It comprises three management dimensions: monitoring of actual regulatory KPIs, capital planning, and adverse stress tests.

Whereas the monitoring of actual and projected figures, together with capital planning, in the baseline scenario focuses on the current regulatory ratios and their changes in probable scenarios, the analysis of these ratios in adverse scenarios is based on capital planning and the quarterly adverse stress tests.

From the normative perspective, the DZ BANK Group's risk-bearing capacity is assured if, in the medium term, the group is in a position to meet all regulatory minimum solvency requirements, even in crisis situations. An internal management buffer over and above the regulatory requirements for each ratio is also included in order to ensure that the group has an adequate level of capital.

The normative perspective is an integral part of the ICAAP. The key risk indicators in the normative perspective are specified by the regulatory requirements, mainly the CRR and the CRD, but the selection and specific design of the scenarios are internal decisions. With due regard to regulatory and supervisory guidance, such as the ECB Guide to the ICAAP and the EBA Guidelines on stress testing, the DZ BANK Group selects and simulates scenarios that adequately reflect the vulnerabilities of the business models operated in the group. The scenarios to be analyzed are determined at least once a year.

The regulatory ratios presented below are used as part of the internal management of the DZ BANK financial conglomerate, the DZ BANK banking group, and DZ BANK. The procedures used to determine these ratios are those that are required under the CRR transitional guidance.

7.3.2 DZ BANK financial conglomerate

The DZ BANK financial conglomerate comprises the DZ BANK banking group and the R+V Versicherung AG insurance group.

FKAG forms the main legal basis for the supervision of the DZ BANK financial conglomerate. The calculation methodology for the coverage ratio is taken from Commission Delegated Regulation (EU) No. 342/2014 in conjunction with article 49 (1) CRR. The financial conglomerate coverage ratio is the ratio between the total of own funds in the financial conglomerate and the total of solvency requirements for the conglomerate. The resulting ratio must be at least 100.0 percent.

The changes in the coverage ratio and in the own funds and solvency requirements of the DZ BANK financial conglomerate are shown in Fig. VII.16.

FIG. VII.16 – REGULATORY CAPITAL ADEQUACY OF THE DZ BANK FINANCIAL CONGLOMERATE[1]

	Dec. 31, 2023[2]	Dec. 31, 2022[3]
Own funds (€ million)	39,884	36,458
Solvency requirements (€ million)	25,805	24,119
Coverage ratio (percent)	**154.6**	**151.2**

1 The values for the DZ BANK banking group included in the calculations were determined in accordance with the CRR transitional guidance.
2 Preliminary figures.
3 Final figures.

The rise in the coverage ratio calculated for the DZ BANK financial conglomerate from 151.2 percent as at December 31, 2022 to 154.6 percent as at December 31, 2023 was attributable, in particular, to the increase in own funds. The effects that led to this change in the coverage ratio were attributable to the DZ BANK banking group and the R+V Versicherung AG insurance group (see also chapter VII.7.3.3 and chapter VII.7.3.4).

The preliminary coverage ratio calculated for the financial conglomerate as at December 31, 2023 was higher than the **external minimum target** laid down by the supervisory authorities, the **internal observation threshold**, and the **internal minimum threshold**. The target/threshold values are shown in Fig. VII.3.

7.3.3 DZ BANK banking group

The banking group for regulatory purposes pursuant to section 10a KWG in conjunction with articles 11 and 18 CRR consists of DZ BANK as the superordinated entity plus other institutions, financial institutions, and ancillary services undertakings that qualify as subsidiaries according to article 4 (1) no. 16 CRR. Insurance companies and companies not in the financial sector are not required to be consolidated in the banking group for regulatory purposes. In this context, R+V is fully consolidated for commercial-law purposes but is not included in the banking group for regulatory purposes.

Procedure for determining regulatory risk-weighted assets

The entities in the DZ BANK banking group use the following methods to calculate the regulatory risk-weighted assets in accordance with the CRR:

- **Credit risk**: Primarily the foundation internal ratings-based (IRB) approach, the IRB approach for the retail business and, in some cases, the Standardized Approach to credit risk
- **Market risk**: Predominantly the group's own internal models and, to a minor extent, the Standardized Approaches
- **Operational risk**: Primarily the Standardized Approach

Regulatory capital ratios

The regulatory **own funds** of the **DZ BANK banking group** as at December 31, 2023 determined in accordance with the CRR transitional guidance amounted to a total of €30,647 million (December 31, 2022: €24,719 million). This equated to a rise in own funds of €5,928 million compared with the end of 2022, mainly comprising an increase in common equity Tier 1 capital of €4,870 million and an increase in additional Tier 1 capital of €1,143 million.

The biggest factors contributing to the rise in **common equity Tier 1 capital** from €18,762 million as at December 31, 2022 to €23,632 million as at the reporting date were the initial application of IFRS 17 at R+V at €3,851 million and the profit – calculated net of all dividends assumed by the supervisory authority and charges, and verified in accordance with Decision (EU) 2015/656 of the ECB – of €1,214 million as at December 31, 2023.

The rise of €1,143 million in **additional Tier 1 capital**, from €2,150 million as at December 31, 2022 to €3,293 million as at December 31, 2023, was due to the AT1 bond issued by DZ BANK in 2023.

Tier 2 capital declined from €3,807 million as at December 31, 2022 to €3,722 million as at December 31, 2023, a year-on-year decrease of €85 million. In the second half of 2023, Tier 2 capital totaling €271 million was issued. This was offset by amortization of existing Tier 2 capital instruments and negative effects from the utilization of the IFRS 9 transitional guidance pursuant to article 473a CRR.

The rise of €14,769 million in **risk-weighted assets** from €137,379 million as at December 31, 2022 to €152,148 million as at December 31, 2023 was largely attributable to the initial application of IFRS 17 and the associated positive effect on the equity-accounted long-term equity investment of DZ BANK in R+V. The latter led to an increase in risk-weighted assets of €18,838 million. The rise in risk-weighted assets was partly offset by a reduction in the capital charges for operational risk (€1,510 million) and market risk (€2,686 million) and the reduction in deferred tax assets (€2,676 million), which stemmed from temporary differences between carrying amounts on the IFRS balance sheet and in the tax accounts.

As at December 31, 2023, the DZ BANK banking group's **common equity Tier 1 capital ratio** was 15.5 percent, an increase of 1.8 percentage points compared with December 31, 2022 (13.7 percent). The **Tier 1 capital ratio** of 17.7 percent calculated as at the reporting date was 2.5 percentage points higher than the figure as at December 31, 2022 (15.2 percent). The **total capital ratio** also went up, from 18.0 percent as at December 31, 2022 to 20.1 percent as at December 31, 2023.

The aforementioned capital ratios take into account the supervisory authority's assumed dividend payout ratio for 2023 in accordance with Decision (EU) 2015/656 of the ECB. Using the actual dividend planned and based on DZ BANK's dividend policy, the common equity Tier 1 capital ratio would amount to 15.8 percent as at the reporting date.

Fig. VII.17 provides an overview of the regulatory capital ratios for the DZ BANK banking group and for DZ BANK.

FIG. VII.17 – REGULATORY CAPITAL RATIOS[1]

	DZ BANK banking group		DZ BANK	
	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022
Capital				
Common equity Tier 1 capital (€ million)	23,632	18,762	14,871	15,259
Additional Tier 1 capital (€ million)	3,293	2,150	3,043	1,900
Tier 1 capital (€ million)	**26,925**	**20,912**	**17,914**	**17,159**
Total Tier 2 capital (€ million)	3,722	3,807	3,836	3,794
Own funds (€ million)	**30,647**	**24,719**	**21,751**	**20,953**
Risk-weighted assets				
Credit risk including long-term equity investments (€ million)	138,249	119,283	93,332	92,608
Market risk (€ million)	4,683	7,369	4,296	6,944
Operational risk (€ million)	9,217	10,727	4,110	3,630
Total (€ million)	**152,148**	**137,379**	**101,738**	**103,182**
Capital ratios				
Common equity Tier 1 capital ratio (percent)	15.5	13.7	14.6	14.8
Tier 1 capital ratio (percent)	17.7	15.2	17.6	16.6
Total capital ratio (percent)	20.1	18.0	21.4	20.3

1 In accordance with the CRR transitional guidance.

Regulatory minimum capital requirements specified by the SREP

The minimum capital requirements that the DZ BANK banking group had to comply with in 2023 under the Supervisory Review and Evaluation Process for Basel Pillar 2 (SREP) comprised those components of Pillar 1 laid down as mandatory by law and those individually specified by the banking supervisor.

Institution-specific requirements under the additional capital requirements in Pillar 2, determined in the outcome of the SREP conducted for the DZ BANK banking group in 2022, also had to be satisfied. In this process, the banking supervisor specifies a mandatory add-on (**Pillar 2 requirement**) that is factored into the external minimum targets for the capital ratios and into the basis of calculation used to determine the threshold for the maximum distributable amount (MDA). Distributions are restricted if capital falls below the MDA threshold.

In addition to this mandatory component, there is a recommended own funds amount under Pillar 2 (**Pillar 2 guidance**), which likewise is determined from the SREP, but unlike the mandatory component relates only to common equity Tier 1 capital. Failure to comply with the own funds guidance under Pillar 2 does not constitute a breach of regulatory capital requirements. Nevertheless, this figure is relevant as an early-warning indicator.

BaFin has classified DZ BANK as an other systemically important institution (O-SII). The DZ BANK banking group had to comply with an **O-SII capital buffer** (comprising common equity Tier 1 capital) as defined in section 10g (1) KWG at a level of 1.0 percent in 2023.

The minimum capital requirements applicable to **DZ BANK** comprised those components of **Pillar 1** laid down as mandatory by law and those individually specified by the banking supervisor. Pillar 2 add-ons are currently not relevant to DZ BANK.

The mandatory minimum capital requirements relevant to the DZ BANK banking group and DZ BANK under the SREP, and their components, are shown in Fig. VII.18.

FIG. VII.18 – REGULATORY MINIMUM CAPITAL REQUIREMENTS ACCORDING TO THE SREP

	DZ BANK banking group		DZ BANK	
Percent	**2023**	2022	**2023**	2022
Minimum requirement for common equity Tier 1 capital	**4.50**	4.50	**4.50**	4.50
Additional Pillar 2 capital requirement	**1.02**	0.96		
Capital conservation buffer	**2.50**	2.50	**2.50**	2.50
Countercyclical capital buffer[1]	**0.69**	0.05	**0.67**	0.03
Systemic risk buffer[1]	**0.19**		**–**	
O-SII capital buffer	**1.00**	1.00		
Mandatory minimum requirement for common equity Tier 1 capital	**9.90**	**9.00**	**7.67**	**7.03**
Minimum requirement for additional Tier 1 capital[2]	**1.50**	1.50	**1.50**	1.50
Additional Pillar 2 capital requirement[2]	**0.34**	0.32		
Mandatory minimum requirement for Tier 1 capital	**11.75**	**10.82**	**9.17**	**8.53**
Minimum requirement for Tier 2 capital[2]	**2.00**	2.00	**2.00**	2.00
Additional Pillar 2 capital requirement[2]	**0.46**	0.43		
Mandatory minimum requirement for total capital	**14.20**	**13.25**	**11.17**	**10.53**

Not available

1 The amount of the countercyclical capital buffer and the systemic risk buffer is recalculated at each reporting date. Unlike the other reported values, which apply to the entire financial year, the countercyclical capital buffers shown for 2023 and 2022 relate solely to the reporting dates. The systemic risk buffer was not relevant in 2022.
2 The minimum requirement and additional capital requirement can also be satisfied with own funds from higher categories.

Compared with December 31, 2022, the minimum capital requirements were up by 0.95 percentage points as at the reporting date. This is primarily due to an increase in the additional capital requirements in Pillar 2 from January 1, 2023 and an increase in the countercyclical capital buffer and the introduction of the systemic risk buffer from February 1, 2023. In a general administrative act dated January 31, 2022, BaFin raised Germany's countercyclical capital buffer rate from 0.0 percent to 0.75 percent. In a general administrative act dated March 30, 2022, BaFin then introduced a systemic risk buffer for the domestic residential real estate sector of 2 percent of the risk-weighted assets attributable to these exposures.

Compliance with the minimum capital requirements

The **internal threshold values** and **external minimum targets** applicable at the level of the DZ BANK banking group for the common equity Tier 1 capital ratio, the Tier 1 capital ratio, and the total capital ratio were exceeded at the level of the DZ BANK banking group and DZ BANK as at December 31, 2023. The target/threshold values are shown in Fig. VII.3 and Fig. VII.4.

Leverage ratio

The leverage ratio shows the ratio of a bank's Tier 1 capital to its total exposure. In contrast to credit-risk-related capital requirements for which the assumptions are derived from models, the individual exposures in the calculation of the leverage ratio are not allocated their own risk weight but are generally included in the total exposure without any risk weight at all.

The leverage ratio of the **DZ BANK banking group** determined in accordance with the CRR transitional guidance went up by 1.5 percentage points from 4.7 percent as at December 31, 2022 to 6.2 percent as at December 31, 2023. This was mainly due to a sharp rise of €6.0 billion in Tier 1 capital in connection with the implementation of IFRS 17 at R+V. Conversely, the total exposure declined by €8.3 billion.

The dividend payout ratio for 2023 assumed by the supervisory authority in accordance with Decision (EU) 2015/656 of the ECB was used to calculate the leverage ratio. Using the actual dividend planned and based on DZ BANK's dividend policy, the leverage ratio would amount to 6.3 percent as at the reporting date.

DZ BANK's leverage ratio as at December 31, 2023 was calculated at 6.8 percent (December 31, 2022: 6.3 percent). The rise of 0.5 percentage points was attributable to a decline of €10.9 billion in the total exposure and an increase of €755 million in Tier 1 capital.

The lower limits applicable to the DZ BANK banking group and DZ BANK in respect of the regulatory capital ratios – the **external minimum target**, the **internal observation threshold**, and the **internal minimum threshold** – were all exceeded as at the reporting date. The target/threshold values are shown in Fig. VII.3 and Fig. VII.4.

Minimum requirement for own funds and eligible liabilities

The Bank Recovery and Resolution Directive (BRRD), Implementing Regulation (EU) No. 806/2014 establishing a Single Resolution Mechanism, and the transposition of the BRRD into German law in the form of SAG created the legal basis at European and national level for a single resolution mechanism for banks and the regulatory MREL ratio as a percentage of risk-weighted assets.

The MREL requirements are intended to ensure that banks hold a sufficiently large volume of own funds and liabilities that can be 'bailed-in' to make it possible at all times to carry out an orderly resolution. 'Bail-in-able' liabilities are those that provide for creditors to take an interest in losses incurred and recapitalization if a bank gets into financial difficulties, enabling resolution to take place on the basis of the bail-in and other instruments without recourse to government help and without jeopardizing the stability of the financial system.

The DZ BANK banking group's **MREL ratio as a percentage of risk-weighted assets** is the ratio of the total of the regulatory own funds of the DZ BANK banking group and the eligible external MREL liabilities of DZ BANK to the total risk exposure amount (risk-weighted assets) of the DZ BANK banking group.

Since January 1, 2023, the **MREL ratio as a percentage of the leverage ratio exposure** has been used alongside the MREL ratio as a percentage of risk-weighted assets for the purposes of managing the DZ BANK banking group. This MREL ratio is the ratio of the total of the regulatory own funds of the DZ BANK banking group and the eligible external, subordinated MREL liabilities of DZ BANK to the leverage ratio exposure of the DZ BANK banking group.

MREL ratio

The MREL ratio as a percentage of risk-weighted assets measured for the DZ BANK banking group was 42.4 percent as at December 31, 2023 (December 31, 2022: 38.3 percent). The year-on-year increase in this key figure was attributable to a rise of €4,163 million in MREL-eligible senior preferred liabilities and growth in own funds of €5,928 million. As at December 31, 2023, the MREL volume stood at €64,533 million, which was up by €11,892 million compared with December 31, 2022.

As at December 31, 2023, the MREL ratio as a percentage of the leverage ratio exposure was 14.9 percent (December 31, 2022: 11.9 percent). The rise in this ratio was attributable to an increase in the MREL volume.

The **external minimum targets**, **internal observation thresholds**, and **internal minimum thresholds** applicable to the two MREL ratios were exceeded as at December 31, 2023. The target/threshold values and measured values are shown in Fig. VII.3.

Subordinated MREL ratio

The **subordinated MREL ratio as a percentage of risk-weighted assets** is the ratio of the total of the regulatory own funds of the DZ BANK banking group and the eligible external, subordinated MREL liabilities of DZ BANK to the total risk exposure amount (risk-weighted assets) of the DZ BANK banking group. As at December 31, 2023, this key figure stood at 31.0 percent (December 31, 2022: 28.5 percent). The rise in the subordinated MREL ratio as a percentage of risk-weighted assets was predominantly driven by the substantial growth of the subordinated volume, which – in turn – was mainly attributable to an increase of €2,485 million in the portfolio of senior non-preferred liabilities and an increase of €5,928 million in own funds.

Since January 1, 2023, the **subordinated MREL ratio as a percentage of the leverage ratio exposure** has been used alongside the subordinated MREL ratio as a percentage of risk-weighted assets for the purposes of managing the DZ BANK banking group. It is the ratio of the total of the regulatory own funds of the DZ BANK banking group and the eligible external, subordinated MREL liabilities of DZ BANK to the leverage ratio exposure of the DZ BANK banking group. As at December 31, 2023, the subordinated MREL ratio as a percentage of the leverage ratio exposure was 10.9 percent (December 31, 2022: 8.9 percent). The rise in this ratio was also attributable to the marked increase in the subordinated volume.

The **external minimum targets**, **internal observation thresholds**, and **internal minimum thresholds** applicable to the two subordinated MREL ratios were exceeded as at December 31, 2023. The target/threshold values and measured values are shown in Fig. VII.3.

7.3.4 R+V Versicherung AG insurance group

The regulatory solvency requirements for insurance companies and insurance groups provide a means of evaluating the overall risk position in the R+V Versicherung AG insurance group.

The group's risk-bearing capacity for regulatory purposes is defined as the eligible own funds at group level in relation to the risks arising from operating activities. The changes in the regulatory risk-bearing capacity of the R+V Versicherung AG insurance group as a whole and each of its constituent entities are analyzed at least once a quarter.

R+V uses two measures defined by the supervisory authorities – the transitional measure on technical provisions and the volatility adjustment – for individual personal insurance companies. Both measures have a positive impact on regulatory and economic capital adequacy. Further disclosures on these measures can be found in chapter VII.7.2.1.

The preliminary figure for the **regulatory risk-bearing capacity** of the R+V Versicherung AG insurance group as at December 31, 2023 was calculated at 230.2 percent. The coverage ratio was thus above the external minimum target of 100.0 percent, which was the same target as had applied in 2022. The final figure as at December 31, 2022 was 212.7 percent (preliminary figure given in the 2022 risk report: 219.8 percent). Fig. VII.19 shows how the solvency requirements are covered by eligible own funds.

FIG. VII.19 – REGULATORY CAPITAL ADEQUACY OF THE R+V VERSICHERUNG AG INSURANCE GROUP

	Dec. 31, 2023[1]	Dec. 31, 2022[2]
Own funds (€ million)	18,379	15,918
Solvency requirements (€ million)	7,982	7,484
Coverage ratio (percent)	**230.2**	**212.7**

1 Preliminary figures.
2 Final figures. The preliminary figures were stated in the 2022 risk report.

The changes in the regulatory risk-bearing capacity are primarily due to movements in interest rates and equities in the capital markets in 2023. The increase in solvency requirements is primarily attributable to higher actuarial risk.

The **recalculation of the overall solvency requirement** described in chapter VII.7.2.3 for economic risk-bearing capacity also affected the regulatory risk-bearing capacity of the R+V Versicherung AG insurance group and led to retrospective changes in the solvency requirements as at the end of 2022. The prior-year figures as at December 31, 2022 given in this risk report have been restated accordingly and are not directly comparable with the figures in the 2022 risk report.

7.4 Stress tests for types of risk covered by capital

7.4.1 Adverse stress tests

Adverse stress tests are used to examine the impact on capital, liquidity, and risk from potential **crisis scenarios** that are exceptional, but plausible, and particularly relevant to the DZ BANK Group's value drivers and risk factors. The **KPIs** relating to economic and regulatory capital adequacy are analyzed in this context. However, the stress tests also reflect events that go beyond the methods established for calculating capital adequacy. The term 'adverse stress tests' encompasses those stress scenarios that represent negative macroeconomic trends or events from the perspective of the DZ BANK Group. In this context, 'adverse' indicates that the scenarios may be particularly disadvantageous or even harmful.

Adverse stress tests can provide information on whether the level of capital resources – especially the buffer held to cover crisis situations – is also sufficient to cover various types of moderate to serious crisis scenario. The stress test results also facilitate an assessment of the extent to which the analyzed value drivers and risk factors are material for the DZ BANK Group.

The methods used are designed so that the specific features of R+V's business model and its risk and capital management systems are taken into account when determining the results of stress testing in the DZ BANK Group.

For the adverse stress tests, DZ BANK has put in place a system of threshold values as an **early-warning mechanism**. The threshold values for the scenarios across all risk types are monitored in the ongoing reporting system. These early-warning signals trigger various risk management processes so that there can be an early response to the potential risks highlighted by the stress tests. Control measures potentially available for the crisis scenario in question are also taken into account so that there is a comprehensive, critical evaluation of the stress test results.

The adverse stress tests are carried out quarterly. The results are submitted in the DZ BANK Group stress tests report and are noted by the **Board of Managing Directors** and by the DZ BANK **Supervisory Board's Risk Committee**.

7.4.2 Reverse stress tests

Reverse stress tests complement the adverse stress tests and are used to investigate which of the hypothetical scenarios could conceivably be sufficiently plausible and relevant to jeopardize the ability of the DZ BANK Group to **continue as a going concern**.

'Reverse' indicates that the tests are in the opposite direction and distinguishes them from the adverse stress tests.

In adverse stress tests, scenarios are defined and the corresponding KPIs determined in order to assess whether there is a sufficient level of capital resources available to cover moderate or serious crisis scenarios. Reverse stress tests, on the other hand, examine which scenarios would have to occur to jeopardize the DZ BANK Group's ability to continue as a going concern.

In reverse stress tests, the risk particularly to the regulatory KPIs is simulated with scenarios in which it would no longer be feasible to **continue the business model** or in which the business model would prove to be no longer sustainable. In the case of reverse stress tests, the priorities are therefore as follows: firstly, to identify relevant scenario approaches that could have the potential to jeopardize the bank's ability to continue as a going concern, and secondly, to estimate the probability and plausibility of a specific, sufficiently serious scenario of this nature.

Reverse stress tests are generally carried out annually. The results are submitted in the DZ BANK Group stress tests report and are noted by the **Board of Managing Directors** and by the DZ BANK **Supervisory Board's Risk Committee**.

7.4.3 Scenario analyses in the risk types

The quarterly report on stress tests in the DZ BANK Group is supplemented by a credit risk stress test in the normative perspective and by various scenario analyses in the risk types in the economic perspective. These analyses serve as a link between vulnerabilities and sensitivities, and between potential events and adverse scenarios. The scenario analyses also enhance the risk quantification for each risk type by including an alternative perspective.

In the scenario analyses, specific vulnerabilities, risk concentrations, or events are examined in detail for each type of risk by simulating economic losses and comparing them against the relevant risk limit.

Scenario analyses in the risk types are carried out quarterly. The results are submitted in the DZ BANK Group stress tests report and are noted by the **Board of Managing Directors** and by the DZ BANK **Supervisory Board's Risk Committee**.

Bank sector

8 Credit risk

8.1 Definition

Credit risk is defined as the risk of losses arising from the default of counterparties (borrowers, issuers, other counterparties) or from the migration of the credit ratings of these counterparties, or of losses in connection with the recovery of loans, advances, receivables, or collateral.

Credit risk may arise in traditional lending business and also in trading activities. **Traditional lending business** is for the most part commercial lending, including financial guarantee contracts and loan commitments. In the context of credit risk management, **trading activities** refer to securities business in the banking book and trading book, money market business, transactions involving tradable loans and advances (such as promissory notes), currency transactions, transactions involving derivatives, and transactions involving commodities (such as precious metals).

In **traditional lending business**, credit risk arises mainly in the form of default risk and migration risk. In this context, default risk refers to the risk that a customer may be unable to settle receivables arising from loans or advances made to the customer (including lease receivables) or make overdue payments. It also includes risks arising from contingent liabilities (such as issued guarantees and indemnities). The calculation of the exposure encompasses loan facilities promised to third parties and any existing overdrawn accounts in addition to loans that have already been drawn down. Migration risk is a sub-risk within traditional credit risk and reflects the risk of changes in fair value caused by a change in the rating for a borrower (rating migration).

Credit risk in connection with **trading activities** arises in the form of default risk, which can be subdivided into issuer risk, replacement risk, and settlement risk, depending on the type of transaction involved.

Issuer risk is the risk of incurring losses from the default of issuers of tradable debt or equity instruments (such as bonds, shares, profit-participation certificates), losses from a default in connection with the underlying instrument in derivatives (for example, credit or equity derivatives), or losses from a default in connection with investment fund units or their underlying instruments.

Replacement risk on derivatives is the risk of a counterparty defaulting during the term of a trading transaction.

Transaction processing risk is a default risk subcategory of replacement risk. It is factored into the exposure calculation for replacement risk. Transaction processing risk arises in connection with both delivery-versus-payment (DVP) settlement and unilateral payments in a trading transaction. It arises when the counterparty in a trading transaction cannot perform its contractual obligation.

Settlement risk arises when there are two mutually conditional payments and there is no guarantee that when the outgoing payment is made the incoming payment will be received. Settlement risk is the risk of a loss if counterparties do not meet their obligations, counter-performance already having taken place.

Recovery risk forms part of credit risk. It cannot be determined as an exposure amount but increases the risk capital requirement for traditional credit risk, issuer risk, and replacement risk. Recovery risk results from uncertainty regarding the recovery rate for existing collateral and uncertainty regarding the recovery rate for unsecured receivables (or partial receivables).

Country risk is also included within credit risk. Country risk in the narrower sense of the term refers to conversion, transfer, payment prohibition, or moratorium risk. It is the risk that a foreign government may impose restrictions preventing a debtor in the country concerned from transferring funds to a foreign creditor. In the broader sense of the term, country risk refers to sovereign risk (the risk arising from exposure to a government itself) or the risk that the quality of the overall exposure in a country may be impaired as a result of country-specific events (country-related borrower risk). In this case, it is not viewed as a separate risk type but as a component of credit risk and is thus recorded within traditional credit risk, issuer risk, and replacement risk.

8.2 Business background and risk strategy

The DZ BANK Group is exposed to considerable credit risk in the Bank sector. The lending business is one of the most important core activities of the entities in the Bank sector. In its role as the central institution, DZ BANK covers a **broad range of lending business**, either in partnership with the local cooperative banks or in direct business, and provides its customers with financing solutions. Its customers include the local cooperative banks themselves, corporate customers, retail customers, the public sector, international companies, and banks and institutions both in Germany and abroad.

Default risk from traditional lending business arises primarily at DZ BANK, BSH, DZ HYP, and TeamBank. The risk results from the specific transactions in each management unit and therefore has varying characteristics in terms of diversification and size in relation to the volume of business.

Default risk relating to trading transactions arises from issuer risk, particularly in connection with the trading activities and investment business of DZ BANK. Replacement risk arises for the most part at DZ BANK and DZ PRIVATBANK.

The entities in the Bank sector pursue a decentralized business policy aimed at promoting the cooperative banks and are bound by the core strategic guiding principle of a **'network-oriented central institution and financial services group'**. The business and risk policy for the credit-risk-bearing core businesses in the group is formulated on the basis of risk-bearing capacity. The credit risk strategy therefore forms the basis for credit risk management and reporting across the whole group and ensures that there is a standard approach to credit risk within the group. It takes into account the business models of each of the management units.

The management units aim to ensure that their credit portfolios always have **a sound credit quality and risk structure**. One of the objectives is to make sure that the portfolios remain highly diversified going forward.

8.3 Risk factors

8.3.1 General credit risk factors

Key values used in determining credit risk include the concentrations of lending volume in terms of counterparties, sectors, country groups, and residual maturities, and the credit quality structure of the credit portfolio. **Significant concentrations of volume** in counterparties, sectors, or countries increase the risk that an accumulation of credit risk will become critical, for example if there are defaults among greater concentrations of counterparties or, in economic crises, defaults in sectors or countries with significant concentrations in the credit portfolio.

The term of loan agreements is also a key credit risk factor because the probability of a deterioration in credit rating and therefore of a counterparty default during the term of an agreement generally increases over time. Particularly in the case of an **accumulation of exposures that have longer terms to maturity** and a non-investment-grade rating, there is a danger that the credit risk will materialize and the recognition of impairment losses will become necessary.

8.3.2 Specific credit risk factors

In addition to the general risk factors, **negative macroeconomic and environmental trends** could lead to higher credit risk, more defaults among individual counterparties, and therefore to a greater requirement for the recognition of impairment losses in the lending business.

The biggest threats to general borrower credit quality stem from the adverse factors described in chapter VII.4.2. If the macroeconomic trends described there persist for a while longer yet, or escalate, credit risk in the Bank sector would likely rise significantly.

The lending exposures affected to differing extents by these macroeconomic risk factors are described in chapters 8.7 (Credit portfolios particularly affected by negative macroeconomic conditions), 8.8 (Credit portfolios particularly affected by acute global crises), and 8.9 (Credit portfolios with increased risk content).

There is also a risk that collateral for loan exposures could become impaired as a result of transition risk or if physical climate-related and environmental risks were to materialize. In addition, transition effects could diminish the earnings power of corporate finance borrowers. A resulting deterioration of the borrowers' credit quality could lead to a greater requirement for the recognition of impairment losses.

8.4 Organization, responsibility, and reporting

Responsibilities in the lending process have been laid down and are documented in a written set of procedural rules. These responsibilities cover loan applications, approvals, and termination, including periodic credit control with regular analysis of ratings. Decision-making authority levels are specified by the relevant **rules** based on the risk content of lending transactions.

Established **reporting and monitoring processes** help to provide decision-makers with information about the risk structure of credit portfolios and changes therein and form the basis for managing credit risk.

The **credit risk report** keeps the Board of Managing Directors, the Group Risk and Finance Committee, and the Supervisory Board's Risk Committee informed of the economic capital required to cover credit risk. In addition to providing management with recommendations for action, internal reporting also includes an in-depth analysis of the portfolio structure in regard to risk concentrations based on key risk characteristics such as credit rating class, industry, country group, and the lending volume to single borrowers. In addition, the report includes details on specific exposures. In the context of the risk limit, the credit value-at-risk is also included in the credit risk report.

8.5 Risk management

8.5.1 Rating systems

Use and characteristics of the rating systems

The generation of internal credit ratings for the counterparties of entities in the Bank sector helps to provide a solid basis for lending decisions in the management of transactions, in that the expected losses from defaults in the lending business are then factored into pricing. In addition, internal ratings are used to incorporate the credit quality of the counterparties when calculating unexpected losses in the credit portfolio.

The **VR rating system** used as standard throughout the Cooperative Financial Network aims to ensure that all the entities in the network apply a sophisticated uniform methodology producing ratings that are comparable.

DZ BANK primarily uses rating systems in its credit risk management system to assess major corporations, banks, investment funds, and project finance (slotting approach). The internal assessment approach is also used to evaluate the liquidity lines and credit enhancements made available by DZ BANK to programs for the issuance of asset-backed commercial paper (ABCP). These rating systems have been approved by the competent supervisory authority for the purposes of calculating regulatory capital using the **foundation IRB approach** or the **slotting approach**.

For **internal management purposes**, DZ BANK uses further rating systems to assess SMEs (German Mittelstand), countries, asset finance, acquisition financing, agricultural businesses, public-sector entities, not-for-profit organizations, foreign SMEs, and insurance companies.

Most of the other entities in the Bank sector use the DZ BANK rating systems for banks, countries, and major corporations. Rating systems for specific business segments are also used by individual subsidiaries.

Development and expansion of rating systems

All internal rating systems and those approved by the banking supervisor for solvency reporting were validated in the reporting year. The new VR rating system for major corporations and a substantially revised version of the rating system for local cooperative banks were introduced.

DZ BANK credit rating master scale

The credit rating master scale serves as a groupwide rating benchmark with which to standardize the different rating systems used by the entities in the Bank sector as a result of differences in their business priorities. It thereby provides all management units with a uniform view of counterparties' credit ratings.

Fig. VII.20 shows DZ BANK's credit rating master scale and matches the internal credit ratings to the ratings used by Moody's, Standard & Poor's, and Fitch Ratings. Some internal ratings cannot be matched with a particular external rating because of the greater degree of refinement in the credit rating master scale. The ratings for securitization exposures are matched to various different external ratings depending on the asset class and region.

In DZ BANK's master scale, the default bands remain unchanged to ensure comparability over the course of time, whereas some fluctuation in default rates can be seen in external ratings. Therefore, it is not possible to map the internal ratings directly to the ratings used by the rating agencies. Consequently, the chart can only be used as a starting point for comparison between internal and external credit ratings.

DZ BANK rating desk

The VR rating systems for banks and countries are also available to DZ BANK subsidiaries and the cooperative banks. Users can enter into a master agreement to access the ratings via an IT application (Rating Desk), which is available throughout the Cooperative Financial Network, in return for the payment of a fee. Any accessed ratings are first validated by the entities in the Bank sector or the cooperative banks before they are included in the user's credit procedures.

FIG. VII.20 – BANK SECTOR: DZ BANK'S VR CREDIT RATING MASTER SCALE AND EXTERNAL CREDIT RATINGS

		External rating classes			
Internal rating class	Average default probability	Moody's	Standard & Poor's	Fitch	Rating category
1A	0.01%	Aaa to Aa2	AAA to AA	AAA to AA	Investment grade
1B	0.02%	Aa3	AA-	AA-	
1C	0.03%				
1D	0.04%	A1	A+	A+	
1E	0.05%				
2A	0.07%	A2	A	A	
2B	0.10%	A3	A-	A-	
2C	0.15%	Baa1	BBB+	BBB+	
2D	0.23%	Baa2	BBB	BBB	
2E	0.35%				
3A	0.50%	Baa3	BBB-	BBB-	
3B	0.75%	Ba1	BB+	BB+	Non-investment grade
3C	1.10%	Ba2	BB	BB	
3D	1.70%				
3E	2.60%	Ba3	BB-	BB-	
4A	4.00%	B1	B+	B+	
4B	6.00%	B2	B	B	
4C	9.00%	B3	B-	B-	
4D	13.50%				
4E	30.00%	Caa1 or lower	CCC+ or lower	CCC+ or lower	
5A	DPD default				Default
5B	Specific loan loss allowance / internal neutralization of interest / rating-related sale with significant loss / further bank-internal criteria				
5C	Distressed restructuring				
5D	Insolvency				
5E	Direct impairment / workout				
NR	Not rated				

8.5.2 Lending business pricing

The management units in the Bank sector use **risk-adjusted pricing** as a key decision-making criterion for the management of the lending business. Adequate standard risk costs and risk-adjusted capital costs are taken into account. The methods used by the management units to manage the lending business reflect the particular features of their products and business.

To ensure that lending business remains profitable, **standard risk costs** are determined in the management of individual transactions in many parts of the Bank sector. The purpose of these costs is to cover average expected losses from borrower defaults. The aim is to ensure that the net loss allowances recognized in the financial statements are covered on average over the long term in an actuarial-type approach by the standard risk costs included in the pricing.

In addition to standard risk costs, **economic and regulatory costs of capital** based on the capital requirement are integrated into the contribution margin costing carried out by the entities in the Bank sector. This enables the Bank sector to obtain a return on the capital tied up that is in line with the risk involved and that covers any unexpected losses arising from the lending business.

8.5.3 Management of exposure in traditional lending business

Measuring exposure in traditional lending business

Individual lending exposures are managed on the basis of an analysis of gross lending exposure. The period taken into account in this case is equivalent to the monitoring cycle of 1 year. Together with risk-related credit-portfolio management, volume-oriented credit risk management is one of the components in the management of risk concentrations in the lending business.

In traditional lending business, the credit exposure or lending volume is generally the same as the nominal value of the total loan book and reflects the maximum volume at risk of default. The credit exposure is a gross value because risk-bearing financial instruments are measured before the application of any credit risk mitigation and before the recognition of any loss allowances. The maximum credit exposure comprises the total lines of credit committed to third parties, or in the case of limit overruns, the higher amounts already drawn.

In building society operations, nominal amounts are used as a basis for measuring the gross lending volume. In addition, loans and advances to customers in building society operations are reduced by the associated deposits.

Limit system for managing exposures in traditional lending business

Limits are set in the relevant entities in the Bank sector for individual borrowers and groups of connected customers. Counterparties are also managed centrally at the level of the Bank sector, depending on the limit level and credit rating.

As a prerequisite for prompt monitoring of limits, suitable **early-warning processes** have been established in the management units that are of material significance for the Bank sector's credit risk. In this context, financial covenants are often incorporated into loan agreements to act as early-warning indicators for changes in credit standing and as a tool for the proactive risk management of lending exposures.

In addition, processes have been set up in the Bank sector to handle instances in which limits are **exceeded**. Such excess exposures must be approved by the relevant level of authority in the management units concerned and in accordance with applicable internal requirements; measures to reduce them must also be initiated if necessary.

Country exposure in the traditional lending business is managed by setting **country limits** for industrialized countries and emerging markets at the Bank sector level.

8.5.4 Management of credit exposure in trading transactions

Measuring credit exposure in trading transactions

Issuer risk, replacement risk, and settlement risk are exposure-based measurements of the potential loss in trading transactions. These are determined without taking into account the likelihood of a default. In order to determine the credit exposure, securities in the banking book and trading book are predominantly measured at fair value, while derivatives are measured at fair value and, in respect of settlement risk, at the cash-flow-based accepted value.

The fair value of a securities exposure is used to determine the **issuer risk**. Risks relating to the underlying instruments in derivative transactions are also included in issuer risk.

At the level of the Bank sector, **replacement risk** is generally determined on the basis of fair value, taking into account appropriate add-ons. At **DZ BANK**, which is of particular significance as far as replacement risk is concerned, these add-ons are determined primarily according to each individual transaction as part of a portfolio simulation. The portfolio simulation models future exposures, taking into account a large number of risk factors. The add-ons for the remaining derivatives not included in the portfolio simulation are determined on the basis of a product-specific allocation, which also takes into account specific risk factors and residual maturities. Transaction processing risk is additionally factored into the exposure calculation for replacement risk. This risk is largely determined as the net present value of the reciprocally required performance.

With regard to exchange-traded derivatives, the replacement risk vis-à-vis the customer in customer brokerage business consists of the actual collateral exchanged (the variation margin for the daily settlement of profits and losses, and the initial margin as the collateral to be provided in advance to cover the loss risk), the fair value, and additional collateral requirements. To calculate the replacement risk vis-à-vis stock exchanges, additional potential for changes in value or add-ons for individual transactions are also taken into consideration. Where legally enforceable, netting agreements and collateral agreements are used at counterparty level for all derivatives in order to reduce exposure. In the case of repos and securities lending transactions, haircuts are applied instead of add-ons. Unsecured money market transactions are measured at fair value.

As regards **settlement risk**, the risk amount is the expected payment due. Settlement risk is recognized for the specified settlement period. It takes into account the amount and timing of outstanding cash flows for the purposes of managing the risk associated with settlement by the two parties at points of time in the future. These future cash flows are already factored into the replacement risk through the fair value measurement and are therefore included in the risk capital requirement. As a result, settlement risk does not need to be covered with risk capital in addition to that for the other types of credit risk related to trading activities.

Limit system for managing trading exposure

DZ BANK has established an exposure-oriented **limit system** related to credit ratings to limit the default risk arising from trading business. Replacement risk is managed via a structure of limits broken down into maturity bands. Unsecured money market transactions are subject to separate limits. The transaction processing risk forming part of the replacement risk is included in the shortest maturity band. A daily limit is set in order to manage settlement risk. A specific limit for each issuer or, in certain circumstances, a general limit is determined as the basis for managing issuer risk. The specific limit can also be broken down into seniority bands; in the case of asset-backed securities, the specific limit can be broken down into rating bands. Issuer risk relating to cover assets is subject to separate limits, as are settlement risk and replacement risk attaching to cover assets. Issuer risk in connection with the trading book and issuer risk in connection with the banking book are subject to separate limits. The material subsidiaries have their own comparable limit systems.

The standardized methodology for measuring and monitoring trading exposure at DZ BANK (**post-transaction control**) is included in an IT-supported limit monitoring system, to which all relevant trading systems are directly or indirectly connected. A second IT system is used solely for most of the **pre-transaction control**. This functionality is currently being migrated to the system used for post-transaction control. Furthermore, the trading exposure in the Bank sector is managed on a decentralized basis at management unit level.

As in the traditional lending business, appropriate processes have also been established for the trading business to provide **early warnings and notification of limit overruns**. The member of the Board of Managing Directors responsible for risk monitoring is sent a daily list of significant exceeded trading limits. A monthly report is prepared covering the utilization of replacement and issuer risk in connection with trading activities. The material subsidiaries have their own comparable processes.

Country exposure in the trading business is managed in the same way as in the traditional lending business by setting **limits for countries** at the Bank sector level.

8.5.5 Management of risk concentrations and correlation risks

Identifying risk concentrations

One of the Bank sector’s key concerns in the management of credit risk is to avoid undesirable concentrations and correlations of risks in the credit portfolio. To this end, it has established credit risk strategies, policies, and principles that must be applied in the various areas of business. The main structural elements are managed on this basis with the aim of ensuring that the credit portfolio is appropriately diversified. The structural elements include specifications for rating-related maximum exposures, strategic borrower limits, restriction of areas of business to specified countries or regions, maturity limits, specific requirements for certain operating segments and industries, and requirements relating to collateral, loan agreement clauses, and key credit-risk-related figures.

Measurement and monitoring of risk concentrations

The structural requirements include general parameters to ensure that the credit portfolio in the Bank sector is comprehensively diversified. They therefore provide important guidance for managing new business. The ongoing monitoring of potential risk concentrations is also of fundamental importance. With this in mind, the Bank sector's credit portfolio is constantly checked for concentrations in terms of asset class, area of business, industry, country, country group, residual maturity, size category, and rating class. Significant attention is also paid to monitoring concentrations linked to individual borrowers. Exposures are analyzed and managed using monitoring lists, particularly to identify if specified volume limits are exceeded.

Besides volume-oriented parameters, the credit value-at-risk for individual exposures and borrowers is a core parameter used in modeling concentration risk. A key factor is the possibility of a simultaneous default by a number of borrowers who share the same characteristics. This is why determining the correlated exposure to loss as a part of the calculation of the risk capital required for credit risk is essential for managing risk concentrations.

Risk concentrations in credit and collateral portfolios

In managing the traditional lending business and its trading business, DZ BANK takes into account the correlation between collateral and the borrower pledging the collateral or between the collateral and the counterparty whose replacement risk the collateral is intended to mitigate. If there is a significant positive correlation between the collateral and the borrower or the counterparty pledging the collateral, the collateral is disregarded or accorded a reduced value as collateral. This situation arises, for example, where a protection provider, garnishee, or issuer forms a group of connected clients or a similar economic entity with the borrower or counterparty.

Wrong-way risk in trading activities

General wrong-way risk can arise as a result of DZ BANK's trading activities. This is defined as the risk of a positive correlation between the default probability of a counterparty and the replacement value (replacement risk exposure) of a (hedging) transaction entered into with this counterparty because of a change in the macroeconomic market factors of the traded underlying instrument (e.g. price changes for exchange rates).

Specific wrong-way risk can also occur. This is the risk of a positive correlation between the default probability of a counterparty and the replacement value (replacement risk exposure) of a (hedging) transaction entered into with this counterparty because of an increase in the default probability of the issuer of the traded underlying instrument. This type of risk largely arises in connection with OTC equity and credit derivatives in which the underlying instrument is a (reference) security or (reference) issuer.

Other measures to prevent concentration risk and wrong-way risk in trading activities

In order to prevent unwanted risks that may arise from the concentration or correlation of collateral in the trading business or from general wrong-way risk, DZ BANK has brought into force a **collateral policy** and its own internal **minimum requirements for bilateral reverse repo transactions and securities lending transactions**. Both policies are explained in chapter VII.8.5.6.

If material specific wrong-way risk arises in connection with a bilateral OTC trading transaction, it is taken into account when the exposure is calculated.

The **Risk Committee** receives quarterly reports on relevant wrong-way risk and concentration risk arising in connection with derivatives and securities financing, including any necessary exposure adjustments.

8.5.6 Mitigating credit risk

Collateral strategy and secured transactions

In accordance with the credit risk strategy, customer credit quality forms the main basis for any lending decision; collateral has no bearing on the borrower's credit rating. However, depending on the structure of the transaction, collateral may be of material significance in the **assessment of risk** in a transaction. In particular, collateral received reduces the credit value-at-risk (see chapter VII.8.5.8).

Collateral in line with the level of risk is generally sought where the rating category is 3B or below on the credit rating master scale and in medium-term or long-term financing arrangements. In addition, recoverable collateral equivalent to 50.0 percent of the finance volume is expected in the joint credit business with the local cooperative banks for new business entered into with SME customers in rating category 3E on the credit rating master scale.

Collateral is used as an appropriate tool for the management of risk in export finance or structured trade finance transactions. In the case of project finance, the financed project itself or the assignment of the rights in the underlying agreements typically serve as collateral.

Secured transactions in traditional lending business encompass commercial lending including financial guarantee contracts and loan commitments. In order to limit defaults in these transactions, a decision on whether to obtain traditional collateral is made on a case-by-case basis.

Types of collateral

The entities in the Bank sector use all forms of **traditional loan collateral**. Specifically, these include mortgages on residential and commercial real estate, registered ship and aircraft mortgages, guarantees (including sureties, credit insurance, and letters of comfort), financial security (certain fixed-income securities, shares, and investment fund units), assigned receivables (blanket and individual assignments of trade receivables), and physical collateral.

Privileged mortgages, guarantees, and financial collateral are the main sources of collateral recognized for regulatory purposes under the CRR.

In accordance with DZ BANK's collateral policy, only cash, investment-grade government bonds, and/or Pfandbriefe are normally accepted as **collateral for trading transactions** required by the collateral agreements used to mitigate the risk attaching to OTC derivatives. Entities in the Bank sector also enter into netting agreements to reduce the credit risk arising in connection with OTC derivatives. The prompt evaluation of collateral within the agreed margining period also helps to limit risk.

Credit derivatives, such as credit default swaps, are used to reduce the issuer risk arising on bonds and derivatives. Macro hedges are used dynamically to mitigate spread risk and migration risk as well as risks attaching to underlying assets. In isolated cases, transactions are conducted on a back-to-back basis. For risk management purposes, the protection provided by credit derivatives is set against the reference entity risk, thereby mitigating it. The protection providers/counterparties in credit derivatives are financial institutions, namely investment-grade banks and funds in the VR rating classes 1A to 2E.

Management of traditional loan collateral

Collateral management is the responsibility mainly of **specialist units**, generally outside the front-office divisions. The core tasks of these units include providing, inspecting, measuring, recording, and managing collateral and providing advice to all divisions in related matters.

To a large extent, standardized contracts are used for the provision of collateral and the associated declarations. Specialist departments are consulted in cases where customized collateral agreements are required. Collateral is managed in separate IT systems.

Collateral **is measured** in accordance with internal guidelines and is usually the responsibility of back-office units. As a minimum, carrying amounts are normally monitored annually or on the agreed submission date for documents relevant to measurement of the collateral. Shorter monitoring intervals may be specified for critical lending exposures. Regardless of the specified intervals, collateral is tested for impairment without delay if any indications of impairment become evident.

The workout units are responsible for **recovering collateral**. In the case of non-performing loans, it is possible to depart from the general measurement guidelines and measure collateral on the basis of its likely recoverable value and time of recovery. Contrary to the general collateralization criteria, collateral involved in restructuring exposures can be measured using market values or the estimated liquidation proceeds.

Collateral management

In addition to **netting agreements** (ISDA Master Agreement and German Master Agreement for Financial Futures), both collateral agreements for variation margin (Credit Support Annex to the ISDA Master Agreement and Collateralization Annex to the German Master Agreement for Financial Futures) and collateral agreements for initial margin are entered into as instruments to reduce credit exposure in OTC transactions.

DZ BANK's **collateral policy** regulates the economic aspects of collateral agreements and the responsibilities and authorization levels. This policy specifies contractual parameters, such as the type and quality of collateral, minimum transfer amounts, and delivery deadlines as permitted by regulatory requirements. As a rule, the collateral policy permits only collateral in the form of cash (in euros) to be accepted for mitigating risks arising from OTC derivatives on the basis of the Credit Support Annex or the German Collateralization Annex. General exceptions to this rule exist for older contracts entered into before the collateral agreement obligation came into force and, in particular, for contracts with local cooperative banks that permit thresholds and securities collateral. Securities collateral must be eligible as collateral with the ECB and have a minimum credit rating of A3 (Moody's) or A- (Standard & Poor's, Fitch Ratings). Exceptions to the standard conditions are approved on the basis of the authorization levels specified in the collateral policy.

High-grade collateral is also required for repo and securities lending transactions in compliance with generally accepted master agreements and DZ BANK's own internal **minimum requirements for bilateral reverse repo transactions and securities lending transactions**, although the range of collateral is somewhat broader here than in the case of OTC derivatives. There are a few individual exceptions for banks in the Cooperative Financial Network.

Furthermore, the minimum requirements applicable at DZ BANK exclude prohibited correlations and specify collateral quality depending on the credit rating of the counterparties. The relevant rules are monitored on a daily basis and any infringements of the requirements are reported each month to the Risk Committee.

DZ BANK regularly uses **bilateral collateral agreements**. Exceptions apply to cover assets and special-purpose entities, as the special legal status of the counterparties means that only unilateral collateral agreements can be usefully enforced, and to supranational or government entities. Any decision not to use a bilateral collateral agreement for counterparties not subject to the European Market Infrastructure Regulation (EMIR) rules must be approved by a person with the relevant authority.

Netting and collateralization generally result in a significant reduction in the exposure from trading business. IT systems are used to measure exposures and collateral. **Margining** is carried out on a daily basis for the vast majority of collateral agreements in accordance with the collateral policy requirements.

Collateral agreements generally include minimum transfer amounts and, in some cases, also **thresholds** that are independent of the credit rating. There are also some agreements with triggers based on the credit rating. In these agreements, for example, the unsecured part of an exposure is reduced in the event of a ratings downgrade or the borrower is required to make additional payments (for example, payments known as 'independent amounts'). The supervisory authorities have specified these contractual provisions as standard for EMIR-compliant agreements.

EMIR requires the exchange of an initial margin in bilateral OTC derivatives transactions in addition to the variation margin. The transfer of initial margin takes account of counterparty-specific thresholds.

Central counterparties

Under EMIR, market players must report all exchange-traded and OTC derivatives to central trade repositories and use predefined steps to settle certain standardized OTC derivatives via central counterparties (known as clearing houses). Furthermore, risk mitigation methods have to be used for OTC derivatives that are not settled centrally through a clearing house. This is intended to minimize counterparty risk.

Any market players not exempted from this clearing obligation must be connected to a central counterparty. The market player concerned may be a direct member of a clearing house or may process its derivative contracts using a bank that is a clearing member of a central counterparty.

DZ BANK is a direct member of the London Clearing House, which is Europe's largest clearing house for interest-rate derivatives, and of Eurex Clearing AG. DZ BANK therefore has direct access to central counterparties for derivatives for the purposes of clearing derivative transactions. In the case of credit derivatives, it also has indirect access to London Clearing House, Paris, (LCH S.A) via clearing broker Deutsche Bank.

8.5.7 Management of closely monitored and non-performing lending exposures

The following descriptions apply to **DZ BANK**. Where required, similar procedures have been implemented in the material **subsidiaries**, which adapt them to the characteristics of the risks faced in their particular business.

Management and monitoring

Early identification of risk is a key component of the management and monitoring of traditional lending business. The system for identifying risk at an early stage is designed to detect emerging risks at the earliest opportunity and return the affected lending exposures to acceptable levels of risk quality. Another objective is to minimize losses from loan defaults.

In order to identify risk at an early stage, criteria are defined as early-warning indicators that should show when exposures must become subject to special, closer monitoring (intensified loan management) and when lending exposures must be transferred to the specialist units responsible for loan restructuring and workout.

The following lists are maintained to closely monitor lending exposures that are subject to intensified management and lending exposures that are in default:
- The **yellow list** for exposures with latent risk
- The **watchlist** for exposures with heightened risk
- The **default list** for exposures with acute risk (exposures that are classified as in default and thus non-performing)

Borrowers are classified as in default and thus **non-performing** either if a material portion of their overall obligation under the loan agreement is past due by more than 90 consecutive calendar days or if it is unlikely that they will meet their payment obligations under the loan agreement in full without the management unit in the Bank sector that granted the loan having recourse to actions such as the recovery of any available collateral. This corresponds to the definition of default specified by the CRR. Borrowers in default are assigned a rating of between 5A and 5E on the VR credit rating master scale.

Non-performing loan exposures are also referred to by the abbreviation NPL. They are monitored using the following key figures:

– **Coverage ratio** (specific loan loss allowances plus collateral as a proportion of the volume of non-performing loans)
– **NPL ratio** (volume of non-performing loans as a proportion of total lending volume)

Workout units become involved at an early stage of identified difficulties. By providing intensified loan management for critical exposures and applying problem-solving strategies, these special units aim to establish the basis for securing and optimizing exposures with heightened risk.

Exposures with heightened risk are generally reviewed, updated, and reported on a quarterly basis. The process is also carried out at shorter intervals if required. This process is supported by IT systems. Prompt internal reporting focused on target groups is a key component of this approach.

Forbearance

Forbearance is a tool for managing non-performing exposures or those close to non-performing. Forbearance measures include **concessions** regarding the obligations under a loan agreement of a borrower in financial difficulties. Such concessions may consist of **contractual modifications**, such as adjustments to covenants or changes to the interest rate, repayment structure, or loan maturity. They may also amount to **refinancing measures**, such as debt-equity swaps, further loan facilities, turnaround or bridging financing, or debt restructuring. The aim of such concessions is to ensure that borrowers who cannot satisfy the terms and conditions of their loan agreements because of their financial circumstances are placed in a position whereby they can repay the loans granted by DZ BANK.

Concessions qualify as forbearance measures if a borrower is found to meet one of the following **criteria** during the monitoring of credit risk:
– The borrower is included in the default list, watchlist, or yellow list with a rating of 4A.
– The borrower is classified with a rating of 4B or worse, regardless of whether the borrower is on one of the lists or not.
– Payments are past due by more than 30 days within a period of 3 months prior to the concession.

The borrower must satisfy all of the following criteria before **exiting forbearance status**:
– The borrower is classified as performing.
– The borrower has undergone a probation period of at least two years. In the case of borrowers who have recovered from a default, the probation period begins with their reclassification as 'recovered'. Borrowers not previously in default begin the probation period when forbearance measures are initiated.
– The borrower has made regular interest payments or repayments of principal during at least half of the probation period.
– No payments are past due by more than 30 days.

Recognition of loss allowances

The description required by GAS 20 A1.7(c) of the methods used for recognizing loss allowances is included in note 5 of the notes to the consolidated financial statements.

8.5.8 Credit-portfolio management

Internal credit-portfolio models operated on a decentralized basis in the material management units are used together with value-at-risk methods to quantify unexpected losses from lending and trading business. The **credit value-at-risk** reduced by the expected loss is referred to as the risk capital requirement for transactions subject to credit risk. The risk capital requirement quantifies the risk of unexpected losses if default or migration events were to materialize.

Expected loss is calculated by multiplying the exposure at default (EAD) by the loss given default (LGD) and by the probability of default (PD). **Exposure at default** equates to the expected outstanding loan or receivable or the potential economic loss in respect of a counterparty if the counterparty defaults, without taking into account any collateral. **Loss given default** refers to the expected percentage loss on default of a borrower, whereby the loss is reduced by any proceeds anticipated from the recovery of **collateral**. **Probability of default** is the probability, calculated on the basis of historical data, that a borrower will not be able to meet their payment obligations within a particular, future period. For the purposes of credit-portfolio management in the Bank sector, this period is 1 year. The probability of default reflects the borrower's current rating and, in individual cases, also takes into account business-specific factors.

When determining credit value-at-risk, **recovery risk** is taken into account as the amount by which the actual loss deviates from the expected recovery rate or – in the case of transactions already in default – from the specific loan loss allowances. Existing netting agreements are included in the measurement of trading exposures subject to default risk.

The credit value-at-risk amounts determined for the management units are aggregated by DZ BANK at **Bank sector** level.

For the purposes of **managing** the credit portfolio, the credit value-at-risk and the decentralized capital buffer requirement are restricted by the **credit risk limit**. The calculation of the decentralized capital buffer requirement is explained in chapter VII.7.2.1. A **traffic light system** is used to monitor Bank sector management units' compliance with the limits specified for credit risk.

8.6 Lending volume

8.6.1 Definition of lending volume

One of the ways in which credit risk is managed is on the basis of the **lending volume**. In the traditional lending business, the lending volume is no more than the total amount of loans already drawn down, plus commitments to third parties. In the trading business (securities business, together with derivatives business and money market business), the lending volume largely equates to the exposure at default.

8.6.2 Reconciliation of lending volume to the consolidated financial statements

To reconcile the lending volume managed at Bank sector level with the lending volume reported on the balance sheet, the volume is broken down by traditional lending business, securities business, derivatives business, and money market business, because this breakdown corresponds to the classes of risks from financial instruments used for external reporting purposes.

Fig. VII.21 shows a reconciliation of the gross lending volume on which the risk management is based to individual balance sheet items in order to provide a transparent illustration of the link between the consolidated financial statements and risk management. For some financial instruments, there are discrepancies in **recognition** and **measurement** between the internal management and external consolidated financial reporting figures owing to the focus on the risk content of the items.

Another reason for the discrepancies between the internal management figures and those in the external consolidated financial statements are differences in the **scope of consolidation**. These differences result from the fact that, in internal credit risk management, only the entities in the Bank sector that contribute significantly to the aggregate risk of the sector are included, whereas, in the consolidated financial statements, all entities subject to consolidation in the Bank sector are included.

The discrepancy in the **securities business** is mainly due to the variations in carrying amounts that arise because credit derivatives are offset against the issuer risk attaching to the underlying transaction in the internal management accounts, whereas such derivatives are recognized at their fair value as financial assets or financial liabilities held for trading in the consolidated financial statements.

The differences between the measurements in the **derivatives business** and those in the **money market business** arise because of differences in the treatment of offsetting items in internal risk management and in external financial reporting. Offsetting items are actually netted for the purposes of risk management, whereas netting of this nature is not permitted in the consolidated financial statements. In addition, add-ons are attached to the current fair values of derivative positions in the internal management accounts to take account of potential future changes in their fair value. By contrast, the external (consolidated) financial statements focus exclusively on the fair values determined on the valuation date, and, unlike in the internal accounts, collateral must not be recognized for risk mitigation purposes.

In money market business, further discrepancies arise between the consolidated financial statements and internal risk management due to the method used for the recognition of repo transactions. In contrast to the treatment in the consolidated financial statements, securities provided or received as collateral are offset against the corresponding assets or liabilities for the purposes of the internal analysis.

8.6.3 Asset class structure of the credit portfolio

The reporting to the Board of Managing Directors on concentrations of credit risk includes a presentation of the credit portfolio broken down by asset class.

This is done by dividing the credit portfolio into business-related homogeneous segments on the basis of characteristics such as industry code to reflect the sector, product type, and the rating system used to determine the credit rating. The characteristics are selected in such a way that the segments are subject to uniform risk factors.

In its role as central institution for the Cooperative Financial Network, DZ BANK provides funding for the entities in the Bank sector and for the cooperative banks. For this reason, the cooperative banks, which are assigned to the asset class **entities within the Cooperative Financial Network**, account for one of the largest loans and receivables items in the group's credit portfolio.

DZ BANK also supports the cooperative banks in the provision of larger-scale funding to corporate customers. Corporate banking exposures relate to business with commercial customers, which is assigned mainly to one of the following asset classes: corporates, commercial real estate customers, and asset-based lending / project finance. The syndicated business resulting from the corporate customer lending business, the direct business of DZ BANK, the real estate lending business of DZ HYP and BSH, and DZ HYP's local authority lending business determine the asset-class breakdown for the remainder of the portfolio.

The total lending volume of the **Bank sector** increased by 5 percent in the year under review, from €447.7 billion as at December 31, 2022 to €471.0 billion as at December 31, 2023. The rise in the lending volume was mainly due to an increase in volume in the 'entities within the Cooperative Financial Network' and 'corporates' asset classes, which went up by €15.7 billion and €4.7 billion respectively compared with the end of 2022.

FIG. VII.21 – BANK SECTOR: RECONCILIATION OF THE LENDING VOLUME

€ billion	Lending volume for internal management accounts		Reconciliation: Scope of consolidation		Reconciliation: Carrying amount and measurement						
	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023		Dec. 31, 2022		
Traditional lending business	379.8	358.9	6.3	14.2	18.5	18.3	404.7	111.0	391.4	103.4	
								111.0		103.5	
								–		-0.1	
								200.4		198.8	
								202.6		200.8	
								-2.2		-2.0	
								93.3		89.1	
Securities business	70.6	66.3	–	–	-17.8	-17.9	52.8	52.8	48.4	48.4	
								8.3		7.5	
								1.0		1.3	
								43.5		39.7	
Derivatives business	13.1	15.4	-0.1	-0.3	-13.3	-19.1	-0.3	-0.3	-4.0	-4.0	
								0.9		1.6	
								16.5		21.5	
								-0.6		-0.4	
								-17.1		-26.6	
Money market business	7.4	7.1	–	0.8	21.4	33.3	28.8	28.8	41.2	41.2	
								17.8		20.0	
								2.2		2.9	
								0.1		0.2	
								7.8		17.1	
								0.9		1.1	
Total	471.0	447.7	6.2	14.7	8.8	14.6	486.0		477.0	Not relevant	Not relevant
								Balance as at Dec. 31, 2023	15.0	3.2%	
								Balance as at Dec. 31, 2022	29.3	6.5%	

Not relevant

DZ BANK accounted for most of the increase, which was driven by its lending business (primarily loans, money market lending, and development loans) with entities in the Cooperative Financial Network. Volumes in the Corporate Banking and Structured Finance divisions grew as well.

As at December 31, 2023, a significant proportion (41 percent) of the Bank sector's lending volume was concentrated in the financial sector (December 31, 2022: 39 percent). In addition to the local cooperative banks, the borrowers in this customer segment comprised banks from other sectors of the banking industry and other financial institutions.

Fig. VII.22 shows the breakdown of the credit portfolio by asset class.

As at December 31, 2023, a significant proportion (62 percent) of **DZ BANK's** lending volume was also concentrated in the **financials** asset class (December 31, 2022: 62 percent). The composition of this asset class is the same both at DZ BANK and in the Bank sector.

Lending volume for the consolidated financial statements	Note
Loans and advances to banks	
of which: loans and advances to banks excluding money market placements	50
of which: loss allowances for loans and advances to banks	59
Loans and advances to customers	
Loans and advances to customers excluding money market placements	51
of which: loss allowances for loans and advances to customers	59
Financial guarantee contracts and loan commitments	99
Bonds and other securities	
of which: financial assets held for trading/bonds excluding money market placements	53
of which: financial assets held for trading/promissory notes and registered bonds	53
of which: investments/bonds excluding money market placements	54
Derivatives	
of which: derivatives used for hedging (positive fair values)	52
of which: financial assets held for trading/derivatives (positive fair values)	53
of which: derivatives used for hedging (negative fair values)	65
of which: financial liabilities held for trading/derivatives (negative fair values)	66
Money market placements	
of which: loans and advances to banks/money market placements	50
of which: loans and advances to customers/money market placements	51
of which: financial assets held for trading/money market instruments	53
of which: financial assets held for trading/money market placements	53
of which: investments/money market instruments	54

FIG. VII.22 – BANK SECTOR: LENDING VOLUME, BY ASSET CLASS

	Bank sector		DZ BANK	
€ billion	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022
Entities within the Cooperative Financial Network	148.6	132.9	148.2	132.5
Financials	44.5	42.7	32.6	31.6
Corporates	80.9	76.1	75.3	70.7
Asset-based lending/project finance	12.7	11.9	12.7	11.9
Public sector	36.0	36.0	12.6	10.6
Real estate (commercial and retail customers)	118.4	119.0	–	–
Retail business (excluding real estate customers)	18.0	18.0	–	–
ABSs and ABCPs[1]	9.2	8.5	9.0	8.2
Other	2.6	2.7	1.0	1.0
Total	**471.0**	**447.7**	**291.5**	**266.6**

1 ABSs = asset-backed securities, ABCPs = asset-backed commercial paper.

8.6.4 Geographical structure of the credit portfolio (excluding Germany)

Fig. VII.23 shows the geographical distribution of the credit portfolio by country group. Borrowers based in Germany are not included in this breakdown. The relevant country for the assignment to a country group is the one in which the economic risk arises. As at December 31, 2023, 67 percent of lending in the Bank sector outside Germany (December 31, 2022: 66 percent) and 62 percent of lending by DZ BANK outside Germany (December 31, 2022: 60 percent) was concentrated in Europe.

FIG. VII.23 – BANK SECTOR: LENDING VOLUME, BY COUNTRY GROUP

	Bank sector		DZ BANK	
€ billion	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022
Europe	54.5	50.3	39.7	36.6
of which: eurozone	35.1	31.5	23.8	21.2
North America	14.5	14.0	13.2	12.7
Central America	0.2	0.2	0.2	0.2
South America	1.0	1.0	1.0	1.0
Asia	7.8	7.3	7.6	7.1
Africa	1.3	1.3	1.3	1.3
Other	2.0	2.2	1.6	1.8
Total	**81.2**	**76.4**	**64.3**	**60.6**

8.6.5 Rating structure of the credit portfolio

In the **Bank sector**, the proportion of the total lending volume accounted for by rating classes 1A to 3A (investment grade) was 89 percent as at the reporting date (December 31, 2022: 87 percent). Rating classes 3B to 4E (non-investment grade) represented 10 percent (December 31, 2022: 11 percent). Defaults, represented by rating classes 5A to 5E, accounted for less than 1 percent of the total lending volume, as had also been the case at the end of 2022.

Rating classes 1A to 3A (investment grade) also dominated lending at **DZ BANK**, where they accounted for 92 percent of the total lending volume (December 31, 2022: 90 percent). Rating classes 3B to 4E (non-investment grade) represented 7 percent as at the reporting date (December 31, 2022: 9 percent). Defaults (rating classes 5A to 5E) accounted for less than 1 percent of the total lending volume as at December 31, 2023, as had also been the case at the end of 2022.

Fig. VII.24 shows the lending volume in the Bank sector and at DZ BANK by rating class according to the VR credit rating master scale.

FIG. VII.24 – BANK SECTOR: LENDING VOLUME, BY INTERNAL RATING CLASS

€ billion		Bank sector		DZ BANK	
		Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022
Investment grade	1A	31.9	29.5	15.6	11.9
	1B	6.2	8.5	4.1	5.0
	1C	162.7	146.6	154.1	139.2
	1D	14.4	13.2	9.1	5.8
	1E	23.9	18.1	13.2	6.4
	2A	25.4	19.4	12.6	7.3
	2B	33.5	26.6	14.6	11.1
	2C	27.7	28.5	13.6	13.8
	2D	32.2	32.9	11.6	12.9
	2E	35.4	41.2	12.7	15.7
	3A	23.6	26.8	5.8	10.0
Non-investment grade	3B	13.4	14.7	5.6	7.5
	3C	10.0	11.9	3.4	4.6
	3D	8.4	8.6	4.8	4.2
	3E	5.9	4.2	3.2	2.0
	4A	3.1	2.3	1.4	0.7
	4B	2.8	3.7	1.6	2.3
	4C	1.3	1.2	0.7	0.6
	4D	0.6	0.9	0.3	0.5
	4E	2.1	3.3	1.0	2.4
Default		3.8	3.1	2.2	2.0
Not rated		2.6	2.6	0.7	0.6
Total		**471.0**	**447.7**	**291.5**	**266.6**

8.6.6 Collateralized lending volume

Fig. VII.25 shows the breakdown of the collateralized lending volume at overall portfolio level by type of collateral.

FIG. VII.25 – BANK SECTOR: COLLATERAL VALUE, BY TYPE OF COLLATERAL

€ billion	Bank sector		DZ BANK	
	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022
Guarantees, indemnities, risk subparticipation	7.0	7.4	1.7	1.8
Credit insurance	6.0	5.6	6.0	5.6
Land charges, mortgages, registered ship and aircraft mortgages	114.1	116.2	1.9	2.4
Pledged loans and advances, assignments, other pledged assets	2.0	2.0	1.2	1.2
Financial collateral	1.4	1.4	0.4	0.9
Other collateral	0.4	0.4	0.3	0.3
Total collateral	**130.8**	**133.0**	**11.4**	**12.2**
Lending volume	400.3	381.4	246.3	225.8
Uncollateralized lending volume	**269.5**	**248.3**	**234.8**	**213.5**
Collateralization rate (percent)	**32.7**	**34.9**	**4.6**	**5.4**

In the case of **traditional lending business**, lending volume is generally reported as a gross figure before the application of any offsetting agreements, whereas the gross lending volume in the **derivatives and money market business** is shown on a netted basis. In the derivatives and money market business, collateral values are relatively low and are in the form of personal and financial collateral. In the **securities business**, there is generally no further collateralization to supplement the collateral already taken into account. For this reason, securities business is not included in the presentation of the collateralized lending volume.

Total collateral value in the **Bank sector** fell from €133.0 billion as at December 31, 2022 to €130.8 billion as at December 31, 2023. The collateralization rate was 32.7 percent as at the reporting date (December 31, 2022: 34.9 percent).

At €11.4 billion, **DZ BANK's** total collateral value as at December 31, 2023 was also down year on year (December 31, 2022: €12.2 billion). The collateralization rate had declined to 4.6 percent as at the reporting date (December 31, 2022: 5.4 percent).

8.6.7 Volume of closely monitored and non-performing loans

Closely monitored loans and forborne exposure

Fig. VII.26 shows the volume of loans on the three monitoring lists – **yellow list**, **watchlist**, and **default list** – and the forborne exposure also included in these lists. A further item in the table shows the exposure managed as forborne but not subject to intensified loan management, i.e. not included in the lists.

FIG. VII.26 – BANK SECTOR: CLOSELY MONITORED LENDING VOLUME AND FORBORNE EXPOSURE

	Bank sector		DZ BANK	
€ million	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022
Yellow list lending volume	3,786	3,458	2,665	2,608
of which: forborne exposure	626	151	463	149
Watchlist lending volume	4,901	6,221	3,094	4,458
of which: forborne exposure	999	919	741	763
Default list lending volume	3,792	3,124	2,185	2,021
of which: forborne exposure	1,473	1,536	884	1,063
Total lending volume on monitoring lists	12,479	12,804	7,943	9,086
of which: forborne exposure	3,097	2,606	2,088	1,975
Off-monitoring-list forborne exposure	327	394	–	–
Total forborne exposure[1]	3,424	2,999	2,088	1,975

1 Both on and off the monitoring lists.

The **closely monitored lending volume** in the **Bank sector** declined by 3 percent from December 31, 2022 to December 31, 2023. This is primarily attributable to a reduction of €1,144 million at DZ BANK. By contrast, the lending volume increased by €488 million at DZ HYP and by €263 million at TeamBank.

The **forborne exposure** rose from €2,999 million as at December 31, 2022 to €3,424 million as at December 31, 2023. The rise was mainly attributable to an increase of €552 million in the forborne exposure at DZ HYP.

At **DZ BANK**, the closely monitored lending volume as at December 31, 2023 was down by €1,144 million year on year, which constituted a decrease of 13 percent. This reduction was mainly attributable to a decline of €1,365 million in the lending volume on the watchlist. That lending volume, in turn, fell as a result of exposures being removed from the closely monitored category and some exposures being transferred to the yellow list or the default list. Ultimately, the yellow-list lending volume increased by €57 million and the default-list lending volume rose by €164 million.

Non-performing loans

As at December 31, 2023, the volume of non-performing loans (NPLs) in the **Bank sector** had risen to €3.8 billion from €3.1 billion as at December 31, 2022. This increase is chiefly due to the rise in non-performing loans of €461 million at DZ HYP, €164 million at DZ BANK, and €83 million at TeamBank. This caused the NPL ratio to advance from 0.7 percent as at December 31, 2022 to 0.8 percent as at December 31, 2023.

Non-performing loans at **DZ BANK** amounted to €2.2 billion as at December 31, 2023 (December 31, 2022: €2.0 billion). Due to the increase in the overall lending volume at DZ Bank, the NPL ratio fell to 0.7 percent (December 31, 2022: 0.8 percent).

Fig. VII.27 shows key figures relating to the volume of non-performing loans.

FIG. VII.27 – BANK SECTOR: KEY FIGURES FOR NON-PERFORMING LOANS

	Bank sector		DZ BANK	
	Dec. 31, 2023	Dec. 31, 2022	**Dec. 31, 2023**	Dec. 31, 2022
Total lending volume (€ billion)	471.0	447.7	291.5	266.6
Volume of non-performing loans (€ billion)[1]	3.8	3.1	2.2	2.0
Balance of loss allowances (€ billion)[2]	1.6	1.3	1.0	0.9
Coverage ratio (percent)[3]	79.7	75.7	78.8	75.5
NPL ratio (percent)[4]	0.8	0.7	0.7	0.8

1 Volume of non-performing loans excluding collateral.
2 IFRS specific loan loss allowances at stage 3, including provisions.
3 Loss allowances as specified in footnote 2, plus collateral, as a proportion of the volume of non-performing loans.
4 Volume of non-performing loans as a proportion of total lending volume.

8.7 Credit portfolios particularly affected by negative macroeconomic conditions

The following sections describe credit portfolios in which the effects of negative macroeconomic conditions were more noticeable than in the rest of the credit portfolios. The figures presented below are included in the disclosures for the lending volume as a whole (see chapter VII.8.6).

The credit risk stemming from the **economic divergence in the eurozone** has lessened considerably thanks to improvements in the credit ratings of Portugal, Italy, and Spain over the course of the year, which means that this portfolio is no longer a special focus of credit risk management. As a result, the disclosures on loans and advances in the Bank sector to corporate borrowers from eurozone periphery countries, which were made in the risk report of the 2023 interim group management report, have now been omitted.

8.7.1 Structural change in the automotive sector

The automotive sector has been in a state of upheaval for a number of years and faces certain challenges compared with other industries, such as low profit margins and a need for high levels of capital, coupled with long investment cycles. The European Parliament's decision to end the sale of passenger cars with internal combustion engines by 2035 will, in the next few years, further accelerate the switch to alternative drives – especially electric vehicles – and keep the pressure on the industry to transform.

Car manufacturers' production operations were particularly impacted by the supply chain disruptions that occurred in 2022 and were caused primarily by shortages of input products (especially semiconductors) and the war in Ukraine. Increased costs for commodities, energy, and transportation also weighed heavily on the industry.

Since the start of 2023, supply chains have stabilized and outstanding orders have been completed. As a result, global passenger car sales recovered in the first half of 2023, before plummeting new car orders – particularly in Germany – heralded a slowdown in demand in the second half of the reporting year. Nevertheless, registrations were up for the year as a whole, including in Germany, but the outlook for 2024 is muted.

The volume of lending in DZ BANK's automotive finance portfolio came to €5.3 billion as at December 31, 2023 (December 31, 2022: €5.0 billion). This portfolio includes loans to automotive suppliers, which are analyzed separately in chapter VII.8.9.3

8.7.2 Commercial real estate finance

Business model and macroeconomic risks

DZ HYP's lending business with corporates includes financing for hotels, office real estate, department stores, shopping malls, and inner-city commercial properties that are mainly used for retail/wholesale businesses not offering day-to-day essentials (retail/wholesale segment). In addition, DZ HYP provides financing to property developers and project developers. It also finances purchases of land for which development plans have been drawn up.

Since 2020, these asset classes have been impacted by a number of general and specific sources of uncertainty. Chief among them was the COVID-19 pandemic initially, although it no longer plays a significant role. Since 2023, the main risk factors have been the jump in prices for construction work and building materials, coupled with much higher interest rates. General political and macroeconomic headwinds are also adding to the uncertainty. Transaction activity was very muted, with predominantly moderate declines in market values in 2023.

The portfolios in question have so far proven to be crisis-resistant with no structural anomalies. Heightened requirements in terms of the underlying value and cash flow performance of the financed real estate have a risk-mitigating effect. Nevertheless, uncertainty persists for commercial real estate finance with regard to the viability of rents and to rising interest rates. This could adversely impact on cash flow, capital expenditure, and market values. For a return to a normal level, a significant and protracted economic recovery and a fall in inflation are required, as well as the sustained stabilization of interest rates.

Risks specific to individual real estate finance segments

In 2022, **hotel** occupancy was almost back at the levels seen before the pandemic and that level was maintained in 2023. The weak economy and high rate of inflation, combined with pressure from competitors and rising costs, continue to be material risk factors for hotel real estate.

Office real estate is subject to uncertainty in terms of the wishes of tenants going forward and their space requirements in light of the new ways of working that involve new space concepts and remote working. In addition, because a huge part of the value creation process of businesses takes place in office real estate, ongoing weakness in the economy can also have an adverse effect on this segment by causing business demand for office space to fall.

Department stores, shopping malls, and inner-city commercial properties that are mainly used for retail/wholesale businesses not offering day-to-day essentials have been seeing a concentration of demand in top locations for some time. The recent upward trend in rents on new contracts is tempered by the uncertainty caused by the sluggish economy and the sharp rise in consumer price levels. Higher energy costs are placing an additional strain on retailers.

Transaction levels in the **property development and project development** market are currently very muted. Prices for construction work and building materials have stabilized significantly but remain higher than at the start of 2021. With the market for property development and project development work largely at a standstill, there is now heightened marketing risk for **plots of land**.

Lending volume by finance segment

As at December 31, 2023, the volume of corporate loans extended by DZ HYP amounted to a total of €46.7 billion (December 31, 2022: €46.8 billion). Of this total, the following amounts were attributable to the aforementioned asset classes as at the reporting date (figures as at December 31, 2022 shown in parentheses):

– Hotel financing: €2.2 billion (€2.4 billion)
– Office real estate financing: €14.8 billion (€14.6 billion)
– Department store financing: €0.5 billion (€0.6 billion)
– Shopping mall financing: €2.6 billion (€2.7 billion)
– Financing for inner-city commercial properties mainly used for retail/wholesale businesses not offering day-to-day essentials: €0.9 billion (€0.8 billion)
– Property developer and project developer financing and financing for land purchases: €5.7 billion (€6.3 billion)

Financing for property developers and project developers and financing for land purchases also include certain portions of the financing for the aforementioned asset classes, in particular the financing of office real estate with a volume of €2.6 billion as at December 31, 2023 (December 31, 2022: €2.5 billion) and residential properties of €1.6 billion (December 31, 2022: €2.1 billion).

8.7.3 Financing for retail customer in the consumer finance business

The economic conditions described in chapter VII.4.2 also impact on the financial strength of retail customers. This was especially apparent in TeamBank's consumer finance business. Some key risk indicators deteriorated over the course of 2023. Among other things, this led to a rise in non-performing loans.

8.8 Credit portfolios particularly affected by acute global crises

The following sections describe credit portfolios in which the effects of acute global crises were more noticeable than in the rest of the credit portfolios. The figures presented below are included in the disclosures for the lending volume as a whole (see chapter VII.8.6).

The lending volume of the **Bank sector** in countries affected by global crises amounted to €4,182 million as at December 31, 2023 (December 31, 2022: €3,983 million). This equates to 0.9 percent of the total lending volume in the Bank sector as at the reporting date, which is unchanged year on year. Taking account of recoverable collateral, the net lending volume was €1,634 million as at December 31, 2023 (December 31, 2022: €1,688 million).

The exposure of **DZ BANK** in countries affected by global crises broke down as at the reporting date as follows (figures as at December 31, 2022 shown in parentheses):

– Gross lending volume: €4,142 million (€3,933 million)
– Equating to 1.4 percent of the total lending volume (1.5 percent)
– Net lending volume: €1,597 million (€1,643 million)

This exposure mainly comprised short-dated trade finance, project finance backed by export credit agencies, and syndicated bank loans.

Fig. VII.28 shows the breakdown of the net lending volume in countries affected by the various crises.

FIG. VII.28 – BANK SECTOR: NET LENDING VOLUME IN COUNTRIES PARTICULARLY AFFECTED BY ACUTE GLOBAL CRISES

	Bank sector		DZ BANK	
€ million	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022
Net lending volume in countries affected directly by the war in Ukraine	**94**	139	**86**	136
of which: Russia	91	130	83	128
of which: Belarus	2	6	2	6
of which: Ukraine	2	2	2	2
Net lending volume in countries affected directly by the Israel-Hamas war	**432**	548	**431**	548
of which: Israel	1	5	1	5
of which: Iraq	2	–	2	–
of which: Egypt	58	144	57	144
of which: Turkey	371	399	371	399
Net lending volume in countries affected directly by the dispute between China and Taiwan	**1,107**	1,002	**1,080**	960
of which: China	1,008	923	982	881
of which: Taiwan	100	80	97	79
Total	**1,634**	1,688	**1,597**	1,643

8.9 Credit portfolios with increased risk content

The credit portfolios with increased risk content are analyzed separately because of their significance for the risk position. The figures presented below are included in the disclosures for the lending volume as a whole (see chapter VII.8.6).

8.9.1 Finance for cruise ships

Cruise ship companies benefited from strong growth in bookings and prices in 2023, which lifted their capacity utilization and booking figures to, or even above, the levels seen in 2019 before the pandemic. Thanks to this return to positive operating results and the comprehensive corporate action taken in the recent past, cruise ship companies' liquidity levels are largely comfortable once more. These companies do need to regain their former strength promptly so that they can service the debt they built up during the pandemic and pay for fleet expansions, some of which are already scheduled, and regain investment-grade credit status in the medium term. In the long term, the industry should continue to capitalize on the appeal of cruises compared with land-based trips in order to combat the effects of inflation, high marketing expenditure, and fluctuating fuel prices.

Cruise ship finance in the Bank sector is mainly brought together under **DZ BANK**. As at December 31, 2023, the volume of cruise ship finance amounted to €994 million (December 31, 2022: €1,052 million). Collateral worth €644 million was available as at December 31, 2023 (December 31, 2022: €722 million). Of this amount, €612 million was attributable to export credit insurance (December 31, 2022: €652 million).

8.9.2 Finance for cruise ship building

A distinction is made between cruise ship finance and the financing of cruise ship building. This segment, which only affects **DZ BANK** in the Bank sector, is still undergoing a large-scale transformation process. In consultation with the parties ordering cruise ships, a base level of capacity utilization has been secured for the period until 2025/2026 by spreading out orders on hand. Substantial reductions in production capacity and headcount are planned in order to counteract low capacity utilization over the medium term. Price renegotiations with cruise ship buyers helped to offset the impact of rising energy and procurement costs for the most part. Funding for the cost of the transformation process in this industry is backed by government guarantees. On the back of a number of challenging years, the credit quality of customers in this business segment remains troubled. This will likely still be the case in 2024, meaning that finance for cruise ship building continues to be classified as a portfolio with increased risk content.

The lending volume related to the financing of cruise ship building stood at €337 million as at December 31, 2023 (December 31, 2022: €332 million). Collateral worth €258 million was available as at December 31, 2023 (December 31, 2022: €181 million). Of this amount, €179 million was attributable to export credit insurance (December 31, 2022: €155 million).

8.9.3 Finance for automotive suppliers

In addition to the factors described in chapter VII.8.7.1 that apply to the automotive sector as a whole, conditions remain particularly challenging for automotive suppliers in Germany.

Historical data shows that the automotive supply industry is characterized by high capital requirements but has comparatively low margins and a relatively weak competitive position due to oligopoly-style structures in the automotive manufacturing industry.

It had become clear in 2022 that, compared with their suppliers, car manufacturers are significantly better positioned to be able to adapt to global supply chain disruptions, for example by changing their product mix. Financial performance in the automotive supply industry hinges primarily on the number of manufactured vehicles, which in 2023 was much higher year on year across Europe due to the backlog of orders being processed, but it was still well below its record level from 2017.

The technology and development expertise of major global suppliers will ensure that they remain the partner of choice for vehicle manufacturers around the world. Over the medium term, Asia is expected to be a significant source of growth stimulus in the coming years, even though growth rates in China are slowing. The same goes for Chinese manufacturers, who are operating more and more on a global scale. As new technologies and the demand associated with these often evolve in a very dynamic and unpredictable manner, such opportunities for growth also come with increased risks. The risks include the uncertainty surrounding future drive systems and vehicle designs, as well as geopolitical tensions, especially with regard to China. Against this backdrop, finance for automotive suppliers continues to be classified as a portfolio with increased risk content.

As at December 31, 2023, loans to companies in the automotive supply industry, which fall into **DZ BANK's** 'corporates' asset class, totaled €3,338 million (December 31, 2022: €3,113 million).

8.9.4 Finance for borrowers in the clothing and textile industry

The clothing and textile industry tends to be sensitive to changes in the economic environment and inflation, and is also marked by fierce competition. The industry suffered from lengthy store closures during the pandemic. Since the middle of 2022, high prices have particularly eroded household purchasing power, with risks concentrated in the mid-range price segment. Demand in the upper and lower price segments, by contrast, has fared better. High freight costs, increased commodity prices, and high energy and rental costs in brick-and-mortar retail, combined with the weak euro at the start of the retail season, led to a significant rise in costs and weighed heavily on the affected companies' financial performance. Current revenue growth is price-led or attributable to the release of pent-up demand following the end of the pandemic.

The decline in revenue (adjusted for inflation) seen in 2023 and the cautious consumer mood will likely continue in 2024 and affect all sales formats (brick-and-mortar retail and online sales). Deteriorating macroeconomic fundamentals do not make a turnaround likely in 2024 either. As a result, finance for borrowers in the clothing and textile industry is classified as a portfolio with increased risk content. Within the Bank sector, the lending exposure to the clothing and textile industry is concentrated at **DZ BANK**.

As at December 31, 2023, DZ BANK's lending volume in this industry was €1,690 million (December 31, 2022: €2,077 million).

8.9.5 Finance for borrowers in the construction industry and for home improvement stores

Given their above-average sensitivity (with a time lag) to changes in the wider economy and the fierce level of competition, the construction industry and home improvement stores have been battling several negative factors for quite a while.

The rise in construction costs, the current interest-rate environment, and the policy situation are placing a particular burden on residential construction. These factors have significantly depressed demand across the entire industry.

The number of completed homes is expected to keep falling in 2024 and the number of residential planning permissions is also expected to decline further. The forecast level of orders on hand in industrial, commercial, and public-sector construction has also been adjusted downward and therefore will not make up for the reduction in orders for residential construction. Overall, capacity utilization is expected to go down in the construction segment.

Since the middle of 2022, substantial price increases and the rise in interest rates have severely dampened the level of consumer demand experienced by **home improvement stores**. The situation has been further exacerbated by current geopolitical tensions and the resulting uncertainty spreading among consumers. In light of these developments, a turnaround in consumer demand is not currently foreseeable.

Against this backdrop, finance for borrowers in the construction industry and for home improvement stores is now classified as a portfolio with increased risk content.

The lending volume in this portfolio is mainly attributable to **DZ BANK**. DZ BANK’s exposure as at December 31, 2023 amounted to €6,776 million (December 31, 2022: €5,985 million).

8.10 Risk position

8.10.1 Risks in the entire credit portfolio

The risk capital requirement for credit risk is based on a number of factors, including the size of single-borrower exposures, individual ratings, collateral, and the industry sector of each exposure.

As at December 31, 2023, the **risk capital requirement** in the Bank sector was €3,971 million (December 31, 2022: €3,766 million). The year-on-year rise was mainly attributable to DZ BANK. The corresponding **limit** was €4,988 million (December 31, 2022: €6,387 million). A scheduled review and adjustment of credit risk limits was carried out at the start of the year. At the level of the DZ BANK Group, the limits were reduced by €1,399 million to €4,988 million overall, in accordance with the risk limit utilization.

DZ BANK’s credit value-at-risk as at December 31, 2023 amounted to €2,359 million (December 31, 2022: €2,254 million). The year-on-year rise in credit risk was mainly attributable to higher volumes of lending in business with cooperative banks. The corresponding **limit** was €2,760 million (December 31, 2022: €2,854 million).

Fig. VII.29 shows the credit value-at-risk together with the average probability of default and expected loss.

FIG. VII.29 – BANK SECTOR: FACTORS DETERMINING THE CREDIT VALUE-AT-RISK

	Bank sector		DZ BANK	
	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022
Average probability of default (percent)	0.3	0.3	0.2	0.2
Expected loss (€ million)	440	460	186	217
Credit value-at-risk (€ million)	3,971	3,766	2,359	2,254

In the analysis of **individual concentrations**, the 20 counterparties associated with the largest credit value-at-risk accounted for 28 percent of the total credit value-at-risk in the **Bank sector** and 40 percent of the total credit value-at-risk at **DZ BANK** as at December 31, 2023. These shares were unchanged compared with the end of 2022 for the Bank sector and DZ BANK. In both cases, the counterparties almost exclusively comprised borrowers from the financial sector (including the cooperative banks) with an investment-grade rating.

8.10.2 Risks in the credit portfolios with increased risk content

The risk capital required in the **Bank sector** and at **DZ BANK** for credit portfolios exposed to increased credit risk is shown in Fig. VII.30.

FIG. VII.30 – BANK SECTOR: CREDIT VALUE-AT-RISK[1] FOR CREDIT PORTFOLIOS WITH INCREASED RISK CONTENT

	Bank sector		DZ BANK	
€ million	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022
Finance for cruise ships	2	14	2	14
Finance for cruise ship building	4	3	4	3
Finance for automotive suppliers	46	32	45	31
Finance for borrowers in the clothing and textile industry	10	13	9	12
Finance for borrowers in the construction industry (including home improvement stores)	50	38	35	25

1 Excluding decentralized capital buffer requirement.

The decline in credit value-at-risk for **finance for cruise ships** was mainly attributable to improved economic conditions in the industry and resulting rating upgrades.

9 Equity investment risk

9.1 Definition and business background

Equity investment risk is defined as the risk of losses arising from negative changes in the fair value of that portion of the long-term equity investments portfolio for which the risks are not included in other types of risk. Equity investment risk also includes the risk of losses arising from negative changes in the fair value of the management units' real estate portfolios caused by a deterioration in the general real estate situation or specific factors relating to individual properties (such as vacancy, tenant default, loss of use).

In the Bank sector, equity investment risk arises primarily at DZ BANK, BSH, and TeamBank.

The entities in the Bank sector hold long-term equity investments largely for strategic reasons, especially to cover markets, market segments, or parts of the value chain in which they themselves or the cooperative banks are not active. These investments therefore support the sales activities of the cooperative banks or help reduce costs by bundling functions. The investment strategy is continuously aligned with the needs of Cooperative Financial Network policy.

9.2 Risk strategy, responsibility, and reporting

Risk strategy requirements must be observed in the management of long-term equity investments. Such management is subject to the principle that equity investment risk (measured as risk capital requirement) may be taken on only if the risk remains below the existing limits.

The **investment portfolio is managed** in line with the provisions of the equity investment risk strategy. At DZ BANK, these provisions are supplemented by rules and instructions, which stipulate, for example, that ongoing investment management and the monitoring of the performance of long-term equity investments are subject to MaRisk requirements.

Decisions on whether to acquire or dispose of **long-term equity investments** are made by the Board of Managing Directors of the entities in the Bank sector in consultation with the relevant committees.

At DZ BANK, the Group Finance division is responsible for **supporting these investments**, whereas at BSH the task falls within the scope of the Central Services/Policy/International division and the Financial Controlling division. At TeamBank, the investments are mainly the responsibility of the Corporate Development division.

Equity investment risk in the Bank sector is **measured and monitored** by DZ BANK. The Board of Managing Directors is kept up to date through the overall risk reports.

9.3 Risk factors

Besides the macroeconomic risk factors described in chapter VII. 4.2, specific risk factors – such as the long-term equity investment's industry, the location of its registered office, and the amount of the investment – are key factors for determining equity investment risk. The possibility cannot be ruled out that a future impairment test on the long-term equity investments held by the entities in the Bank sector could lead to a significant reduction in the carrying amounts of these investments reported on the balance sheet. In the case of non-controlling interests, there is also a risk that key information may not be available or cannot be obtained promptly by virtue of the fact that the investment is a minority stake and this could result in a need to recognize impairment losses.

9.4 Risk management

The carrying amounts of the long-term equity investments are regularly tested for possible impairment in the last quarter of the financial year.

For the real estate directly owned by DZ BANK, the Bank Finance division and the central facility management team perform an impairment test every six months based on the carrying amounts and current valuation reports. If there are any indications during the course of the year of possible impairment, more frequent impairment tests are also carried out.

The risk capital requirement for the vast majority of the long-term equity investments is determined using a Monte Carlo simulation with a 1-year observation period and a confidence level of 99.9 percent (portfolio risk measurement). In this method, portfolio concentrations in sectors and individual counterparties are taken into account by simulating industry-wide and individual investment-related risk factors. The risk capital requirement is influenced, in particular, by the market values of the long-term equity investments, the volatility of the market values, and the correlations between the market values, with market price fluctuations mainly derived from reference prices listed on an exchange. For a minority of the long-term equity investments, a look-through approach is taken in which the individual risk types that exist in each long-term equity investment are measured (differentiated risk measurement).

9.5 Carrying amounts of long-term equity investments and risk position

The **carrying amounts of long-term equity investments** in the **Bank sector** relevant for the measurement of equity investment risk amounted to €3,046 million as at December 31, 2023 (December 31, 2022: €2,858 million). As at December 31, 2023, the carrying amounts of the long-term equity investments of **DZ BANK** came to €2,175 million (December 31, 2022: €1,880 million).

The **risk capital requirement** for equity investment risk in the **Bank sector** was calculated to be €998 million as at the reporting date (December 31, 2022: €997 million). The **limit** was €1,281 million (December 31, 2022: €1,230 million). The **risk capital requirement** for **DZ BANK** as at December 31, 2023 came to €664 million (December 31, 2022: €632 million) with a **limit** of €795 million (December 31, 2022: €767 million).

10 Market risk

10.1 Definition

Market risk in the Bank sector comprises market risk in the narrow sense of the term, and market liquidity risk.

Market risk in the narrow sense of the term – referred to below as market risk – is the risk of loss arising from adverse movements in market prices or in the parameters that influence prices. Market risk encompasses a number of risk subtypes, including interest-rate risk (interest-rate risk in the banking book, interest-rate risk in the trading book), spread risk (constantly monitored component) and migration risk (as intermittent spread risk), currency risk, equity risk, fund price risk, commodity risk, and asset-management risk. Parameters that determine market risk also include a category of risk factors referred to as 'opaque'. These risk factors are parameters that are relevant to measurement but cannot be directly observed and must therefore be derived from quoted market prices using models. For the purposes of measuring and managing risk, market risk is broken down into spread and migration risk, asset-management risk, and general market risk, the last of which encompasses all the other risk subtypes.

Market liquidity risk is the risk of losses that could arise from adverse changes in market liquidity – for example, because of market disruption or a reduction in market depth – such that assets can only be liquidated in markets if they are discounted and that it is only possible to carry out active risk management on a limited basis.

10.2 Business background and risk strategy

10.2.1 Business background

The DZ BANK Group is exposed to considerable market risk in the Bank sector. Market risk arises mainly in connection with BSH, DZ HYP, and UMH in addition to DZ BANK. The assumption of market risk by these entities in the Bank sector is primarily attributable to the DZ BANK Group's strategic focus on the Cooperative Financial Network. This strategy means that each entity in the DZ BANK Group specializes in certain types of product with a corresponding impact on the respective entity's risk profile.

Market risk arises in the Bank sector mainly as a consequence of the following business activities:
- **DZ BANK**: own trading activities; traditional lending business with non-retail customers
- **BSH**: building society operations aimed at financing privately owned real estate; traditional lending business; securities portfolios
- **DZ HYP**: financing for real estate and local authorities; portfolios of securities held to manage liquidity and cover assets
- **UMH:** own-account investing activities; guarantee obligations to customers contained in Riester fund-linked savings plans and guarantee funds

Liabilities and – where present in a group entity – assets related to direct pension commitments are a further source of market risk. Market liquidity risk arises primarily in connection with securities already held in the portfolio as well as funding and money market business.

10.2.2 Risk strategy

The following principles for managing market risk apply to the entities in the **Bank sector**:
- Market risk is only taken on to the extent that it is necessary to facilitate attainment of business policy objectives.
- The assumption of market risk is only permitted within the existing limits.
- Statutory restrictions, provisions in the Articles of Association, or other limitations enshrined in the risk strategy that prohibit the assumption of certain types of market risk for individual management units are observed.

The entities in the Bank sector pursue the following strategies in relation to the individual **types of market risk**:
- Spread and migration risk is consciously and selectively assumed and managed within the limits.
- Interest-rate risk associated with the original business purpose of the management units is kept within defined limits.
- In contrast, interest-rate risk from pension obligations and market risk from assets (generally funds) held to meet defined benefit obligations are accepted and included in the calculation of risk-bearing capacity.
- Equity risk and fund price risk are consciously assumed within the limits in place and actively managed.
- Virtually all currency risk is eliminated.
- Commodity risk is assumed only to a very small degree.

Market liquidity risk is consciously assumed following an analysis that takes into account the prevailing liquidity.

10.3 Risk factors

Spread and migration risk, interest-rate risk, equity risk, fund price risk, and currency risk are caused by changes in the **yield curve**, **credit spreads**, **exchange rates**, and **share prices**.

Spread risk, including migration risk, is the most significant type of market risk for the entities in the Bank sector. **Wider credit spreads** are an indication that markets believe credit quality has deteriorated. If credit spreads were to widen, this would therefore lead to a fall in the fair value of the government and corporate bonds affected. Fair value losses of this nature could have a temporary or permanent adverse impact on capital. The widening of credit spreads can be triggered by the macroeconomic risk factors described in chapter VII.4.2.

In the context of the **asset management activities** brought together under UMH, the **geopolitical tensions** described in chapter VII.4.2.1 could cause stock market turbulence, which could, in turn, negatively affect the shares held as part of pension products if the turbulence gave rise to fair value losses.

There is also a risk that **rising interest rates** (see chapter VII.4.2.6) could cause the fair values of fixed-income funds to fall. Particularly in the case of pension schemes with an unfavorable duration asymmetry and a high volume of fixed-income funds, this may mean that the guarantee commitments given to customers cannot be met from the investment instruments in the products. The pension products mainly consist of UniProfiRente, a retirement pension solution certified and subsidized by the German government. The amounts paid in during the contributory phase and the contributions received from the government are guaranteed to be available to the investor at the pension start date. The pension is then paid out under a payment plan with a subsequent life annuity. If UMH has to provide additional capital to be able to meet its guarantee commitments, this could have a detrimental impact on the financial performance of the DZ BANK Group.

10.4 Organization, responsibility, and reporting

Market risk in the **Bank sector** is managed on a decentralized basis by the individual management units within the centrally specified limits for the capital requirement for market risk. Each unit bears responsibility for the risk and performance associated with each portfolio. Responsibility for managing risk within a management unit is normally brought together under a local treasury unit.

One exception is **DZ BANK**, where portfolios are managed at the level of subordinate organizational units (group, department, division). In this case, the relevant traders bear direct responsibility for risk and performance. The organizational units are structured in such a way that the responsibility for the marketing of certain types of product is assigned in each case to a trading division with product responsibility.

Key figures for market risk are reported at sector level and for DZ BANK to the **Group Risk and Finance Committee** in the quarterly overall risk report.

10.5 Management of market risk

10.5.1 Central market risk measurement

Central market risk measurement in the overall portfolio

Various components are used to quantify market risk in the Bank sector from a present value perspective. These components are combined to determine the aggregate risk capital requirement for market risk, taking into account the effects of concentration and diversification. The risks arising in connection with the assets and liabilities associated with direct pension commitments are also factored in. The models are operated centrally by DZ BANK and are fed with input data provided by the management units on each trading day. Sector-wide standards and rules are in place to ensure that the modeling is appropriate.

The first component of the measurement approach creates a spread and migration risk model based on a **Monte Carlo simulation**. It determines the combined spread and migration risk over a longer-term (strategic) horizon of 1 year with a confidence level of 99.9 percent. Whereas spread risk quantifies credit-risk-related losses from financial instruments in a short-term view of value-at-risk, this becomes the combined spread and migration risk in the risk capital requirement over a longer-term perspective. For this reason, migration risk is not shown in the table of values-at-risk in Fig. VII.31.

The second component is a value-at-risk model based on a **historical simulation** in which the general market risk is determined from a short-term (operational) perspective over one day and with a unilateral confidence level of 99.0 percent. The day-by-day calculation of market risk is based on a historical observation period of 250 trading days. A number of risk factors, categorized into groups, are included in the risk calculation. The most important risk factor groups include yield curves, basis and credit spreads, share prices, exchange rates, and commodity prices. The model also includes implied volatility in the risk measurement. Drawing on the results of the value-at-risk measurement, a transformation model turns the operational key risk indicators (also taking account of stress events) into a strategic perspective in which a one-year holding period and a confidence level of 99.9 percent are assumed.

In the last step, the results from the spread and migration risk model and from the transformation model are then combined to give the **aggregate risk capital requirement** for market risk.

Central market risk measurement for interest-rate risk in the banking book

For internal sector-wide management purposes, the banking book and trading book are treated in the same way in terms of the models and key risk indicators used, the frequency of risk measurement, and the main risk measurement parameters. To supplement this risk measurement approach in which the banking and trading books are analyzed holistically, interest-rate risk in the banking books of the entities in the Bank sector from a regulatory perspective is managed separately using a present-value approach.

On behalf of the other management units in the Bank sector, DZ BANK also operates a partially centralized model for quantifying periodic interest-rate risk. Overall, these methods are used to record the impact from changes in interest rates, both from an economic perspective (based on present value) and from the angle of net interest income.

Concentrations of market risk

Concentrations in the portfolio affected by market risk are identified by classifying the exposure in accordance with the risk factors associated with interest rates, spreads, migration, equities, currencies, and commodities. This incorporates the effects of correlation between these different risk factors, particularly in stress phases.

10.5.2 Decentralized market risk measurement

Decentralized measurement of general market risk and spread risk

In addition to the models specified in chapter VII.10.5.1, the material **management units** operate their own risk models to satisfy ICAAP requirements from the perspective of the individual institution. With the exception of asset-management risk at UMH, the results from these models are not used to manage market risk on a present value basis in the Bank sector and therefore do not form part of this risk report.

Decentralized measurement of asset-management risk

The risk capital requirement for asset-management risk is determined locally by **UMH** and then added to the risk capital requirement for general market risk and spread risk calculated centrally for the Bank sector. Asset-management risk comprises risks related to guarantee funds and Riester pensions. Following the approach used for the central measurement of market risk, the risk capital requirement for asset-management risk is calculated on the basis of a Monte Carlo simulation, using a confidence level of 99.9 percent and a one-year holding period, and taking into account the specific investment selections made in the customer investment account.

10.5.3 Backtesting and stress tests

The central value-at-risk model is subject to **backtesting**, the purpose of which is to verify the predictive quality of the model. Changes in the value of portfolios on each trading day are usually compared against the value-at-risk calculated using risk modeling. For UniProfiRente, backtesting is carried out on the basis of monthly changes in the value of the portfolio.

Risks arising from extreme market situations are primarily recorded using **stress tests**. The crisis scenarios underlying the stress tests include the simulation of significant fluctuations in risk factors and serve to highlight potential losses not generally recognized in the value-at-risk approach. Stress tests are based on extreme market fluctuations that have actually occurred in the past together with crisis scenarios that – regardless of market data history – are considered to be economically relevant. The crisis scenarios used in this case are regularly reviewed to ensure they are appropriate. The following are deemed to be risk factors: interest-rate risk, spread risk, migration risk, currency risk, equity risk, and commodity risk.

10.5.4 Management of limits for market risk

The starting point for limiting market risk is a limit for the capital requirement for market risk in the **Bank sector** specified as part of operational planning. This limit is broken down into an individual limit for the market risk capital requirement in each management unit.

Within **DZ BANK**, this limit is then further subdivided into a system of limits for the divisions, departments, and groups to appropriately reflect the decentralized portfolio responsibility assigned to these units and the nature of the bank from a regulatory perspective as a trading book institution. Limits are monitored on every trading day.

10.5.5 Mitigating market risk

The entities in the Bank sector use various approaches to mitigate market risk. For example, some market risk from the assets-side business (such as traditional lending business) or from the liabilities-side business (such as home savings deposits) is offset by suitable countervailing liability or asset transactions (such as own issues or securities). These activities are carried out as part of asset/liability management. In other cases, financial derivatives are used for hedging purposes.

As the measurement of market risk is based on the inclusion of the individual items subject to market risk, there is no need to monitor the economic effectiveness of hedges.

10.5.6 Managing the different types of market risk

Management of spread risk and migration risk

Most of the spread and migration risk in the **Bank sector** arises from non-trading portfolios and is consciously assumed within the established limits in accordance with the associated long-term investment strategy. Hedging instruments are also used in carefully selected trading book portfolios. The central measurement of this risk means that the level of the risk on every trading day is transparent. If there is any indication that the ability to bear the spread and migration risk is in jeopardy, Group Treasury at DZ BANK will initiate corrective measures across the sector.

Management of interest-rate risk

Interest-rate risk arising from operating activities at **DZ BANK** and **DZ HYP** is mitigated primarily by means of hedging using interest-rate derivatives, on the basis of either individual transactions or portfolios. At **BSH**, an asset/liability management approach based on the maturities of the securities in the investment portfolio is the predominant method used to manage interest-rate risk arising from the collective building society operations and the traditional lending business, including the interest-rate risk associated with direct pension commitments. Interest-rate derivatives are also used for risk management purposes but are currently of minor significance.

DZ BANK is notably exposed to significant **interest-rate risk from direct pension commitments** in addition to the interest-rate risk arising from operating activities. This risk is consciously assumed within the existing limits.

Management of equity risk and fund price risk

Equity risk and fund price risk from the non-trading portfolios are managed first and foremost by directly changing the underlying exposure. Derivative products are also used within the trading portfolio to keep the type of risk involved within the allocated limits. Some funds are broken down into their constituent parts for the purposes of measuring the risk. In such cases, the risk is not treated as part of fund price risk, but is managed within the type of market risk determined for the constituent part concerned.

Management of asset-management risk

Asset-management risk arises from minimum payment commitments given by **UMH** and/or its subsidiaries for guarantee products. The risks from these guarantee products are managed mainly by using asset allocation. Asset-management risk is reported using a separate internal system and is monitored regularly by UMH.

10.6 Management of market liquidity risk

The calculation of general market risk in the Bank sector using the transformation model and the spread and migration risk model takes market liquidity risk into account.

Within the transformation model, stress events are expressly integrated into the analysis when market risk is transferred from an operating perspective to a strategic perspective. The change in risk factors in these events is based on the assumption that it is not possible to make changes to the exposures in the portfolio of the Bank sector over a specified period.

The spread and migration risk model implicitly factors in phases of diminishing market liquidity via the calibration of the credit spread volatility included in the model. The estimation of volatility based on market data from the recent past also uses a lower limit determined from longer-term data. This prevents any low level of credit spread volatility in a calm market environment with normal liquidity from being transferred directly into the model parameters.

10.7 Risk position

10.7.1 Value-at-risk

FIG. VII.31Fig. VII.31 shows the average, maximum, and minimum values-at-risk measured for the Bank sector and DZ BANK over the reporting year, including a further breakdown by type of market risk. In addition, Fig. VII.32 shows the change in market risk for the Bank sector by trading day in the reporting period. In both figures, the value-at-risk relates to the **trading and banking books for regulatory purposes**.

As at December 31, 2023, the value-at-risk for the **interest-rate risk in the banking book for regulatory purposes** was as follows (prior-year figures in parentheses):
- **Bank sector**: €48 million (€54 million)
- **DZ BANK**: €9 million (€11 million)

The decline in interest-rate risk in the banking book for regulatory purposes in the Bank sector and at DZ BANK is due to particular scenarios no longer being included in the rolling observation period in the risk model.

The value-at-risk for interest-rate risk in all of the portfolios and the value-at-risk for interest-rate risk in the banking book for regulatory purposes are calculated using identical risk models. Variations in risk values are attributable directly to differences in the calculation bases used for the various portfolios.

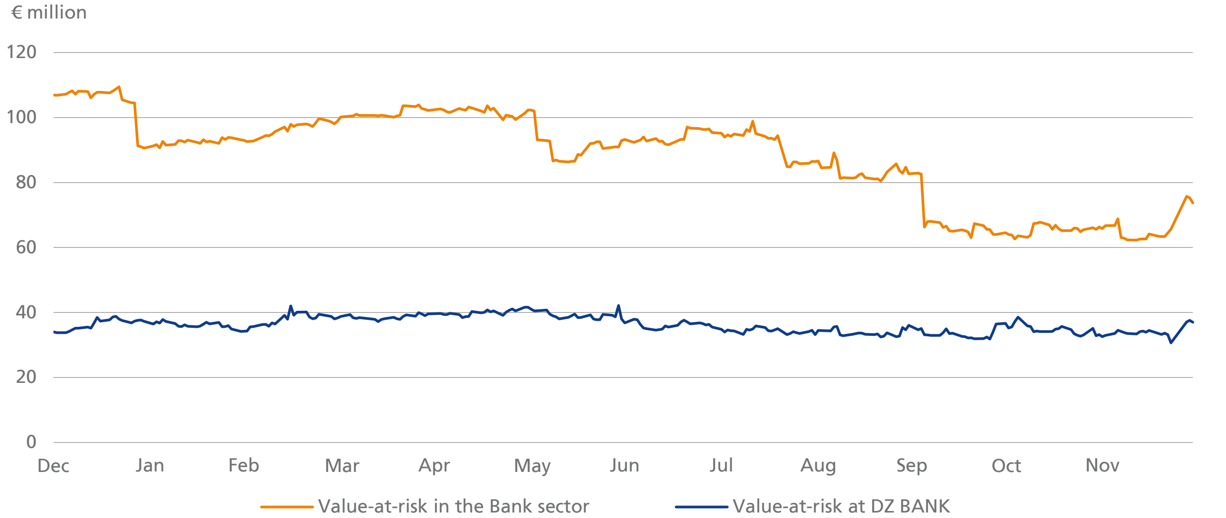
The decrease in value-at-risk in the Bank sector from €107 million as at December 31, 2022 to €74 million as at December 31, 2023 is mainly attributable to a reduction in spread risk, in addition to the diversification effect. This is due to particular scenarios no longer being included in the rolling observation period in the risk model.

FIG. VII.31 – BANK SECTOR: CHANGE IN MARKET RISK BY RISK SUBTYPE[1, 2, 3]

	Interest-rate risk		Spread risk		Equity risk		Currency risk		Commodity risk		Aggregate risk[4]	
€ million	Bank sector	DZ BANK	Bank sector	DZ BANK	Bank sector	DZ BANK	Bank sector	DZ BANK	Bank sector	DZ BANK	Bank sector	DZ BANK
Dec. 31, 2023	**49**	**10**	**58**	**31**	**9**	**3**	**5**	**4**	**2**	**1**	**74**	**37**
Average	56	13	68	34	11	3	4	3	2	1	88	36
Maximum	69	26	75	39	16	5	6	5	3	2	109	42
Minimum	42	7	52	26	7	2	1	1	2	1	62	31
Dec. 31, 2022	**53**	**12**	**70**	**31**	**11**	**2**	**3**	**3**	**3**	**2**	**107**	**34**

1 The disclosures relate to general market risk and spread risk. Asset-management risk is not included.
2 Value-at-risk with 99.0% confidence level, 1-day holding period, 1-year observation period, based on a central market risk model for the Bank sector. Concentrations and effects of diversification were taken fully into account when calculating the risks.
3 Including funds, if not broken down into constituent parts.
4 Due to the diversification effect between the market risk subtypes, the aggregate risk does not tally with the total of the individual risks.

FIG. VII.32 – BANK SECTOR: CHANGE IN MARKET RISK BY TRADING DAY[1]



1 Value-at-risk with 99.0% confidence level, 1-day holding period, 1-year observation period, based on a central market risk model for the Bank sector. Concentrations and effects of diversification were taken fully into account when calculating the risks.

10.7.2 Risk capital requirement

As at December 31, 2023, the risk capital requirement for **market risk** in the **Bank sector** and at **DZ BANK** amounted to €4,169 million (December 31, 2022: €3,730 million) and €1,757 million (December 31, 2022: €1,481 million) respectively, with **limits** of €6,470 million (December 31, 2022: €6,680 million) and €3,000 million (December 31, 2022: €3,175 million) respectively. The rise in risk capital requirements was largely attributable to higher stress test results due to the sharp fall in interest rates in the last quarter of 2023.

The Bank sector's risk capital requirement encompasses the **asset-management risk of UMH**. Asset-management risk as at December 31, 2023 amounted to €273 million (December 31, 2022: €342 million). This decline in risk was mainly due to a model adjustment.

11 Technical risk of a home savings and loan company

11.1 Definition

Technical risk of a home savings and loan company is subdivided into two components: new business risk and collective risk. **New business risk** is the risk of a negative impact from possible variances compared with the planned new business volume. **Collective risk** refers to the risk of a negative impact that could arise from variances between the actual and forecast performance of the collective building society operations caused by significant long-term changes in customer behavior unrelated to changes in interest rates.

BSH's business risk and reputational risk are included within the technical risk of a home savings and loan company.

11.2 Business background and risk strategy

Technical risk of a home savings and loan company arises in the Bank sector in connection with the business activities of **BSH**. This risk represents the entity-specific business risk of BSH. A home savings arrangement is a system in which the customer accumulates savings earmarked for a specific purpose. The customer enters into a home savings contract with fixed credit balance and loan interest rates, so that when the savings phase (which may be subsidized under statutory arrangements) is completed at a later point and a loan is allocated under the contract, they can receive a home savings loan with a fixed rate of interest. A home savings agreement is therefore a combined asset/liability product with a long maturity.

Technical risk of a home savings and loan company is closely linked with the BSH business model and cannot therefore be avoided. Against this backdrop, the **risk strategy** aims to prevent an uncontrolled increase in risk.

11.3 Risk factors
A variance between the actual and planned new business volume (**new business risk**) could lead to lower deposits from banks and customers over the short to medium term. Over the medium to long term, the lower level of new business could also lead to a decrease in loans and advances to banks and customers. Variances between the actual and forecast performance of the collective building society operations caused by significant long-term changes in customer behavior unrelated to changes in interest rates (**collective risk**) could also lead to lower loans and advances to banks and customers and to lower deposits from banks and customers. Over the medium to long term, there is a risk that a lower level of new business and change in customer behavior could lead to a fall in earnings and therefore to a decline in capital.

11.4 Responsibility, reporting, and risk management
BSH is **responsible** for managing the technical risk of a home savings and loan company within the Bank sector. This includes measuring the risk and communicating risk information to the risk management committees at BSH and to the Board of Managing Directors and Supervisory Board of BSH. Technical risk of a home savings and loan company forms an integral part of the DZ BANK Group's internal **risk reporting system**.

A special collective simulation, which includes the integrated effects of a (negative) change in customer behavior and a drop in new business, is used to **measure the technical risk of a home savings and loan company** on a quarterly basis. The results from the collective simulation for the technical risk of a home savings and loan company are fed into a long-term forecast of earnings. The variance between the actual earnings in the risk scenario and the earnings in a base forecast with the same reference date is used as a risk measure. The variance is discounted to produce a present value. The total present value of the variances represents the technical risk of a home savings and loan company and therefore the risk capital requirement for this type of risk. **Concentrations** of this risk are most likely to arise from new business risks.

Technical risk of a home savings and loan company is **managed** in particular through a forward-looking policy for products and scales of rates and charges, and through appropriate marketing activities and sales management.

11.5 Risk position
As at December 31, 2023, the **risk capital requirement** for the technical risk of a home savings and loan company amounted to €730 million (December 31, 2022: €698 million) with a **limit** of €820 million (December 31, 2022: €785 million). At present, the changes in the parameters 'customer behavior' and 'decline in new business' that are simulated in the risk calculation give rise to stable risk values at a high level.

12 Business risk

12.1 Definition and business background
Business risk refers to the risk that financial performance is not in line with expectations, and this is not covered by other types of risk. In particular, this comprises the risk that, as a result of changes in material circumstances (for example, economic conditions, product environment, customer behavior, market competitors) or inadequate strategic positioning, corrective action cannot be taken to prevent losses.

Business risk mainly affects DZ BANK. DZ BANK's core functions as a **central institution and corporate bank** and **holding company** mean that it focuses closely on the local cooperative banks, which are its customers and owners. In this context, business risk can arise from corporate banking, retail banking, capital markets business, and transaction banking.

12.2 Risk strategy

The objective of the business risk strategy is to specify how business risk is to be managed, taking into account the relevant **business drivers**, and thus contribute to achieving the targets set out in the business strategy. The focus is on preventing both an unplanned increase in risk and potential losses arising from a slump in income or from increases in staff expenses or operating costs.

The following **instruments** are used to support the attainment of targets:
- Forward-looking assessment of success factors and specification of targets as part of the strategic planning process
- Groupwide coordination of risk management, capital allocation, and corporate strategy, together with the leveraging of synergies
- Setting of limits and monitoring

12.3 Risk factors

Over the next few years, the DZ BANK Group is likely to continue to face **increased costs**, and thus reduced profits, in connection with implementing the requirements resulting from **regulatory legislative initiatives**.

Fiercer **competition in retail and corporate banking based on pricing and terms** could give rise to margins that are economically unattractive for the entities in the Bank sector or that do not adequately cover the risk arising from the corresponding transactions.

12.4 Organization, responsibility, and reporting

The management of business risk is a primary responsibility of the **Board of Managing Directors** and is carried out in consultation with the senior management of the material subsidiaries and the heads of the DZ BANK divisions involved. Group management is integrated into a committee structure, headed by the **Group Coordination Committee**. The Group Finance division supports the Board of Managing Directors as part of its role in supervising the activities of the subsidiaries. Details of the committee structure and the supervision of subsidiaries can be found in chapter I.2.2 in 'DZ BANK Group fundamentals'.

Business risk is **reported** to the Board of Managing Directors quarterly as part of the overall risk report. The Board of Managing Directors is also updated monthly about the risk situation and capital situation and about the income situation from an HGB perspective.

12.5 Risk management

The management of business risk is closely linked with the tools used in the **strategic planning process**. It is based on setting targets for the subsidiaries involved in active management and for the divisions of DZ BANK. The strategic planning process is described in chapter I.2.4 in 'DZ BANK Group fundamentals'.

To identify regulatory initiatives with a material impact on the DZ BANK Group and its entities, a **centralized regulation management office** has been set up at DZ BANK. This office establishes direct contact with the relevant units at DZ BANK and the other management units, and organizes regular bank-wide and groupwide dialogue on identified and new strategic regulatory initiatives. It also uses a 'regulatory map' to report to the relevant steering committees, the Board of Managing Directors, and the Supervisory Board.

Business risk in the Bank sector is **quantified** with a confidence level of 99.9 percent using a risk model operated by DZ BANK and centralized data at the level of the DZ BANK Group. The risk model is based on an earnings-at-risk approach with due regard to the definition of economic available internal capital. A Monte Carlo simulation is used to model a probability distribution for the earnings relevant to business risk, which comprise selected income and expense items from the IFRS income statement, with an analysis period of 1 year. This distribution produces the risk capital requirement in the amount of the modeled actual loss.

The broad diversification and sustainability of the business models used by the entities in the Bank sector are intended to prevent excessive **concentrations of income**. As part of a groupwide risk concentration analysis, which itself forms part of the risk inventory check, a review is carried out annually, and on an ad hoc basis as required, to identify concentrations of income and assess their materiality. This aims to ensure that income concentrations are appropriately taken into account in risk-bearing capacity.

12.6 Risk position

As at December 31, 2023, the **risk capital requirement** for business risk (including reputational risk) in the **Bank sector** and at **DZ BANK** amounted to €363 million (December 31, 2022: €43 million) and €335 million (December 31, 2022: €43 million) respectively. The **limit** in the **Bank sector** was €450 million as at the reporting date (December 31, 2022: €280 million). At **DZ BANK**, the **limit** was €410 million (December 31, 2022: €235 million). Reputational risk is included in the figures shown.

The risk capital requirement for business risk increased significantly compared with the end of 2022 due to more conservative planning assumptions concerning parameters with business risk implications. The limit was raised to tie in with this increase in risk.

13 Reputational risk

13.1 Definition and business background

Reputational risk refers to the risk of losses from events that damage confidence, mainly among customers (including the cooperative banks), shareholders, employees, the labor market, the general public, and the supervisory authorities, in the entities in the Bank sector or in the products and services that they offer. Reputational risk can arise either as an independent risk (primary reputational risk) or as an indirect or direct consequence of other types of risk (secondary reputational risk).

Reputational risk can arise in connection with any of the business activities in the entities within the Bank sector.

13.2 Risk strategy

Reputational risk is incorporated into the risk strategy by pursuing the following **objectives**:
– Avoiding loss resulting from reputation-damaging incidents by taking preventive action
– Mitigating reputational risk by taking preventive and responsive action
– Raising awareness of (potential) reputational risk within the Bank sector, e.g. by defining the people responsible for risk and establishing a sector-wide reporting system and set of rules for reputational risk

These objectives are applicable both at the Bank sector level and in the management units. The management units are responsible for complying with the rules and for deciding what suitable preventive and responsive action to take.

The reputational risk strategy is based on the **business strategies** in each management unit and to this end is reviewed at least once a year and adjusted as necessary.

13.3 Risk factors

If the Bank sector as a whole or the individual management units acquire a negative reputation, there is a risk that existing or potential customers will be unsettled with the result that existing **business relationships** might be terminated or it might not be possible to carry out planned transactions. There is also a risk that it will no longer be possible to guarantee the **backing** of stakeholders, such as shareholders and employees, necessary to conduct business operations.

If the transition risks, social risks, and corporate governance risks assessed in connection with **ESG risks** were to materialize, this could give rise to heightened reputational risk.

13.4 Responsibility and risk management
Each management unit is responsible for managing its reputational risk and must comply with the requirements laid down in the set of rules for reputational risk. The principle of **decentralized** responsibility applies equally within the management units. Based on this approach, responsibility for managing reputational risk lies with each division with the involvement of other functions such as communications & marketing, corporate security, and compliance.

Reputational risk in the Bank sector is taken into account within **business risk** and is therefore implicitly included in the measurement of risk and assessment of capital adequacy. At BSH, reputational risk is measured and the capital requirement determined mainly as part of the technical risk of a home savings and loan company.

In addition, the risk that obtaining funding may become more difficult as a consequence of reputational damage is specifically taken into account in liquidity risk management.

The management units follow a stakeholder-based approach in which reputational risk is identified and evaluated from a qualitative perspective depending on the stakeholder concerned.

14 Operational risk

14.1 Definition
Operational risk refers to the risk of losses from human behavior, technological failure, weaknesses in process or project management, or external events.

In the reporting year, the following subtypes of operational risk were material for the Bank sector:
- Compliance risk including conduct risk
- Legal risk
- Information risk including ICT risk
- Security risk
- Outsourcing risk
- Project risk

Other subtypes of operational risk that are not material when viewed in isolation are categorized as ‘Other operational risk’. This category is used to cover operational risks that cannot be allocated to the other subtypes of operational risk and – measured on the basis of risk profile – are of lesser importance.

14.2 Business background and risk strategy
Operational risk can arise in any division of the entities in the Bank sector. DZ BANK as well as DZ HYP and UMH are particularly subject to operational risk.

The management units aim to manage operational risk efficiently. They apply the following principles:
- Reinforce risk awareness
- Handle operational risk openly and largely without penalties
- Avoid, reduce, transfer, or accept risk as optional courses of action
- Manage operational risk on a decentralized basis but within the limits set out in the framework for operational risk
- Ensure that the impact of corporate policy decisions on operational risk is taken into account

14.3 Organization, responsibility, and reporting

Each management unit is responsible for managing its operational risk. The principle of **decentralized** responsibility applies equally within the management units.

One of the purposes of the **framework for operational risk** is to harmonize risk management throughout the sector. The sector-wide coordinated approach to operational risk is also managed by a **committee** assigned to the Group Risk Control working group.

A **DZ BANK** organizational unit responsible for controlling operational risk located within the Group Risk Control & Services division develops the management and control methods based on regulatory requirements and business needs applicable to the Bank sector. This organizational unit ensures that operational risk is monitored independently and is responsible for central reporting on operational risk in the Bank sector and at DZ BANK. Similar organizational units are also in place at the other material entities in the **Bank sector**.

Specialist divisions with central risk management functions are also assigned tasks relating to the management of operational risk. As part of their overarching responsibility, these specialist divisions also perform an advisory and guiding function for the matters within their remit in the relevant entities of the Bank sector.

Because operational risk can affect all divisions in the management units, **local operational risk coordinators** are located in each division and they liaise with central Risk Controlling.

Regular **reports** on loss data, risk self-assessments, risk indicators, and risk capital are submitted to the Board of Managing Directors, the Group Risk and Finance Committee, the Risk Committee, and operational management with the aim of facilitating effective management of operational risk on a timely basis.

14.4 Central risk management

14.4.1 Identifying operational risk

The main tools used to manage and control operational risk in the DZ BANK Group's Bank sector are described below.

Loss database

The collation of loss data in a central database allows the Bank sector to identify, analyze, and evaluate loss events, highlighting patterns, trends, and concentrations of operational risk. In particular, data is recorded for operational risk that materializes and results in a gross loss of €1,000 or more.

Risk self-assessment

All management units assess operational risk using a scenario-supported risk self-assessment process in order to identify and evaluate all material operational risks and ensure maximum possible transparency regarding the risk position. The main potential risks for all first-level event categories as defined by the CRR are calculated and described using risk scenarios. The scenarios are also designed to enable risk concentrations to be identified.

Risk indicators

In addition to the loss database and risk self-assessment, risk indicators are intended to enable risk trends and concentrations to be identified at an early stage and to detect weaknesses in business processes. A system of warning lights is used to indicate risk situations based on specified threshold values. Risk indicators within the Bank sector are collected systematically and regularly.

14.4.2 Measurement of operational risk

An **internal portfolio model** that takes into account loss data and the results from the risk self-assessments is used to determine the risk capital requirement for operational risk in the Bank sector. Within the portfolio model, the distributions of loss frequency and amount are brought together in a Monte Carlo simulation. This determines potential losses that could arise over a period of 1 year with a confidence level of 99.9 percent. The results from the model, combined with the tools used to identify risk, are used to manage operational risk centrally. Alongside the economic risk capital requirement, the model also calculates specific risk contributions for each management unit.

In addition, **risk concentrations** are identified by using separate model-based analyses, taking into account event categories and areas of business specified by regulatory requirements. These risk concentrations could occur in the different areas of business within the entities of the Bank sector.

In addition, a simplified procedure based on the allocation mechanism in the capital model is used to identify **risk factors**. The subsequent analysis is carried out for all standard scenarios. The list of standard scenarios is maintained for use throughout the group and contains a list of general scenario descriptions that are relevant to operational risk in the Bank sector entities.

14.4.3 Limiting operational risk
The limits for operational risk are used as the basis for central monitoring of the risk capital requirement at the Bank sector level. The risk capital requirement for the Bank sector is broken down into risk contributions for each management unit using a risk-sensitive allocation procedure so that the management units in the Bank sector can be monitored centrally. These risk contributions are then monitored centrally using limits for each management unit.

14.4.4 Mitigating and avoiding operational risk
Continual improvement of business processes and control processes is one of the methods used with the aim of **mitigating** operational risk. The transfer of risk by means of insurance or outsourcing as permitted by liability regulations provides further protection.

Operational risk is **avoided**, for example, by rejecting products that can be identified during the new product process as entailing too much risk.

14.5 Operational risk subtypes

14.5.1 Compliance risk including conduct risk

Risk factors
Compliance risk could arise if the compliance and risk management systems implemented in the Bank sector entities prove insufficient to completely prevent or detect breaches of obligations to third parties. Such obligations include legal requirements (laws, regulations) as well as both internal and external agreements. Examples are misuse of confidential information, failure to comply with sanctions or embargoes, data protection infringements, and support – or inadequate preventive measures – for money laundering, terrorist financing, or other criminal offenses. Wrongdoing by employees (conduct risk) forms part of compliance risk.

Effects if risk materializes
Violations of internal rules or legal provisions could render contracts null and void or have legal implications for the entity concerned, for the members of its decision-making bodies, or for its employees. They may give rise, for example, to fines, penalties, retrospective tax payments, or claims for damages by third parties. The reputation of individual entities in the Bank sector and the DZ BANK Group as a whole could also suffer as a result. These effects could reduce the Bank sector entities' appeal as partners in business transactions and consequently lead to losses in value.

Risk management
The basic principles for managing compliance risk applicable to the entities in the DZ BANK Group are described in chapter VII.3.4.5. The data protection measures in place and the code of conduct are also explained in the

same chapter. Measures such as the strict separation of functions, the requirement for verification by a second person, restrictions on IT and building access authorizations, and a sustainability-oriented remuneration system are designed to contain risk, in particular the risk of internal fraud.

14.5.2 Legal risk

Risk factors
Legal risk can arise from legal violations or incorrect application of legal provisions. Legal risk can also arise from changes to the legal position (laws or judgments by the courts) relating to transactions completed in the past.

Effects if risk materializes
If legal risk were to materialize, this could result in official sanctions or the need to pay damages. It is also possible that existing contractual rights could be lost retrospectively or could otherwise not be enforced for legal reasons. These effects could lead to losses and reduce the Bank sector entities' appeal as partners in business transactions.

Risk management
The entities in the Bank sector pursue a strategy of avoiding legal risk. Identified risks are limited and mitigated by means of legal or procedural organizational measures. If the legal position is uncertain, the management units generally adopt a defensive approach.

In the entities of the Bank sector, responsibility for managing legal disputes normally lies with their organizational units responsible for dealing with legal issues. These units continuously monitor proposed legislation and regulatory requirements that are legally relevant, as well as developments in decisions by the courts. Their responsibilities include reviewing and assessing circumstances from a legal perspective and also coordinating any legal proceedings. The latter consists of both defending claims pursued against the entities in the Bank sector and enforcing claims by the management units against third parties. If any legal risk is identified, the management unit concerned assesses the risk parameters in terms of their probability of occurrence and possible impact.

The legal affairs divisions in the Bank sector entities also submit reports on risk-related issues to the member(s) of the Board of Managing Directors with relevant responsibility, independently of the established regular reports on cases pending before the courts.

Accounting for legal risk
In accordance with the relevant (group) accounting rules, loss allowances – or provisions – are recognized to account for potential losses from legal risk.
Disclosures covering the provisions recognized for risks arising from ongoing legal disputes and pre-litigation risks – in particular in connection with capital market, home savings, and credit products – and for risks arising from general banking operations are included in note 67 of the notes to the consolidated financial statements under 'Other provisions'.

14.5.3 Information risk including ICT risk

Risk factors
Information risk arises from a failure to maintain the confidentiality, integrity, availability, or authenticity of information assets. If the risk is in connection with the use of information or communication technology (data media), it is referred to as ICT risk. This also includes cyber risk.

Effects if risk materializes

The processes necessary to conduct operating activities could be impaired if the confidentiality, integrity, availability, and authenticity of information assets is not maintained or if IT systems malfunction or break down. This could, in turn, inflict reputational damage and lead to losses from operational risk.

Risk management

The basic principles for managing information security applicable to the entities in the DZ BANK Group are described in chapter VII.3.4.6. The nature of these principles is described below.

Practically all business processes are carried out electronically using appropriate IT systems. The supporting IT systems are networked with each other and are operationally interdependent.

Processes in the IT divisions of the entities in the Bank sector are designed with risk issues in mind and are monitored using a variety of control activities in order to ensure that information risk is appropriately managed. The starting point is to determine which risks are unavoidable in certain aspects of IT. Detailed requirements can then be specified. These requirements determine the extent to which checks need to be carried out and are intended to ensure that all activities are conducted in compliance with the previously defined risk appetite.

The IT processes are designed, through comprehensive physical and logical precautionary measures, to guarantee the security of information assets and IT systems and to ensure that day-to-day operations are maintained. Measures used by the Bank sector to counter the risk of a partial or complete loss of IT systems include segregated data processing centers in which the data and systems are mirrored, special access security, fire control systems, and an uninterruptible power supply supported by emergency power generators.
Regular exercises are carried out to test defined restart procedures to be used in emergency or crisis situations with the aim of checking the efficacy of these procedures. Data is backed up and held within highly secure environments in different buildings.

Further details on information security management can be found in chapter VII.3.4.6.

DZ BANK's risk assessment methodology for information risk is made available centrally by information security management and applied locally by the managers responsible for the various IT systems using tool-supported control processes. All variances identified in these processes are assessed from the perspective of the associated risks. All information risks classified as material are included in regular information security reports to the Board of Managing Directors.

14.5.4 Security risk

Risk factors

Security risk can arise from inadequate protection of individuals, premises, assets, or time-critical processes. Examples are epidemics or pandemics resulting from the spread of pathogens over a huge area, restrictions on access to workplaces caused by natural disasters or demonstrations, or limitations on the use of resources because of a power outage or other interruption to energy supply. Climate change could lead to more frequent and more severe natural disasters.

Effects if risk materializes

If security risk were to materialize, this could lead to a range of problems from staff shortages to restrictions, or even the loss, of the use of buildings and resources such as IT systems and third-party services. In such eventualities, it is possible that mission-critical processes could not be carried out or could not be carried out on time, which could lead to loss of business and/or compensation claims from customers. Furthermore, such scenarios could also have a negative impact on reputation.

Risk management

The relevant organizational units in the management units prepare requirements for the protection of time-critical business processes, people, premises, and other assets. These requirements are implemented by the departments responsible in each case. In all relevant management units, a comprehensive business continuity management system (with business continuity plans covering time-critical activities and processes) has been established to ensure the continuation of business in the event of process disruption or IT system breakdown. These business continuity plans are regularly reviewed and tested to ensure they are fully functional.

Further details on business continuity management can be found in chapter VII.3.4.6.

14.5.5 Outsourcing risk

Risk factors

The entities in the Bank sector have outsourced activities and processes to third-party service providers to a considerable extent. Outsourcing risk can arise if the service provider fails to comply with the strategic principles established by the management units or the related operational requirements when carrying out the outsourced activities.

The reasons may be as follows:
- Failure of the relevant service provider to comply with regulatory requirements
- Lack of transparency regarding the delivery of the services and little opportunity for control over outsourcing outside the home market
- Highly complex outsourced processes that are far from a standard service
- Potential loss of expertise because of outsourcing of core competencies or knowledge processes
- Defective performance caused by service provider failures or the loss of service provider
  Inadequate management or monitoring of service providers, in particular as a result of a lack of transparency regarding service delivery

Effects if risk materializes

If these risk factors were to materialize, they could lead to a loss of business and to claims for damages from customers. They could also result in a negative impact on reputation.

Risk management

The basic principles for managing outsourcing applicable to the entities in the DZ BANK Group are described in chapter VII.3.4.7.
The process of assessing the risk and determining the degree to which an outsourcing arrangement is material is carried out as part of the analysis of outsourcing risk by the division responsible for the outsourcing with the involvement of a number of reviewing and control units, including compliance, information security, and business continuity management, and in consultation with the local coordinators for operational risk. Internal audit is also involved as part of its auditing activities.

At DZ BANK, external service providers are managed by the department responsible for the outsourcing in accordance with the currently applicable policy for external procurement management. Service meetings are regularly held with service providers to facilitate communication and coordinate the IT services and other services to be provided by the third parties concerned. Compliance with contractually specified service level agreements is monitored, for example, by means of status reports and uptime statistics. The external service providers submit regular reports in which they evaluate and confirm the effectiveness of the general controls and procedures.

Business continuity plans, specific contractual liability provisions, and exit strategies are some of the approaches used to reduce outsourcing risk.

14.5.6 Project risk

Risk factors

Project risk refers to the risk that project requirements will not be completed on schedule. Project risk could arise, for example, from the inadequate clarification of project targets or orders, from deficiencies in subsequent implementation, from communication shortcomings both inside and outside the project, or from unexpected changes in the general parameters applicable to a project.

Effects if risk materializes

If project risk were to materialize, this could mean that the implementation of the project could require exceptional additional funds in excess of the budget (primary project risk). It could also give rise to further costs attributable to the failure to complete project requirements on schedule (secondary project risk). Examples of such costs are additional costs or reduced earnings in the line organization, impairment losses on capital investment related to the project, and penalty payments.

Risk management

In accordance with the statutory requirements that need to be observed, the project organization serves as the framework for implementing projects. The projects as a whole are broken down into portfolios with shared characteristics to enable the projects to be managed in a focused, efficient manner. A committee structure with defined roles and responsibilities is designed to look after the detailed management of the portfolios and the projects assigned to them.

The management of project risk is an ongoing process over the lifecycle of a project and is a component of project management and project portfolio management. Accepting a project risk is a valid option if the project customer believes that the measures to eliminate, reduce, or mitigate the risk are not reasonable in relation to their expected benefit.

14.6 Impact of the war in Ukraine

The monitoring of sanctions necessitates manual transaction checks that entail an increased workload. This may result, for example, in delays to the execution of transactions or, if applicable, penalty interest payments for trading that involves securities subject to sanctions. The resulting operational risks are factored in by means of the hypothetical risk scenarios ‘breaches of sanctions and embargoes’ and ‘incorrect execution of transactions and processes’.

14.7 Losses

Losses from operational risk do not follow a consistent pattern. The overall risk profile can be seen from the total losses incurred over the long term and is shaped by a small number of large losses. Over the course of time, regular fluctuations are evident in the pattern of losses as the frequency of relatively large losses in each individual case is very low. Presenting the change in losses meaningfully therefore requires a sufficiently long and unchanging time horizon for reporting purposes. The data is selected from the loss history for the past four quarters and on the basis of the date on which the expense is recognized in the income statement.

The past four quarters – that is, the period from January 1 to December 31, 2023 – represent the relevant reporting period for an analysis of net losses. Fig. VII.33 shows the internal net losses from loss events reported in this period, classified by operational risk subtype, and a comparison with their long-term mean. Unlike in the 2022 risk report, the distribution of net losses by operational risk subtype is stated as an absolute figure rather than as a proportion of total net losses. Losses that are allocable to more than one subtype are split equally between the relevant subtypes.

In the past four quarters, internal losses both in the **Bank sector** and at **DZ BANK** were dominated by **compliance risk**, **legal risk**, and **other operational risk**. The losses for these risk subtypes were higher than in the prior period. The main reason for the rise in other operational risk is that a mistake was made in the process of adjusting the documents.

Losses did not reach a critical level relative to the expected loss from operational risk at any point during 2023, either in the Bank sector or at DZ BANK.

FIG. VII.33 – BANK SECTOR: NET LOSSES[1] BY OPERATIONAL RISK SUBTYPE

€ million	Bank sector		DZ BANK	
	Jan. 1, 2023 – Dec. 31, 2023	Long-term mean[2]	Jan. 1, 2023 – Dec. 31, 2023	Long-term mean[2]
Compliance risk	8	23	3	14
Legal risk	6	22	4	13
Information risk including ICT risk	3	3	1	1
Security risk	2	2	1	1
Outsourcing risk	3	1	1	0
Project risk	–	1	–	–
Other operational risk	14	8	9	5
Total[3]	**35**	**58**	**19**	**34**

1 Internal losses. Operational losses related to credit risk are not included in this breakdown.
2 The long-term mean is derived from loss data recorded since 2006.
3 Losses that are allocable to more than one operational risk subtype are split equally between the relevant subtypes.

14.8 Risk position

As at December 31, 2023, the capital requirement for operational risk at **Bank sector** level was calculated at €978 million (December 31, 2022: €966 million) with a **limit** of €1,148 million (December 31, 2022: €1,112 million).

As at December 31, 2023, the corresponding requirement at **DZ BANK** was €550 million (December 31, 2022: €554 million). The **limit** as at December 31, 2023 was €651 million (December 31, 2022: €625 million).

Fig. VII.34 shows the structure of the risk profile for operational risk in the Bank sector and at DZ BANK based on **risk subtypes**.

FIG. VII.34 – BANK SECTOR: DISTRIBUTION OF RISK CAPITAL REQUIREMENT FOR OPERATIONAL RISK, BY RISK SUBTYPE[1]

Percent	Bank sector		DZ BANK	
	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022
Compliance risk	30.4	31.7	13.4	15.0
Legal risk	19.4	19.2	8.4	9.3
Information risk including ICT risk	16.9	15.5	6.1	5.3
Security risk	5.0	5.5	1.8	1.9
Outsourcing risk	5.9	5.6	2.3	2.1
Project risk	6.3	6.6	2.6	2.8
Other operational risk	16.0	15.9	8.5	8.1

1 Proportion of the Bank sector's total operational risk capital requirement attributable to each operational risk subtype.

The distribution of the risk capital requirement among the operational risk subtypes in the Bank sector and at DZ BANK remained largely unchanged as at December 31, 2023 compared with the end of the previous year.

Compliance risk and **legal risk** accounted for the most significant proportions of the risk capital requirement. A large proportion of the risk capital requirement for these two risk subtypes was determined by the recorded losses and by the hypothetical risk scenarios for changes to case law and for breaches of sanctions and embargoes. The small decrease in the share of risk capital for compliance risk was predominantly due to adjustments to the underlying hypothetical scenarios for changes to case law and for breaches of sanctions and embargoes. The largest increase in the risk capital requirement was seen in **information risk** including ICT risk. This was mainly attributable to adjustments to the hypothetical hacker-attack scenarios.

Insurance sector

15 Basic principles of risk management in the Insurance sector

15.1 Risk strategy

The principles of risk management in the Insurance sector are based on the risk strategy of the DZ BANK Group for the Insurance sector, which is closely interlinked with the business strategy. Under its risk strategy, R+V aims to assume risk on a conscious, calculated basis within the constraints of the specified risk appetite.

Life actuarial risk is managed with the objectives of holding a broadly diversified product portfolio and of developing existing products while designing new ones. Pension, endowment and risk insurance, working life and semi-retirement products, index-linked products, and unit-linked products are underwritten in order to diversify the life insurance and pension provision portfolios.

The objectives of managing **health actuarial risk** are a risk-conscious underwriting policy, cost/benefit management, the development of existing products, and the design of new products.

The management of **non-life actuarial risk in direct business** aims to optimize portfolios in terms of risk and reward. R+V focuses on business in Germany, offering a full range of non-life insurance products.

In **inward non-life reinsurance business**, R+V also aims to achieve a broad balance of risk across all sectors, diversify geographically around the globe, and optimize the portfolio from a risk/reward perspective.

The management of **market risk** is connected with the following fundamental objectives of risk policy: optimizing the economic risk/return profile, ensuring required returns on investments taking into account individual risk-bearing capacities, achieving defined minimum investment returns in stress scenarios, and conserving hidden assets to ensure consistent earnings. The aim is also to guarantee that there is a sufficient proportion of fungible investments.

In line with the risk strategy for **counterparty default risk**, R+V aims to maintain a high average credit rating for its portfolios, avoid concentrations of issuers at portfolio level, and comply with the limits that have been set for counterparties and debtors of insurance and reinsurance companies.

The risk strategy for **operational risk** aims to further raise awareness of operational risk.

The objective of the **reputational risk strategy** is to promote the image of the R+V brand with due regard to the need for transparency and credibility.

15.2 Organization, responsibility, and reporting

As specified in the own risk and solvency assessment (ORSA), the risk management process encompasses all the steps involved in identifying, analyzing, assessing, managing, monitoring, reporting, and communicating risk. Risk-bearing capacity is reviewed and measured at least once a quarter and the process includes a review of binding key performance indicators and threshold values. Corrective action must be assessed and, where necessary, initiated if a specified index value is exceeded. Risk-bearing capacity and all material risks are then finally evaluated each quarter by the Risk Committee.

Reports are submitted to the Board of Managing Directors of R+V in the event of material changes in risk. Company information that has a bearing on risk exposure is passed to the relevant supervisory bodies at R+V, both quarterly and on an ad hoc basis.

16 Actuarial risk

16.1 Definition and business background

16.1.1 Definition

Actuarial risk is the risk that the actual cost of claims and benefits deviates from the expected cost as a result of chance, error, or change. It is broken down into the following categories defined by Solvency II:
– Life actuarial risk
– Health actuarial risk
– Non-life actuarial risk

Life actuarial risk

Life actuarial risk refers to the risk arising from the assumption of life insurance obligations, in relation to the risks covered and the processes used in the conduct of this business. The following subtypes of life actuarial risk are material for R+V:
– **Mortality risk** describes the risk of loss or an adverse change in the value of insurance liabilities, resulting from changes in the level, trend, or volatility of mortality rates, where an increase in the mortality rate leads to an increase in the value of insurance liabilities.

– **Longevity risk** describes the risk of loss or an adverse change in the value of insurance liabilities, resulting from changes in the level, trend, or volatility of mortality rates, where a decrease in the mortality rate leads to an increase in the value of insurance liabilities.
– **Lapse risk** describes the risk of loss or an adverse change in the value of insurance liabilities, resulting from changes in the level or volatility of the rates of contract lapses, cancellations, renewals, and surrenders.

– **Life expense risk** describes the risk of loss or an adverse change in the value of insurance liabilities, resulting from changes in the level, trend, or volatility of the expenses incurred in servicing insurance or reinsurance contracts.

Health actuarial risk

Health actuarial risk refers to the risk arising from the assumption of health and casualty insurance obligations, in relation to the risks covered and the processes used in the conduct of this business.

Non-life actuarial risk

Non-life actuarial risk refers to the risk arising from the assumption of non-life insurance obligations, in relation to the risks covered and the processes used in the conduct of this business. The following subtypes of non-life actuarial risk are material for R+V:

– **Premium and reserve risk** describes the risk of loss or an adverse change in the value of insurance liabilities, resulting from fluctuations in the timing, frequency, and severity of insured events, and in the timing and amount of claim settlements.

– **Non-life catastrophe risk** describes the risk of loss or an adverse change in the value of insurance liabilities, resulting from the significant uncertainty of pricing and assumptions when recognizing provisions related to extreme or unusual events.

16.1.2 Business background
In the DZ BANK Group, considerable actuarial risk arises from the business activities of R+V. The risk arises from the direct life insurance and health insurance business, the direct non-life insurance business, and the inward reinsurance business.

16.2 Risk factors
In the case of long-term products, which constitute the bulk of R+V's **direct life insurance business**, there is a risk of negative variances over the term of the contracts compared with calculation assumptions because of the length of time covered by the contracts. The relevant risk factors include changes in life expectancy, increasing rates of disability-morbidity, disproportionately sharp cost increases, and a rise in contract lapses. If the actual trends in life expectancy, disability-morbidity, costs, or contract lapses vary from the calculation assumptions, there is a risk over the medium to long term that the gross profit generated from life insurance will decline.

In **health insurance** at R+V, which accounts for a substantial proportion of health actuarial risk, there is a risk of higher claims caused by the behavior of the policyholders and service providers. Subject to certain legal requirements, there is a possibility of adjusting the premiums in the health insurance business, a process in which all actuarial assumptions can be reviewed and modified. Significant premium adjustments could have a negative impact on future new business if rate scales lose their appeal because of high premiums. The number of lapses in the portfolio could also increase as a result.

Environmental pollution and climate change represent additional risk factors in respect of **life and health actuarial risks** because they could have a negative impact on the health of policyholders and increase the number of claim events.

R+V's **direct non-life insurance and inward non-life reinsurance business** involves the provision of cover for a range of disasters. This includes both natural disasters, such as earthquakes, storms, and floods, and man-made disasters. These events cannot be predicted. Generally speaking, there is both the risk of particularly significant individual loss events and also the risk of a large number of loss events that are each not necessarily significant in themselves. As a result, in any one year, the actual impact from the size and frequency of losses could exceed the forecast impact. Climate change represents an additional risk factor in connection with the occurrence of natural disasters. It is reasonable to expect that climate change will lead to an increase in weather-related natural disasters.

The persistently high level of inflation in 2023 represents a cost driver for claims incurred because higher prices for procuring commodities and other items result in higher claims settlement expenses. This may lead to further adjustments to premiums, primarily in residential building insurance and motor vehicle insurance.

Cyber risk is becoming increasingly significant within the underwriting business as a consequence of ongoing digitalization. There is a risk that cyber risk may not be comprehensively set out, or may not be mentioned at all, in insurance terms and conditions, or that it may not be expressly included or excluded (referred to as silent cyber risk).

16.3 Management of life actuarial risk

16.3.1 Risk measurement
The risk for insurance contracts subject to **mortality risk** is modeled with the assumption of a 15 percent permanent increase in mortality.

The risk for insurance contracts subject to **longevity risk** is modeled with the assumption of a 20 percent permanent increase in longevity.

The risk for insurance contracts subject to **lapse risk** is modeled for the following scenarios: for an increase in lapses, a 50 percent rise in the lapse rate; for a decrease in lapses, a 50 percent reduction in the lapse rate; for a mass lapse event, lapse of 40 percent of the contracts.
The overall solvency requirement for **life expense risk** is based on the following stress scenarios: a permanent 10 percent rise in the costs reflected in the measurement of the insurance liabilities and an increase of 1 percentage point in the cost inflation rate.

16.3.2 Risk management in direct life insurance business

Actuarial risk is taken into account by carrying out a prudent cost calculation while products are still in development. This applies to the development of existing products as well as the design of new types of insurance. Safety margins are included in the actuarial assumptions to achieve this. The assumptions are structured in such a way that they not only withstand the current risk situation, but should also accommodate potential changes in the risk position. Actuarial control systems are used to decide whether the cost calculation for future new business needs to be changed. The calculation is also adjusted on an ongoing basis in line with the latest actuarial findings. The appointed actuary carries out reviews as part of product development and during the course of the term of contracts to verify that the actuarial assumptions used are appropriate.

A number of measures are taken to prevent a concentration of risks in the portfolio. Before contracts are signed, extensive risk reviews are carried out to limit **mortality risk**. In general, risk is only assumed in compliance with fixed underwriting guidelines. High levels of individual or cumulative risk are limited by reinsurance.

Generally speaking, the risk is mitigated if the insured risks are diversified. For example, an increase in mortality has an adverse impact on endowment life and risk insurance policies, but at the same time has a positive impact on the **longevity risk** associated with pension insurance.
Cost control tools are used to manage **life expense risk**.

Lapse risk is mitigated by structuring life insurance contracts to provide maximum flexibility should policyholders' circumstances change. A range of different options during the term of an insurance contract enables customers to maintain their contract instead of canceling it. Appropriate design of policyholder participation features and, in particular, the final bonus also counteracts lapse risk.

In addition, advance notice of **policyholder participation features** in the form of declarations of future bonuses is also a key instrument with which to reduce actuarial risk relating to life insurance.

16.4 Management of health actuarial risk

16.4.1 Risk measurement

Health actuarial risk is calculated by combining the capital requirements for the subcategories 'similar to life techniques, health actuarial risk' (risk on health insurance pursued on a similar technical basis to that of life insurance), 'non-similar to life techniques, health actuarial risk' (risk on health insurance pursued on a similar technical basis to that of non-life insurance), and 'health catastrophe risk'.

The methods described in the chapters on life actuarial risk (chapter VII.16.3) and non-life actuarial risk (chapter VII.16.5) are used to measure risk in the subcategories.

Health actuarial risk also includes significant parts of the group's casualty insurance business as well as its health and occupational disability insurance business.

16.4.2 Risk management in health and casualty insurance

Risk management in health insurance business

In the health insurance business, the Insurance sector aims to manage actuarial risk by means of an **underwriting policy**, the features of which are underwriting guidelines and selection of risk, and management of benefits and costs. The risk exposure in the case of large individual risks may be limited by taking out appropriate reinsurance. In many of the health insurance rate scales, deductibles are used to control the extent of claims. Provisions are recognized to ensure that all benefit obligations under insurance contracts can be met. The appointed actuary carries out monitoring as part of product development and over the course of time to verify that the actuarial assumptions used are appropriate.

In accordance with VAG provisions, R+V carries out an annual comparison of its calculations with the insurance benefits it is required to pay. If this comparison of claims for an observation unit within a particular scale of insurance rates reveals a variance that is other than temporary, the relevant **premiums** are adjusted.
All actuarial assumptions are reviewed and specified in consultation with an independent trustee. A safety margin factored into premiums is also intended to ensure that obligations can be met if claims are higher than the level provided for in cost calculations.

In the health insurance business, the **decrement tables** include assumptions regarding mortality and the probability of other relevant withdrawal factors. Under the requirements set out in the German Health Insurance Supervision Regulation (KVAV), these assumptions must be specified and reviewed from the perspective of prudent risk assessment. It is for this reason that a new mortality table is developed annually by the Verband der privaten Krankenversicherung e.V. (PKV) [Association of German private healthcare insurers] in consultation with BaFin. In accordance with statutory provisions, R+V carries out an annual comparison of its calculations with the most recently published mortality tables.

When determining **lapse probabilities** for the purposes of its calculations, R+V uses both its own observations and the latest figures published by BaFin.
Where premiums were adjusted on January 1, 2023, R+V used the new PKV mortality table valid for 2023 to determine both new business premiums and those **premium adjustments** in existing business.

Unisex insurance rate scales are offered in R+V's **new business**. The cost calculation for these rates is not only based on the existing gender breakdown, but also takes into account the expected pattern of switching by existing policyholders to the new rates. The appropriateness of the composition of the portfolio resulting from the calculations is reviewed by actuaries using comparable calculations.

Risk management in casualty insurance business

The risk situation in the casualty insurance division is characterized by the fact that it is fixed-sum insurance and not indemnity insurance. Consequently, the maximum benefit per insured person is restricted to the sum insured.

A risk review also forms part of the underwriting policy in the case of casualty insurance. Premiums are reviewed on an ongoing basis to ensure that they remain appropriate. Claims are assessed on a case-by-case basis.

16.5 Management of non-life actuarial risk

16.5.1 Risk measurement

The capital requirements for **premium and reserve risk** are calculated on the basis of risk factors and volume measures for all branches of insurance in which business is conducted. The risk factors (e.g. the standard deviation as a percentage of the volume measure) describe the degree of threat posed by the risk. The volume measure for the **premium risk** is essentially the net premium income earned in the financial year and in the first and second years after that. The net claims provisions in the form of a best-estimate valuation constitute the volume measure for the **reserve risk**.

The capital requirement for **catastrophe risk** is calculated as an aggregation of four risk modules. These are natural catastrophe risk (broken down into the following natural hazards: hail, storm, flood, earthquake, and subsidence), the catastrophe risk of non-proportional reinsurance in non-life insurance, risk of man-made catastrophe, and other catastrophe risk in non-life insurance. Catastrophe risk is calculated using the volume measures of sums insured and premiums. Risk mitigation through reinsurance is taken into consideration.

To determine the **overall solvency requirement** as part of internal risk assessment, empirical distributions are generated for the relevant parameters for most parts of the portfolio, such as the claim amount and the number of claims per sector and claim type (e.g. basic claims, major claims, catastrophe claims). The value-at-risk can then be determined with the required confidence level directly from the underwriting result modeled in this way, recorded as a loss function. The parameters for the analyzed distributions are set using historical portfolio data and related planning data. They are therefore intended to reflect the actual risk position.

In the case of catastrophe risk in connection with the **direct insurance business**, the risk modeling for calculating basic claims relating to the natural hazard earthquake and basic claims and minor cumulative events relating to the natural hazards hail, storm, and flood is based on mathematical/statistical methods. The minimum and maximum claim amounts for minor cumulative events are derived from the group’s own claims history. Modeling is based on the group’s own claims data. The risk modeling for major cumulative events relating to the natural hazards hail, storm, flood, and earthquake uses probability-based natural hazard models. This approach uses catastrophe claims that have been modeled by external providers for each natural hazard and take account of the specific risk profile.

For the catastrophe risk in its **inward reinsurance business**, R+V deploys a simulation tool for stochastic risk modeling. To model the natural catastrophe risk on an individual contract basis, event catalogs from external providers containing predefined scenarios based on historical observations are used. The event catalogs cover the main countries and natural hazards related to the underwritten risk in the inward reinsurance concerned. In the case of countries and natural hazards for which there is no event catalog, modeling is based on R+V’s own claims history. This involves generating scenarios for the current portfolio on the basis of historical major claims.

For inward reinsurance purposes, modeling based on the group’s own claims history is also used to determine the overall solvency requirement for the risk of **man-made catastrophe**. This involves generating scenarios for the current portfolio on the basis of the historical major claims.

16.5.2 Risk management in direct non-life insurance business

Premium and reserve risk is managed through risk selection, risk-oriented premiums and products, and profit-oriented underwriting guidelines. In order to maintain a balanced risk profile, R+V ensures it has reinsurance cover for major individual risks. Managers use planning and control tools to ensure they are in a position at an early stage to identify unexpected or adverse portfolio or claim trends and to initiate appropriate corrective action in response to the changes in the risk situation. To make these risks manageable, pricing is based on a calculation that uses mathematical/statistical modeling.

The measurement of the overall solvency requirement for **natural catastrophe risk** is supplemented by analysis of the insurance contract portfolio. This analysis carried out with the aid of tools such as the ZÜRS Geo information system (zoning system for flooding, backwater flooding, and heavy rainfall) investigates risk concentrations and changes in these concentrations over time. The use of geographical diversification and the deployment of underwriting guidelines form the basis for managing risks arising from natural disasters.

R+V uses a prospective limit system to verify whether prescribed limits for the risk from natural disasters will be adhered to. The risk exposure reached on the basis of projected business growth is compared against a limit determined from the allocated internal risk capital.

To reduce actuarial risk, R+V purchases facultative and obligatory reinsurance cover, formulates risk exclusions, and designs risk-appropriate deductible models. Risk-bearing capacity is reviewed as part of the reinsurance decision-making process. This is used as the basis for reinsurance structures and liability layers.
The effects of inflation are factored into the costing of insurance rate scales for new business and into premium and index adjustments for in-force business.

16.5.3 Risk management in inward non-life business

R+V counters premium and reserve risk by continuously monitoring the economic and political situation, by managing risk in accordance with its corporate strategy, and by setting insurance rates appropriate to the risk involved. The risk is managed on the basis of an earnings-driven underwriting policy. The assumption of risk is circumscribed by mandatory underwriting guidelines and limits that restrict potential liability arising from both individual and cumulative claims. R+V takes account of economic capital costs when underwriting risk. Compliance with these requirements is monitored.

The material actuarial risks in the inward reinsurance portfolio are catastrophe risk and reserve risk, and also far-reaching changes in the trends underlying the main markets.

Limits are set to support the central management and mitigation of cumulative risks. One of the mechanisms for managing risk is a systematic check on the cumulative authorized limits. If limits are overrun, R+V's Limit Committee is responsible for discussing and making decisions on appropriate action. The portfolio is continuously monitored for material concentrations of risk.

Action that can be taken to mitigate the risk includes management of gross risk and retrocession of parts of the portfolio, taking into account risk-bearing capacity and the effective costs of retrocession. Minimum requirements apply in relation to the credit rating of retrocessionaires. To minimize cumulative risk in connection with natural disasters in Europe, the United States, and other regions of the world to which it is exposed, R+V has entered into a number of retrocession agreements as part of its inward reinsurance business.

R+V monitors the claims rate trend promptly and continuously, allowing it to initiate preventive measures so that it always has a sufficient level of reserves. The reserves position is monitored in a number of ways, including by means of an expert report, which is prepared once a year.

16.6 Claims rates and settlements in non-life insurance

As a result of **IFRS 4 being replaced by IFRS 17**, new principles for the recognition, measurement, and disclosure of insurance contracts have applied since the start of 2023, which differ materially from the method of presentation used until the prior year. The previous basis for calculating the claims rate and settlements under IFRS 4 no longer applies. As a result of the differences in methods between IFRS 17 and IFRS 4, the 2022 figures can only be compared with those for 2023 to a very limited extent.

The **claims rate in direct non-life insurance and inward non-life reinsurance business** under **IFRS 4** was calculated as the ratio of claims incurred (including claim payments and changes in the provision for claims outstanding in accordance with section 341g HGB), net of reinsurance, to the premiums earned. Under **IFRS 17**, this figure is now calculated as the ratio of changes in the liabilities for incurred claims (including payments for claims) to insurance revenue.

Settlements under **IFRS 4** were calculated as the ratio of insurance expense for prior years in which claims were incurred to provisions for claims outstanding for prior years in which claims were incurred, including inward reinsurance. Under **IFRS 17**, by contrast, settlements are calculated as the ratio of liabilities for incurred claims for prior years in which claims were incurred to the actual payments for those years – net of changes in claims and benefits and risk adjustments – excluding inward reinsurance.
Changes in claims rates and settlements (net of reinsurance) in direct non-life insurance and inward non-life reinsurance business are shown in Fig. VII.35.

FIG. VII.35 – INSURANCE SECTOR: CLAIMS RATES[1] AND SETTLEMENTS[2] IN NON-LIFE INSURANCE

	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Claims rate according to IFRS 4										
Including major/natural disaster claims		73.9	73.8	76.5	76.3	76.2	76.6	76.1	76.2	75.5
Excluding major/natural disaster claims		66.1	68.0	70.4	72.7	71.1	72.8	72.3	74.0	73.8
Claims rate according to IFRS 17										
Including major/natural disaster claims	77.3	73.2								
Excluding major/natural disaster claims	68.4	64.3								
Settlements according to IFRS 4		2.9	2.9	1.9	0.6	1.1	3.1	3.6	1.6	2.1
Settlements according to IFRS 17	1.0	2.4								

Not available

1 Direct non-life insurance business and inward non-life reinsurance.
2 IFRS 4: direct non-life insurance business and inward non-life reinsurance; IFRS 17: direct non-life insurance business.

16.7 Risk position

As at December 31, 2023, the **overall solvency requirement** for **life actuarial risk** amounted to €946 million (December 31, 2022: €1,060 million) with a **limit** of €1,060 million (December 31, 2022: €1,200 million). The decrease in risk was due to lower lapse risk resulting from the fall in interest rates for longer maturities.

As at the reporting date, the **overall solvency requirement** for **health actuarial risk** was €253 million (December 31, 2022: €167 million) with a **limit** of €285 million (December 31, 2022: €300 million). This increase in risk was due to the higher volume of insurance liabilities, which was also a consequence of the aforementioned fall in interest rates.

The **overall solvency requirement** for **non-life actuarial risk** amounted to €1,707 million as at December 31, 2023 (December 31, 2022: €1,878 million) with a **limit** of €1,900 million (December 31, 2022: €3,000 million). This reduction in risk resulted primarily from changes to the reinsurance structure.

17 Market risk

17.1 Definition and business background

17.1.1 Definition

Market risk describes the risk arising from fluctuation in the level or volatility of market prices of assets, liabilities, and financial instruments that have an impact on the value of the assets and liabilities of the entity. It reflects the structural mismatch between assets and liabilities, in particular with respect to their maturities. In accordance with the breakdown specified in Solvency II, the bulk of credit risk within market risk is assigned to spread risk. The other parts of credit risk are measured within counterparty default risk and other risk types.

Market risk is broken down into the following subcategories:

- **Interest-rate risk** describes the sensitivity of the values of assets, liabilities, and financial instruments to changes in the term structure of interest rates or to the volatility of interest rates.

- **Spread risk** describes the sensitivity of the values of assets, liabilities, and financial instruments to changes in the level or volatility of credit spreads above the risk-free interest-rate term structure. Default risk and migration risk are also included in this subcategory. The credit spread is the difference in interest rates between a high-risk and a risk-free fixed-income investment. Changes in the credit risk premiums lead to changes in the market value of the corresponding securities.

- **Equity risk** describes the sensitivity of the values of assets, liabilities, and financial instruments to changes in the level or volatility of the market prices of equities. Equity investment risk is also a part of equity risk. Equity risk arises from existing equity exposures as a result of market volatility.

- **Currency risk** describes the sensitivity of the values of assets, liabilities, and financial instruments to changes in the level or volatility of exchange rates. Currency risk arises as a result of exchange rate volatility either from investments held in a foreign currency or the existence of a currency imbalance between insurance liabilities and investments.

- **Real-estate risk** describes the sensitivity of the values of assets, liabilities, and financial instruments to changes in the level or volatility of the market prices of real estate. Real-estate risk can arise as a result of negative changes in the fair value of real estate held directly or indirectly. This may be the result of a deterioration in the specific characteristics of the real estate or a general change in market prices (for example in connection with a real estate crash).

17.1.2 Business background

Market risk arises in the insurance business as a result of investing activities. It is caused by the timing difference between the payment of premiums by the policyholder and the payments for claims and benefits by the insurance company, and by endowment-type business in personal insurance.

17.2 Risk factors

The **widening of spreads** could be triggered by macroeconomic risk factors. These factors are the risks to the economy from geopolitical tensions and resulting trade friction and from a widespread economic downturn in Germany, in Europe, or worldwide (see chapters VII.4.2.1 and VII.4.2.2).

A further **rise in interest rates** and a widening of bond spreads could lead to a further reduction in the fair values of investments. Falls in fair value caused by a rapid rise in interest rates or the widening of spreads could have a temporary impact on operating profit at R+V, or a permanent impact if investments have to be sold. A negative change in the fair values of investments associated with a widening of spreads in isolation could also have an adverse impact on R+V's solvency situation.

A **fall in interest rates** would have a positive valuation effect on R+V's portfolio of interest-bearing exposures in the near term. A renewed period of low interest rates could, in the medium term, pose additional challenges for R+V in its life insurance business in respect of the guaranteed returns that it needs to generate.

Further information about unexpected movements in the interest-rate market can be found in chapter VII.4.2.6.

Other risk factors associated with investing activities could arise from **sustainability risk**. For example, action by policymakers, decisions by the courts, or the withdrawal of licenses could have an adverse effect on the price of corporate bonds or on the share prices of equities held in the R+V portfolio and exposed to transition risk. The value of the portfolio could also be hit by rising inflation as a consequence of higher energy and carbon prices.

Furthermore, R+V is exposed to a risk of reputational damage if it invests in businesses that are responsible for environmental pollution, fail to adhere to social norms, neglect their data protection responsibilities, or inadequately implement measures to prevent corruption, fraud, or tax evasion.

The **real estate markets underwent a correction** in 2023, which was reflected in impairment losses on individual investments at R+V.

17.3 Risk management

17.3.1 Market risk measurement

The measurement of market risk involves analyzing shock scenarios specified in **Solvency II** requirements, in some cases supplemented by the group's own parameterization.

The capital requirements for **interest-rate risk** are determined on the basis of shock scenarios calculated for an increase in interest rates and a decrease in interest rates. R+V uses the shock factors in the standard formula to calculate the overall solvency requirement for interest-rate risk. It also includes a capital buffer that takes into account changes in the direction of interest-rate trends.

The capital requirements for **spread risk** are calculated using a factor approach based on the relevant lending volume. The level of the shock factor is determined by the security's rating and the modified duration of the investment. With loan securitizations, a distinction is made between single, double, and multiple securitization structures. Depending on which is applicable, different rating-dependent shock factors are used. R+V uses its own shock factors, based on a portfolio model, to calculate the overall solvency requirement.

The capital requirements for **equity risk** are determined on the basis of stress scenarios calculated for a decrease in market value. The stress amounts depend on the equity type, e.g. whether it is listed on a regulated market in a member state of the European Economic Area or Organisation for Economic Co-operation and Development (OECD). The capital requirement for equity risk is based on the relevant equity exposure. It is determined using modeling and risk quantification based on observable data. The parameters are increased in order to take account of default risk. Default risk describes the risk of loss resulting from issuer insolvency.

Currency risk is calculated using a scenario approach that reflects the impact of a decrease or increase in the exchange rate for a foreign currency. The shock factor for determining the overall solvency requirement is based on the individual currency portfolio of R+V. Lower factors are applied for currencies that are pegged to the euro than for those that are not pegged to the euro.

The calculation of **real-estate risk** looks at both property held directly (e.g. land and buildings) and real estate funds. The shock factor for determining the overall solvency requirement for real-estate risk is a stress scenario adapted from the standard formula and reflects the fact that direct holdings consist overwhelmingly of investments in German real estate and fund holdings consist primarily of European real estate.

17.3.2 Principles of market risk management

The risk attaching to investments is managed in accordance with the guidelines specified by EIOPA, the stipulations in VAG, the information provided in regulatory circulars, and internal investment guidelines (see also the disclosures on market risk strategy in chapter VII.15.1). R+V aims to ensure compliance with the internal provisions in the risk management guidelines for investment risk and with other regulatory investment principles and rules by means of investment management, internal control procedures, a forward-looking investment policy, and organizational measures. The management of risk encompasses both economic and accounting aspects.

R+V counters investment risk by observing the principle of achieving the greatest possible security and profitability while safeguarding liquidity. By maintaining a mix and diversification of investments, R+V's investment policy aims to take into account the objective of mitigating risk.
In addition to diversification via maturity dates, issuers, countries, counterparties, and asset classes, limits are also applied in order to mitigate risk.

Asset/liability management investigations are carried out at R+V. The necessary capital requirement to maintain solvency is reviewed on an ongoing basis with the support of stress tests and scenario analyses. Specifically, reviews are carried out to assess the effects of a further increase in interest rates and volatile capital markets. R+V uses derivatives to manage market risk.

17.3.3 Management of individual market risk categories

In the management of **interest-rate risk**, R+V adheres to the principle of a mix and diversification of investments, combined with balanced risk-taking in selected asset classes and duration management that takes account of the structure of obligations.

In the management of **spread risk**, R+V pays particular attention to high credit ratings for investments, with the overwhelming majority of its fixed-income portfolio being held in investment-grade paper (see also Fig. VII.40 in chapter VII.17.4.2). The use of third-party credit risk evaluations and internal expert assessments, which are often more rigorous than the credit ratings available in the market, serves to further minimize risk. Mortgage lending is also subject to internal rules that help to limit default risk.

Equity risk is mitigated by diversifying holdings across different equity asset classes and regions. Asymmetric strategies are also used to reduce or increase equity exposure under a rules-based approach. At R+V, equities are used as part of a long-term investment strategy to guarantee that obligations to policyholders can be satisfied; generating profits by exploiting short-term fluctuations to sell shares is not its objective. The risk of having to sell equities at an inopportune moment is mitigated by the broadly diversified portfolio of investments.

Currency risk is controlled by systematic foreign-exchange management. Virtually all reinsurance assets and liabilities are denominated in the same currency.

Real-estate risk is mitigated by diversifying holdings across different locations and types of use.

R+V's investment portfolio is regularly evaluated on the basis of **key sustainability figures**, including ESG scores obtained from third-party data providers. These are drawn from assessments of climate-related risk, controversies, and breaches of standards, such as the UN Global Compact. R+V can initiate processes to engage with individual issuers in order to mitigate ESG risks. These processes serve to clarify sustainability-related matters or controversies. R+V set itself a science-based climate target in 2021 for its investment activity, which involves cutting greenhouse gas emissions from investment activities to (net) zero by 2050.

ESG-related risks in R+V's **investment process** are monitored and managed by two committees. The ESG task force monitors general ESG-related risks at individual issuer level; the carbon task force manages climate targets at portfolio level. This includes implicit management of transition risk. The amount of climate risk from various asset classes is also taken into account in the risk capital calculation.

17.3.4 Management of risk concentrations

R+V's investment approach focuses on avoiding risk concentrations in the portfolio and optimizing its risk profile by broadly diversifying investments. To achieve this, it applies the principle of an appropriate mix and diversification of investments and complies with the quantitative limits specified through the internal rules in the risk management guidelines for investment risk.

Risk concentrations are analyzed at least annually to assess whether they are material or not. Potential risk concentrations arise from the combination of analyzed risk type and type of concentration (e.g. individual exposure, sector, country, or region). The analysis pays particular attention to the risk-adjusted view, i.e. risk remaining after the risk-mitigating effects of insurance liabilities have been taken into account. Items currently of particular note in this regard are the portfolios of Italian government bonds combined with the shares held in the Italian Assimoco companies for business-policy reasons and the long-term interest-rate risks arising from pension products in force for a long period of time. These risks are consciously assumed.

17.3.5 Distinctive features of managing market risk in personal insurance business

For life insurance contracts and for casualty insurance contracts with premium refund clauses that guarantee minimum returns, there is a risk that the guaranteed minimum return agreed for certain products when contracts are signed cannot be generated in the capital markets over the long term. In the case of products with long-term guarantees, there is a risk of negative variances over the term of the contracts compared with calculation assumptions because of the length of time covered by the contracts. The main reasons for variances are the change in the capital market environment and maturity mismatches between investments and insurance contracts.

Market risk can be countered by writing new business that takes into account the current capital market situation and by taking action to boost the portfolio's risk-bearing capacity. It is crucial to ensure that there is enough free capital that can be made available even in adverse capital market scenarios. The necessary capital requirement to maintain solvency is reviewed on an ongoing basis with the aid of stress tests and scenario analyses as integral components of asset/liability management. Policyholder participation features in the form of future declarations of bonuses are also a key instrument used to reduce market risk attaching to life insurance.

The R+V insurance companies' liabilities for remaining coverage as required by German commercial law, broken down by discount rate, is shown in Fig. VII.36 for the main life and casualty insurance portfolios. The method for calculating insurance contract liabilities in life and casualty insurance is explained in note 11 of the notes to the consolidated financial statements.

The company actuarial discount rate calculated in accordance with the procedure developed by the Deutsche Aktuarvereinigung e.V. (DAV) [German Actuarial Association] is used in determining the imputed health insurance discount rate. This procedure is based on a fundamental professional principle issued by the DAV for determining an appropriate discount rate.

FIG. VII.36 – INSURANCE SECTOR: LIABILITIES FOR REMAINING COVERAGE AS REQUIRED BY GERMAN COMMERCIAL LAW, BY DISCOUNT RATE, FOR THE MAIN INSURANCE PORTFOLIOS[1, 2]

Discount rate	Proportion of liabilities for remaining coverage as required by German commercial law in 2023		Proportion of liabilities for remaining coverage as required by German commercial law in 2022	
	€ million	Percent	€ million	Percent
0.00%	6,759	9.6	7,074	10.0
0.01%	47	0.1	73	0.1
0.08%	5	–	5	–
0.10%	18	–	38	0.1
0.15%	153	0.2	65	0.1
0.25%	3,858	5.5	2,438	3.5
0.30%	160	0.2	160	0.2
0.35%	962	1.4	1,026	1.5
0.40%	63	0.1	60	0.1
0.50%	244	0.3	215	0.3
0.75%	34	–	1	–
0.90%	8,118	11.5	8,675	12.3
1.00%	59	0.1	93	0.1
1.10%	468	0.7	372	0.5
1.25%	2,844	4.0	2,780	3.9
1.50%	57	0.1	47	0.1
1.55%	4	–	8	–
1.75%	6,861	9.8	6,643	9.4
1.80%	251	0.4	285	0.4
2.00%	825	1.2	858	1.2
2.25%	11,821	16.8	11,922	16.9
2.50%	94	0.1	95	0.1
2.75%	9,334	13.3	9,194	13.0
3.00%	1,218	1.7	1,468	2.1
3.25%	7,021	10.0	7,209	10.2
3.50%	2,382	3.4	2,704	3.8
3.75%	105	0.1	120	0.2
4.00%	6,570	9.3	6,865	9.7

1 The table covers the following insurance products that include a guaranteed rate of return:
– Casualty insurance policies with premium refund
– Casualty insurance policies with premium refund as pension insurance
– Pension insurance policies
– Endowment insurance policies, including capital accumulation, risk and credit insurance policies, pension plans with guaranteed insurance-based benefits
– Capital deposit products
2 The share attributable to supplementary insurance contracts is listed under the relevant actuarial assumptions for the associated main insurance contract.

17.3.6 Managing risk arising from defined benefit pension obligations

The R+V entities have pension obligations (defined benefit obligations) to their current and former employees. By entering into such direct defined benefit obligations, they assume a number of risks, including risks associated with the measurement of the amounts recognized on the balance sheet, in particular risk arising from a change in the discount rate, risk of longevity, inflation risk, and risk in connection with salary and pension increases. A requirement may arise to adjust the existing provisions for pensions and other post-employment benefits as a result of decisions by the courts, legislation, or changes in the (consolidated) financial reporting. The plan assets at R+V are assets in reinsured pension schemes and funds, and are subject to interest-rate risk. The strategy adopted for the pension assets is predominantly driven by the defined benefit obligations.

17.4 Lending volume

17.4.1 Reconciliation of the lending volume

The amount and structure of the lending volume are key factors for the aspects of credit risk reflected in market risk and counterparty default risk. To identify possible risk concentrations, the volume liable to credit risk is broken down by rating class, industry sector, and country group.

Fig. VII.37 shows a reconciliation of the lending volume on which the risk management is based to individual balance sheet items in order to provide a transparent illustration of the link between the consolidated financial statements and risk management. The differences in methods used in the external consolidated financial statements and the internal management accounts are explained in chapter 8.6.2.

FIG. VII.37 – INSURANCE SECTOR: RECONCILIATION OF THE LENDING VOLUME

€ billion		Reconciliation						Lending volume for the consolidated financial statements		
Lending volume for internal management accounts		Scope of consolidation		Definition of the lending volume		Carrying amount and measurement				
Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022	Investments held by insurance companies (note 55 of the notes to the consolidated financial statements)
								12.0	11.0	of which: mortgage loans
								6.0	5.9	of which: promissory notes and loans
								5.5	5.4	of which: registered bonds
								1.0	0.8	of which: other loans
								11.9	13.0	of which: variable-yield securities
								53.6	47.7	of which: fixed-income securities
								0.2	0.3	of which: derivatives (positive fair values)
								–	0.4	of which: deposits with ceding insurers
89.8	84.4	-1.8	-1.5	-0.7	–	3.0	1.6	90.2	84.5	Total
				Balance as at Dec. 31, 2023				0.5	0.5%	
				Balance as at Dec. 31, 2022				0.1	0.1%	

Not relevant

17.4.2 Change in lending volume

In accordance with the breakdown specified in Solvency II, the bulk of credit risk within market risk is assigned to spread risk. The other parts of credit risk are measured within counterparty default risk and other risk types.

As at December 31, 2023, the **total lending volume** of R+V had increased by 6 percent to €89.8 billion (December 31, 2022: €84.4 billion). This increase was primarily the result of a rise in the fair values of fixed-income securities.

The volume of lending in the **home finance** business came to €14.2 billion as at December 31, 2023 (December 31, 2022: €13.7 billion). Of this amount, 87 percent was accounted for by loans for less than 60 percent of the value of the property, a situation that was unchanged compared with December 31, 2022.

The volume of home finance was broken down by finance type as at the reporting date as follows (figures as at December 31, 2022 shown in parentheses):
– Consumer home finance: €12.8 billion (€12.3 billion)

– Commercial home finance: €0.1 billion (€0.1 billion)
– Commercial finance: €1.3 billion (€1.3 billion)

In the case of home finance, the entire volume disbursed is backed by traditional loan collateral.

The financial sector and the public sector, which are the dominant **asset classes**, together accounted for 67 percent of the total lending volume as at December 31, 2023 (December 31, 2022: 64 percent).

The explanation of the asset class concept in the Bank sector (see chapter VII.8.6.3) applies analogously to the Insurance sector. Fig. VII.38 shows the breakdown of the lending volume by asset class.

FIG. VII.38 – INSURANCE SECTOR: LENDING VOLUME, BY ASSET CLASS

€ billion	Dec. 31, 2023	Dec. 31, 2022
Financials	40.1	36.4
Corporates	12.3	12.2
Public sector	19.7	17.5
Real estate (commercial and retail customers)	16.5	16.8
Other retail business	0.1	–
ABSs and ABCPs[1]	1.2	1.6
Other	–	–
Total	**89.8**	**84.4**

1 ABSs = asset-backed securities, ABCPs = asset-backed commercial paper.

Fig. VII.39 shows the **geographical distribution** of the credit portfolio by country group. Borrowers based in Germany are not included in this breakdown. The relevant country for the assignment to a country group is the one in which the economic risk arises. As at December 31, 2023, 74 percent of the total lending outside Germany continued to be concentrated in Europe.

FIG. VII.39 – INSURANCE SECTOR: LENDING VOLUME, BY COUNTRY GROUP

€ billion	Dec. 31, 2023	Dec. 31, 2022
Europe	43.9	40.2
of which: eurozone	34.9	31.6
North America	8.2	7.5
Central America	0.5	0.5
South America	1.0	0.8
Asia	3.5	3.0
Africa	0.3	0.3
Other	1.9	1.6
Total	**59.3**	**54.0**

For **credit ratings**, R+V generally uses ratings from rating agencies approved by the supervisory authorities. It also applies its own expert ratings in accordance with the provisions of Credit Rating Agency Regulation III to validate the external credit ratings. R+V has defined the external credit rating as the maximum, even in cases where its own rating is better.

The ratings calculated in this way are matched to the DZ BANK credit rating master scale using the methodology shown in (chapter VII.8.5.1).

The **rating structure** of the lending volume in the Insurance sector is shown in Fig. VII.40. Of the total lending volume as at December 31, 2023, 75 percent was attributable to investment-grade borrowers, which was the same percentage as at the end of 2022. The lending volume that is not rated, which made up 23 percent of the total lending volume (December 31, 2022: 24 percent), essentially comprised consumer home finance for which external ratings were not available. This volume is deemed to be low-risk because the lending is based on a selective approach and the mortgageable value of the assets is limited.

In the analysis of **individual concentrations**, the 10 counterparties associated with the largest lending volumes accounted for 17 percent of R+V's total lending volume as at December 31, 2023. This was the same percentage as at the end of 2022.

FIG. VII.40 – INSURANCE SECTOR: LENDING VOLUME, BY INTERNAL RATING CLASS

€ billion		Dec. 31, 2023	Dec. 31, 2022
Investment grade	1A	23.0	21.2
	1B	11.4	9.0
	1C	–	–
	1D	10.6	9.9
	1E	–	–
	2A	6.3	7.9
	2B	5.6	4.8
	2C	4.9	5.1
	2D	2.7	2.6
	2E	–	–
	3A	3.0	2.6
Non-investment grade	3B	0.4	0.3
	3C	0.3	0.3
	3D	–	–
	3E	0.2	0.2
	4A	0.2	0.1
	4B	–	0.3
	4C	–	0.1
	4D	–	–
	4E	–	–
Default		–	–
Not rated		21.0	20.1
Total		**89.8**	**84.4**

17.4.3 Credit portfolios particularly affected by negative macroeconomic conditions

Differences in economic policy in the eurozone are particularly affecting investments of R+V in **Italy**. R+V's exposure as at December 31, 2023 amounted to €2,493 million (December 31, 2022: €2,082 million). The increase in the exposure compared with December 31, 2022 is largely due to higher fair values.

17.4.4 Credit portfolios particularly affected by acute global crises

The exposure of R+V in countries affected by acute global crises totaled €465 million as at December 31, 2023 (December 31, 2022: €486 million). This equates to less than 1 percent of the total lending volume of R+V and largely comprises fixed-income securities.

The exposure of R+V in countries affected by the **war between Israel and Hamas** broke down as at the reporting date as follows (figures as at December 31, 2022 shown in parentheses):
– Israel: €293 million (€262 million)

– Egypt: €4 million (€43 million)

In light of the simmering **dispute between China and Taiwan**, lending by R+V to counterparties in Taiwan is being monitored very closely. As at December 31, 2023, there was no exposure to borrowers based in Taiwan, a situation that was unchanged compared with December 31, 2022. R+V's lending volume in China amounted to €168 million as at December 31, 2023 (December 31, 2022: €180 million).

17.5 Risk position

As at December 31, 2023, the **overall solvency requirement** for market risk amounted to €3,376 million (December 31, 2022: €3,415 million) with a **limit** of €3,695 million (December 31, 2022: €3,880 million).

Fig. VII.41 shows the overall solvency requirement for the various types of market risk.

FIG. VII.41 – INSURANCE SECTOR: OVERALL SOLVENCY REQUIREMENT FOR MARKET RISK, BY RISK SUBTYPE

€ million	Dec. 31, 2023	Dec. 31, 2022
Interest-rate risk	2,105	2,179
Spread risk	747	776
Equity risk	1,232	1,328
Currency risk	335	323
Real-estate risk	432	446
Total (after diversification)	**3,376**	**3,415**

18 Counterparty default risk

18.1 Definition and business background

Counterparty default risk reflects losses that could arise from unexpected default or deterioration in the credit standing of counterparties and debtors of insurance and reinsurance companies over the following twelve months. It covers risk-mitigating contracts, such as reinsurance arrangements, securitizations and derivatives, and receivables from intermediaries, as well as any other credit risk that is not otherwise covered by risk measurement.

Counterparty default risk takes account of collateral or other security that is held by the insurance or reinsurance company and any associated risks.

18.2 Risk factors

Counterparty default risk can arise as a result of unexpected default or deterioration in the credit standing of mortgage loan borrowers, counterparties of derivatives, reinsurance counterparties, policyholders, or insurance brokers.

18.3 Risk management

18.3.1 Measurement of counterparty default risk and management of limits

The capital requirements for counterparty default risk are determined on the basis of the relevant exposure and the expected losses per counterparty. R+V manages counterparty default risk at individual entity level.

Volume and counterparty limits apply to transactions involving derivatives. The various risks are monitored and transparently presented as part of the reporting system. Only economic hedges are used and they are not reported on a net basis in the consolidated financial statements.

R+V uses the views expressed by the international rating agencies in conjunction with its own credit ratings to help it to assess counterparty and issuer risk. Compliance with the limits for major counterparties is reviewed on an ongoing basis, with checks on limit utilization and compliance with investment guidelines.

18.3.2 Mitigating counterparty default risk

Default management mitigates the risks arising from defaults on receivables relating to direct insurance operations with policyholders and insurance brokers. For the purposes of German commercial law, the average ratio of defaults to gross premiums written over the past three years was 0.1 percent, which was unchanged on the figure as at December 31, 2022.

The default risk for receivables arising from inward reinsurance business and reinsurance contracts held is limited by continuously monitoring credit ratings and making use of other sources of information in the market.

18.4 Risk position

Receivables arising from reinsurance contracts held amounted to €73 million as at December 31, 2023 (December 31, 2022: €145 million). As had been the case a year earlier, the entire volume was owed by companies with an external rating of A or higher. Less than 1 percent of the receivables were receivables from reinsurance counterparties without a rating.

The **reinsurers' share of insurance liabilities** is a variable that impacts on the default risk of reinsurance counterparties. Claims against reinsurers for insured events that have not yet occurred and for insured events from direct insurance operations and from inward reinsurance that have occurred, presented by external rating class in accordance with the system of the rating agency Standard & Poor's, are shown in Fig. VII.42. 'Other ratings' includes ratings that were not available at the reporting date. All reinsurers had a rating of A- or better on the underwriting date.

FIG. VII.42 – INSURANCE SECTOR: VOLUME OF REINSURANCE CONTRACTS HELD, BY EXTERNAL RATING CLASS

€ million	**Dec. 31, 2023**	Dec. 31, 2022
AAA	**–**	1
AA+ to AA-	**21**	29
A+ to A-	**119**	117
B	**1**	–
Other ratings	**12**	4
Total	**154**	**152**

1 Compared with the risk report in the 2023 interim group management report, exposures in the 'Other ratings' category have been shifted to the 'A+ to A-' rating category.

Overdue receivables from policyholders and insurance brokers more than 90 days past due as at the reporting date amounted to €16 million as at December 31, 2023 (December 31, 2022: €27 million). The figure as at December 31, 2022 that was published in the 2022 risk report was €158 million. That figure was calculated in accordance with IFRS 4 based on the carrying amounts recognized under HGB, whereas the calculation now uses the carrying amounts recognized under IFRS. In order to ensure comparability with the figure as at December 31, 2023, which was calculated in accordance with the rules of IFRS 17 that came into effect on January 1, 2023, the figure as at December 31, 2022 was recalculated.

As at December 31, 2023, the **overall solvency requirement** for counterparty default risk amounted to €219 million (December 31, 2022: €224 million) with a **limit** of €245 million (December 31, 2022: €350 million).

19 Reputational risk

19.1 Definition and business background
Reputational risk is defined as the risk of losses that could arise from damage to the reputation of R+V or of the entire industry as a result of a negative perception among the general public (for example, customers, business partners, shareholders, authorities, the media).

Reputational risk can arise as an independent risk (primary reputational risk) or as an indirect or direct consequence of other types of risk, such as operational risk (secondary reputational risk).

19.2 Risk factors
If R+V's reputation deteriorates, there is a risk that existing or potential customers will be unsettled with the result that existing business relationships might be terminated or it might not be possible to carry out planned transactions. There is also a risk that R+V's adverse reputation is then transferred to the entities in the Bank sector and it may no longer be possible to guarantee the backing of stakeholders, such as network partners and employees, necessary to conduct business operations.

If the transition risks, social risks, and corporate governance risks assessed in connection with ESG risks were to materialize, this could give rise to heightened reputational risk.

19.3 Risk management
R+V's corporate communications are coordinated centrally so that any inaccurate presentation of circumstances can be countered. Media reports about the insurance industry in general and R+V in particular are monitored and continuously analyzed across all R+V departments.

R+V's reputational risk is not specifically quantified within the Solvency II framework. However, it is implicitly included in the overall solvency requirement for life actuarial risk (lapse risk).

20 Operational risk

20.1 Definition and business background
Operational risk is defined as the risk of losses arising from inadequate or failed internal processes, personnel, or systems, or from external events.

Operational risk in the Insurance sector is broken down into the following components:
- Legal and compliance risk
- Information risk including ICT risk
- Security risk
- Outsourcing risk
- Project risk

Operational risk could arise in any division of R+V.
Sustainability risk in the form of environmental, social, or corporate governance risk could be a risk factor that gives rise to operational risk. Risk factors are described under the relevant component of operational risk.

20.2 Central risk management
The **risk capital requirement** for operational risk in the Insurance sector is determined in accordance with the standard formula in Solvency II. The risk calculation uses a factor approach, taking account of premiums, provisions and, in the case of unit-linked business, costs.

R+V uses scenario-based risk self-assessments and risk indicators to manage and control operational risk. In the **risk self-assessments**, operational risk is assessed in terms of the probability of occurrence and the level of loss. Qualitative assessments can be used in exceptional cases.

Risk indicators are intended to help the Insurance sector to identify risk trends and concentrations at an early stage and to detect weaknesses in business processes. A system of warning lights is used to indicate risk situations based on specified threshold values.

To support the management of operational risk, all of R+V's business processes are structured in accordance with the requirements of the **framework guidelines** for the authorizations and powers of attorney of employees in R+V entities. Divisions not covered by these guidelines are subject to other policy documents, including policies on new business and underwriting.

The **internal control system** is a key instrument used by R+V to **limit operational risk**. Rules and controls in each department and reviews of the use and effectiveness of the internal control system carried out by Group Audit at R+V aim to avert the risk of errors and fraud. Payments are largely automated. Powers of attorney and authorizations stored in user profiles, as well as automated submissions for approval based on a random generator, are also used. Manual payments are approved by a second member of staff.

20.3 Operational risk components

20.3.1 Legal and compliance risk

Risk factors

Legal risk may arise from changes in the legal environment, including changes in the way that the authorities or the courts interpret legal provisions. In particular, there is a risk that the implemented compliance and risk management systems could be inadequate for completely preventing or uncovering violations of legal provisions, for identifying and assessing all relevant risks, or for initiating appropriate corrective measures. Examples of relevant situations are notifiable infringements of data protection regulations, breaches of reporting or notification requirements to supervisory or tax authorities, and violations of sanctions or embargoes.

Effects if risk materializes

Violations of legal provisions may have legal implications for R+V, for the members of its decision-making bodies, or for its employees. They may give rise, for example, to fines, penalties, retrospective tax payments, or claims for damages by third parties. These effects could reduce R+V's appeal as a partner in business transactions and lead to losses in value.

Risk management

The basic principles for managing compliance risk applicable to the entities in the DZ BANK Group are described in chapter VII.3.4.5. The data protection measures in place and the code of conduct are also explained in the same chapter.

At R+V, legal disputes arising from the processing of insurance claims or benefit payments are covered by insurance liabilities, and therefore do not form part of operational risk. R+V monitors and analyzes relevant decisions by the courts with a view to mitigating legal risk by identifying any need for action in good time and implementing specific corrective measures. The compliance function has also implemented systems, processes, and controls in order to counter compliance risks.

20.3.2 Information risk including ICT risk

Risk factors

Information risk can arise from a loss of confidentiality, integrity, availability, or authenticity of information or data. If the risk is in connection with the use of information or communication technology (data media), it is referred to as ICT risk. This also includes cyber risk.

Effects if risk materializes

Malfunctions or breakdowns in IT systems (comprises software, hardware, and communication technology), including attacks from external sources – such as hackers or malware –, could have an adverse impact on the ability of the Insurance sector to efficiently maintain the processes necessary to carry out operating activities, protect saved data, ensure sufficient control, or continue to develop products and services. Furthermore, such malfunctions or breakdowns could lead to temporary or permanent loss of data. This could restrict operating activities, have a negative impact on reputation, or result in economic losses.

Risk management

The basic principles for managing information security applicable to the entities in the DZ BANK Group are described in chapter VII.3.4.6.

A core focus of R+V's IT strategy is to ensure the stable, secure, and efficient operation of the information and communications infrastructures and application systems. R+V's IT operations are largely centralized and involve a high degree of inhouse development. In its development work, the IT team incorporates standardized IT processes and procedures, applies best practice, and is closely guided by market standards.

Physical and logical precautionary measures have been established for the purpose of data and application security and to ensure that day-to-day operations are maintained. A particular risk would be a partial or total breakdown in data processing systems. R+V counters this risk by using two segregated data processing centers in which the data and systems are mirrored, special access security, fire control systems, and an uninterruptible power supply supported by emergency power generators. Exercises are carried out to test a defined restart procedure to be used in disaster situations with the aim of checking the efficacy of this procedure. Data is backed up and held within highly secure environments in different buildings. Furthermore, data is mirrored to a tape library at a remote, off-site location.

The level of security is enhanced through the systematic identification of protection requirements, security strategies based on defined IT security standards, business continuity planning, and capacity management. Where tasks allow, R+V makes flexible use of outsourcing options and IT providers in a risk-based approach. IT providers are integrated into R+V's processes where necessary and monitored on a risk basis.

R+V uses a dedicated management process – with defined roles, responsibilities, and procedures – to manage and control information risk in a holistic approach. Various information and IT security management tools are used to identify information risk, such as target/actual comparisons and penetration tests.

20.3.3 Security risk

Risk factors

Security risk can arise from inadequate protection of individuals, premises, assets, or time-critical processes. Examples are epidemics or pandemics resulting from the spread of pathogens over a huge area, or limitations on the use of resources because of a power outage, other interruption to energy supply, or natural disaster. Climate change could lead to more frequent and more severe natural disasters.

Effects if risk materializes
Business interruptions could mean that processes and workflows are disrupted over several days. Moreover, sensitive internal and external interfaces could be jeopardized by long-term business interruptions. Furthermore, such scenarios could also have a negative impact on reputation.

Risk management
To ensure that it is operational at all times, R+V has a business continuity management (BCM) system, which is documented in internal corporate guidelines. The R+V security and BCM conference with representatives from all divisions and sites provides strategic and functional support and is intended to ensure that activities within the R+V subgroup are coordinated. Reports on significant findings relevant to risk and on any exercises and tests that have been carried out are also submitted to the R+V Risk Committee.

The purpose of the BCM system is to ensure that R+V's operating activities can be maintained in the event of an emergency or crisis. To this end, (time-)critical business processes are recorded with the necessary resources. Any necessary documentation (such as business continuity planning) is prepared and reviewed. Special organizational structures, such as the R+V crisis management team and situation room, and the individual business continuity teams in the divisions and sites, have also been set up to deal with emergency and crisis situations.

Further details on business continuity management can be found in chapter VII.3.4.6.

20.3.4 Outsourcing risk

Risk factors
R+V aims to provide high-quality services at competitive terms and conditions based on efficient internal organization of its business activities. In this context, the outsourcing of activities to third-party service providers can bring benefits in terms of quality and costs. Outsourcing risk can arise if the service provider fails to comply with the strategic principles established by R+V or the related operational requirements when carrying out the outsourced activities. If a service provider is not suitable for the task or does not have the requisite financial stability, this could lead to defective performance or even loss of the service. Moreover, inappropriate management of operational risk by the service provider could have an adverse impact on business operations.

Effects if risk materializes
If the risk factors were to materialize, they could lead to a loss of business and to claims for damages from customers. They could also result in a negative impact on reputation.

Risk management
The basic principles for managing outsourcing applicable to the entities in the DZ BANK Group are described in chapter VII.3.4.7.

Using these principles as a starting point, R+V has put in place the following measures to protect against potential outsourcing risk:
– Structured categorization of outsourcing arrangements
– Identification of potential risk factors as part of the risk analysis
– Requirements for the mitigation of risk, including standard provisions that must be contractually agreed and integrated into business continuity management

20.3.5 Project risk

Risk factors

Project risk could arise from the inadequate clarification of project targets or orders, from deficiencies in subsequent implementation, from communication shortcomings both inside and outside the project, or from unexpected changes in the general parameters applicable to a project.

Effects if risk materializes

If project risk were to materialize, this could mean that the implementation of the project could require additional funds in excess of the budget. It could also give rise to further costs attributable to the failure to complete project requirements on schedule. Examples of such costs are additional costs in the line organization and impairment losses on capital investment related to the project. Earnings could also be reduced if new products or – due to changes to legal requirements – appropriately modified products cannot be offered in good time.

Risk management

To provide a regulating framework for secure, efficient execution of projects, R+V has set up a Capital Investment Committee, which submits proposals for decision or approval and provides support for large-scale projects. After projects have been approved, project managers of all large-scale projects must report to the Capital Investment Committee. This ensures that projects are then subject to independent, close monitoring and control. At quarterly meetings, the Capital Investment Committee is kept informed of project results and any adjustments to project targets. The committee can intervene to provide guidance by becoming involved in discussions on targets.

20.4 Risk position

As at December 31, 2023, the **overall solvency requirement** determined for operational risk amounted to €629 million (December 31, 2022: €598 million). The **limit** was €700 million as at the reporting date (December 31, 2022: €1,000 million). This increase in risk is due to higher insurance liabilities calculated in accordance with Solvency II.

21 Risks from entities in other financial sectors

All entities that form part of the regulatory R+V Versicherung AG insurance group are generally included in the calculation of group solvency.

At R+V, the entities in other financial sectors mainly consist of pension funds and occupational pension schemes. Their **risk factors** generally correspond to the risk factors for risks backed by capital pursuant to Solvency II.

Risk is quantified for the pension funds and occupational pension schemes in accordance with the requirements currently specified by the insurance supervisor. This means applying the capital requirements in Solvency I, which are essentially calculated by applying a factor to the volume measures of liabilities for remaining coverage and capital at risk. Funding requirements are also assessed when calculating the overall solvency requirement and own funds. This involves assessing whether existing regulatory requirements regarding insurance equity and liabilities, capital adequacy, and risk-bearing capacity can continue to be met in the future, taking risks into account. Projections, as well as existing analyses and reports, are used to make this assessment.

R+V Pensionskasse AG is exposed to risks comparable with those faced by the life insurance entities in the R+V subgroup. The main risk management activities applicable in this case are those relating to life actuarial risk (see chapter VII.16.3.2), market risk (see chapter VII.17.3), counterparty default risk (see chapter VII.18.3), and operational risk (see chapter VII.20.2). R+V Pensionskasse AG has largely stopped taking on new business. It is continuing to manage existing contracts as before.

The risk situation in a **pension fund** is determined to a significant degree by the nature of the pension plans offered. In pension plans offered by R+V involving defined contributions with a minimum benefit, it must be ensured that at least the sum of the contributions paid into the plan (net of any contributions covering biometric risk assumed by R+V) is available on the agreed pension start date.

R+V also offers pension plans that include guaranteed insurance-based occupational incapacity cover as well as pension benefits and benefits for surviving dependants. Market risk and all the risk types covered by actuarial risk are relevant as far as occupational pension provision is concerned. Longevity risk is also important in relation to pensions because of the guaranteed benefits involved. The risk management activities relating to life actuarial risk, market risk, counterparty default risk, and operational risk apply in this case. R+V aims to ensure that the ongoing pension plan contributions and the liability for remaining coverage include sufficient amounts to cover the costs of managing pension fund contracts.

In the pension plans involving a benefit commitment without any insurance-based guarantees, R+V does not assume responsibility for any of the pension fund risk or investment risk because the benefits promised by the pension fund are subject to the proviso that the employer will also make up any difference required. This also applies to the period in which pensions are drawn. If the employer fails to make up the difference required, R+V’s commitment is reduced to insurance-based guaranteed benefits based on the amount of capital still available.

In purely defined-contribution plans, the amount of the lifelong payments depends on the value of the pension capital upon retirement and, subsequently, on the performance of the collateral assets for covering the current annuities. This means that there is a risk for pension beneficiaries that the payments may fluctuate – and, specifically, may fall – depending on the value of the investment. Appropriate market risk management activities are carried out to counter this risk.

As at December 31, 2023, the **overall solvency requirement** for risks in connection with non-controlling interests in insurance companies and with entities in other financial sectors stood at €210 million (December 31, 2022: €135 million) with a **limit** of €225 million (December 31, 2022: €180 million). The increase in risk is largely due to the reassessment of funding requirements in a risk scenario based on the current capital market environment.

Consolidated financial statements

Income statement for the period January 1 to December 31, 2023

€ million	(Note)	2023	2022
Net interest income	(34)	4,333	3,322
Interest income		13,733	5,919
Interest income calculated using the effective interest method		13,485	5,819
Interest income not calculated using the effective interest method		248	101
Current income and expense		101	55
Interest expense		-9,501	-2,652
Net fee and commission income	(35)	2,807	2,749
Fee and commission income		5,174	5,262
Fee and commission expenses		-2,368	-2,513
Gains and losses on trading activities	(36)	-175	823
Gains and losses on investments	(37)	-72	-119
Other gains and losses on valuation of financial instruments	(38)	298	-286
Gains and losses from the derecognition of financial assets measured at amortized cost	(39)	11	35
Insurance service result		1,994	2,077
Insurance revenue	(89)	12,317	12,424
Insurance service expenses	(91)	-10,245	-10,225
Net income/expenses from reinsurance contracts held	(91)	-78	-123
Gains and losses on investments held by insurance companies and other insurance company gains and losses	(40)	2,998	-3,759
of which interest income calculated using the effective interest method		1,664	1,478
Insurance finance income or expenses	(41)	-4,107	1,951
Gains and losses from the derecognition of financial assets measured at amortized cost in the insurance business	(42)	6	8
Loss allowances	(43)	-362	-304
Administrative expenses	(44)	-4,597	-4,447
Other net operating income	(45)	56	204
Profit before taxes		3,189	2,252
Income taxes	(46)	-955	-912
Net profit		**2,234**	**1,341**
Attributable to:			
Shareholders of DZ BANK		2,130	1,269
Non-controlling interests		103	72

Statement of comprehensive income for the period January 1 to December 31, 2023

€ million	(Note)	2023	2022
Net profit		2,234	1,341
Other comprehensive income/loss		556	-2,929
Items that may be reclassified to the income statement		**566**	**-2,896**
Gains and losses on debt instruments measured at fair value through other comprehensive income	(47)	4,679	-22,777
Exchange differences on currency translation of foreign operations	(47)	-12	13
Insurance finance income or expenses included in other comprehensive income	(47)	-3,745	18,452
Share of other comprehensive income/loss of joint ventures and associates accounted for using the equity method	(47)	-8	1
Income taxes	(48)	-349	1,415
Items that will not be reclassified to the income statement		**-9**	**-33**
Gains and losses on equity instruments for which the fair value OCI option has been exercised		-47	-636
Gains and losses in relation to financial liabilities for which the fair value option has been exercised, attributable to changes in own credit risk		300	170
Gains and losses arising from remeasurement of defined benefit plans		-145	419
Income taxes	(48)	-117	13
Total comprehensive income/loss		**2,790**	**-1,588**
Attributable to:			
Shareholders of DZ BANK		2,622	-1,343
Non-controlling interests		168	-245

Balance sheet as at December 31, 2023

ASSETS

€ million	(Note)	Dec. 31, 2023	Dec. 31, 2022
Cash and cash equivalents	(14, 49)	101,830	93,717
Loans and advances to banks	(15, 50)	128,867	123,444
Loans and advances to customers	(15, 51)	204,776	203,646
Hedging instruments (positive fair values)	(16, 52)	923	1,568
Financial assets held for trading	(17, 53)	34,961	48,909
Investments	(18, 54)	47,970	43,393
Investments held by insurance companies	(55, 60)	115,568	105,548
Property, plant and equipment, investment property, and right-of-use assets	(19, 56, 60)	1,870	1,960
Income tax assets	(20, 57)	4,827	5,777
Other assets	(21, 58, 60)	5,845	6,588
Loss allowances	(22, 59)	-2,248	-2,029
Non-current assets and disposal groups classified as held for sale	(23, 61)	1,790	19
Fair value changes of the hedged items in portfolio hedges of interest-rate risk		-2,389	-4,173
Total assets		**644,589**	**628,365**

EQUITY AND LIABILITIES

€ million	(Note)	Dec. 31, 2023	Dec. 31, 2022
Deposits from banks	(24, 62)	174,580	186,787
Deposits from customers	(24, 63)	159,641	159,429
Debt certificates issued including bonds	(25, 64)	103,768	82,349
Hedging instruments (negative fair values)	(16, 65)	624	442
Financial liabilities held for trading	(17, 66)	47,675	52,478
Provisions	(26, 67)	3,235	3,248
Insurance contract liabilities	(11, 68)	105,151	98,328
Income tax liabilities	(20, 57)	4,813	5,346
Other liabilities	(21, 69)	8,872	8,960
Subordinated capital	(27, 70)	4,261	4,521
Liabilities included in disposal groups classified as held for sale	(23, 61)	1,533	-
Fair value changes of the hedged items in portfolio hedges of interest-rate risk		-634	-1,147
Equity	(71)	31,069	27,625
Shareholders' equity		29,106	25,819
Subscribed capital		4,926	4,926
Capital reserve		5,551	5,551
Retained earnings		15,977	14,362
Reserve from other comprehensive income		-642	-1,171
Additional equity components		3,293	2,150
Non-controlling interests		1,963	1,806
Total equity and liabilities		**644,589**	**628,365**

Statement of changes in equity

€ million	Sub-scribed capital	Capital reserve	Retained earnings	Reserve from other compre-hensive income	Addi-tional equity compo-nents	**Share-holders' equity**	Non-control-ling interests	**Total equity**
Equity as at Jan. 1, 2022	4,926	5,551	12,581	1,651	2,150	26,860	1,801	28,661
Restatements according to IAS 8	-	-	542	178	-	720	319	1,039
Equity restated as at Jan. 1, 2022	4,926	5,551	13,123	1,829	2,150	27,580	2,121	29,700
Net profit	-	-	1,269	-	-	1,269	72	1,341
Other comprehensive income/loss	-	-	279	-2,892	-	-2,613	-316	-2,929
Total comprehensive income/loss	**-**	**-**	**1,548**	**-2,892**	**-**	**-1,343**	**-245**	**-1,588**
Capital increase/capital repaid	-	-	-	-	-	-	19	19
Changes in scope of consolidation	-	-	-2	5	-	4	1	4
Acquisition/disposal of non-controlling interests	-	-	5	3	-	8	-4	4
Reclassifications within equity	-	-	116	-116	-	-	-	-
Dividends paid	-	-	-358	-	-	-358	-86	-444
Distribution of dividend on additional equity components	-	-	-71	-	-	-71	-	-71
Equity as at Dec. 31, 2022	**4,926**	**5,551**	**14,362**	**-1,171**	**2,150**	**25,819**	**1,806**	**27,625**
Net profit	-	-	2,130	-	-	2,130	103	2,234
Other comprehensive income/loss	-	-	-94	586	-	492	64	556
Total comprehensive income/loss	**-**	**-**	**2,036**	**586**	**-**	**2,622**	**168**	**2,790**
Capital increase/capital repaid	-	-	-	-	1,143	1,143	-1	1,142
Acquisition/disposal of non-controlling interests	-	-	-19	-	-	-19	15	-4
Reclassifications within equity	-	-	57	-57	-	-	-	-
Dividends paid	-	-	-358	-	-	-358	-24	-382
Distribution of dividend on additional equity components	-	-	-101	-	-	-101	-	-101
Equity as at Dec. 31, 2023	**4,926**	**5,551**	**15,977**	**-642**	**3,293**	**29,106**	**1,963**	**31,069**

Further information on equity is presented in note 71.

Statement of cash flows

€ million	2023	2022
Net profit	**2,234**	**1,341**
Non-cash items included in net profit and reconciliation to cash flows from operating activities		
Depreciation, amortization, impairment losses, reversals of impairment losses on assets, and other non-cash changes in financial assets and liabilities	-1,360	4,059
Non-cash changes in provisions	652	-158
Non-cash changes in insurance contract liabilities	3,194	-9,594
Other non-cash income and expenses	1,430	769
Gains and losses on the disposal of assets and liabilities	-2,299	-746
Other adjustments (net)	-2,567	-3,334
Subtotal	1,284	-7,663
Cash changes in assets and liabilities arising from operating activities		
Loans and advances to banks	-5,340	-15,662
Loans and advances to customers	-2,392	-8,405
Other assets from operating activities	627	-855
Hedging instruments (positive and negative fair values)	-1,165	2,593
Financial assets and financial liabilities held for trading	10,239	8,101
Deposits from banks	-12,516	-9,764
Deposits from customers	1,438	21,343
Debt certificates issued including bonds	20,978	3,166
Other liabilities from operating activities	264	2,147
Interest, dividends, and operating lease payments received	13,243	5,228
Interest paid	-10,488	-2,774
Income taxes paid	-615	-691
Cash flows from operating activities	**15,557**	**-3,236**
Proceeds from the sale of investments	22,454	20,912
Proceeds from the sale of investments held by insurance companies	26,544	40,647
Proceeds from the sale of property, plant and equipment, and investment property (excluding assets subject to operating leases)	2	13
Proceeds from the sale of intangible non-current assets	3	8
Payments for the acquisition of investments	-26,214	-15,721
Payments for the acquisition of investments held by insurance companies	-30,223	-35,327
Payments for the acquisition of property, plant and equipment, and investment property (excluding assets subject to operating leases)	-68	-72
Payments for the acquisition of intangible non-current assets	-137	-123
Changes in scope of consolidation	-	-248
of which payments for the acquisition of investments in consolidated subsidiaries net of cash acquired	-	-248
Cash flows from investing activities	**-7,639**	**10,089**
Proceeds from capital increases by non-controlling interests	-	19
Proceeds from additional equity components	1,143	-
Dividends paid to shareholders of DZ BANK	-358	-358
Dividends paid to non-controlling interests	-24	-86
Distribution of dividend on additional equity components	-101	-71
Other payments to non-controlling interests	-1	-
Net change in cash and cash equivalents from other financing activities (including subordinated capital)	-340	1,331
Cash flows from financing activities	**319**	**835**

€ million	2023	2022
Cash and cash equivalents as at January 1	93,717	86,029
Cash flows from operating activities	15,557	-3,236
Cash flows from investing activities	-7,639	10,089
Cash flows from financing activities	319	835
Cash and cash equivalents as at December 31	**101,954**	**93,717**

Statements of cash flows provide banks with limited useful information, which is why the DZ BANK Group's statement of cash flows is not material to the group. The group does not use the statement of cash flows for liquidity and financial planning, nor as a management tool.

The statement of cash flows shows the changes in cash and cash equivalents during the financial year. Cash and cash equivalents consist of cash on hand, balances with central banks, and cash and cash equivalents of €124 million resulting from non-current assets and disposal groups classified as held for sale (December 31, 2022: €0 million). The cash and cash equivalents do not include any financial investments with maturities of more than 3 months at the date of acquisition. Changes in cash and cash equivalents are broken down into operating, investing, and financing activities.

Cash flows from operating activities comprise cash flows mainly arising in connection with the revenue-producing activities of the group and other activities that cannot be classified as investing or financing activities. Cash flows related to the acquisition and disposal of non-current assets are allocated to investing activities. Cash flows from financing activities include cash flows arising from transactions with equity owners and from other borrowing to finance business activities, in particular from subordinated capital.

Cash payments from lessees in repayment of lease liabilities, which are included in cash flows from financing activities, amounted to €112 million (2022: €110 million).

In 2023, there were no cash inflows as a result of the first-time consolidation of subsidiaries (2022: cash inflow of €3 million).

Notes

A General disclosures

» 01 Basis of preparation

Pursuant to *Regulation (EC) 1606/2002 of the European Parliament and of the Council of July 19, 2002*, the consolidated financial statements of DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main, Germany, (DZ BANK) for the 2023 financial year have been prepared in accordance with the provisions of the International Financial Reporting Standards (IFRS), as adopted by the European Union (EU).

The provisions specified in section 315e (1) of the German Commercial Code (HGB) for companies whose securities are admitted to trading on a regulated market in the EU have also been applied in the consolidated financial statements of DZ BANK. In addition, further standards adopted by Deutsches Rechnungslegungs Standards Committee e.V. [German Accounting Standards Committee] have generally been taken into account where such standards have been published in the German Federal Gazette by the Bundesministerium der Justiz [Federal Ministry of Justice] pursuant to section 342q (2) HGB.

DZ BANK is entered in the commercial register at the Frankfurt am Main local court under the number HRB 45651.

The DZ BANK Group's financial year is the same as the calendar year. In the interest of clarity, some items on the income statement, the statement of comprehensive income, and the balance sheet – primarily items relating to insurance contracts – have been aggregated and are explained by additional disclosures in the notes. Unless stated otherwise, all amounts are shown in millions of euros (€ million). This may result in very small discrepancies in the calculation of totals and percentages.

The consolidated financial statements of DZ BANK have been released for publication by the Board of Managing Directors following approval by the Supervisory Board on March 21, 2024.

» 02 Accounting policies and estimates

Changes in accounting policies

First-time application in 2023 of changes in IFRS
The following new accounting standard and the listed amendments to IFRS have been applied for the first time in DZ BANK's consolidated financial statements for the 2023 financial year:

- IFRS 17 *Insurance Contracts*
- Amendments to IFRS 17 *Insurance Contracts*
- Amendments to IAS 1 *Presentation of Financial Statements* and IAS 8 *Accounting Policies, Changes in Accounting Estimates and Errors*
- *Deferred Tax related to Assets and Liabilities arising from a Single Transaction* (Amendments to IAS 12 Income Taxes)
- *International Tax Reform – Pillar Two Model Rules* (Amendments to IAS 12 Income Taxes)

IFRS 17 *Insurance Contracts* superseded the previous standard for accounting for insurance contracts (IFRS 4 *Insurance Contracts*) with effect from January 1, 2023 and is required to be applied to insurance contracts, reinsurance contracts, and investment contracts with discretionary participation features. IFRS 17 establishes the principles for the recognition, measurement, presentation, and disclosure of insurance contracts issued.

The material difference between IFRS 17 and IFRS 4 is the uniform application of accounting policies in areas such as revenue recognition, the measurement of liabilities, and the realization of gains at the start of the contract. Under IFRS 4, entities were permitted to continue with their existing accounting approach. These approaches were shaped by various national accounting principles, making it almost impossible to compare financial statements.

IFRS 17 requires comparative information to be presented in the notes for the period immediately preceding the date of initial application of IFRS 17, i.e. for 2022 if initial application is in 2023. To calculate the comparative information, IFRS 17 requires fully retrospective application of the standard for insurance contract accounting in accordance with IAS 8. The fully retrospective approach stipulates that each group of insurance contracts (GIC) is recognized and measured at the transition date as if the insurance contracts had always been accounted for in accordance with IFRS 17. Any existing line items on the balance sheet that would not exist had IFRS 17 always applied must be derecognized and any resulting net differences must be recognized in equity. The idea is that the difference between balance sheet items under IFRS 4 and IFRS 17 is recognized in retained earnings, i.e. the IFRS 4 balance sheet items are derecognized, and the IFRS 17 balance sheet items recognized, in each case against retained earnings in other comprehensive income. If the fully retrospective approach is impracticable, IFRS 17.C5 in conjunction with IFRS 17.C3 permits use of a modified retrospective approach or a fair value approach at the transition date.

The objective of the modified retrospective approach is to achieve the closest outcome to fully retrospective application possible using reasonable and supportable information available without undue cost or effort. If the entity cannot obtain the reasonable and supportable information necessary to apply the modified retrospective approach, it must apply the fair value approach.

When applying the fair value approach, the entity determines the contractual service margin (CSM) or loss component of the liability for remaining coverage at the transition date as the difference between the fair value of a GIC at that date and the fulfillment cash flows measured at that date. The fair value of the GIC is determined on the basis of the price that would be paid in an orderly transaction between market participants at the measurement date (exit price). In determining that fair value, the entity must not apply the rules on fair value measurement in IFRS 13.47. To measure the market-based fair value of future cash flows, various adjustments are made to calculate a risk premium and the discount factors. Such adjustments might be made, for example, to cover costs that cannot be allocated directly.

For all non-life insurance business except for casualty insurance with premium refund, the premium allocation approach is used. In the context of the transition, this approach is generally applied on a modified retrospective basis, taking account of IFRS 17.C6. The risk part of the casualty insurance with premium refund business is measured using the general measurement model. For measurement at the transition date, the modified retrospective approach is also used, taking account of IFRS 17.C6.

In personal insurance, the modified retrospective approach is used for the past in accordance with IFRS 17.C8 from the time at which the fully retrospective approach is not possible. By taking this approach, the DZ BANK Group is, in accordance with IFRS 17.C6(b), maximizing the use of information that would have been used to apply the fully retrospective approach. This means that the CSM is determined using the modified retrospective approach at a time before the transition date so that it can then be updated to the transition date in accordance with IFRS 17.44 and IFRS 17.45. The measurement modifications here relate to the CSM, the loss component, and the amounts recognized in other comprehensive income and are largely based on information available pursuant to the German Regulation on the Reporting by Insurance Undertakings to the Federal Financial Supervisory Authority (BerVersV). All other measurement components adhere to the requirements for the fully retrospective approach. The fair value approach is generally not used for personal insurance.

For insurance contracts with direct participation features in personal insurance, the CSM and loss components are measured in accordance with IFRS 17.C17. The CSM at the transition date is calculated from the fair value of the underlying item less the fulfillment cash flows at that date, and an adjustment for the following amounts: amounts charged by the entity to the policyholder before that date, amounts paid before that date that would not have varied based on the underlying items, and amounts equal to the changes to the risk adjustment for non-financial risk caused by the release from risk before that date. If this results in a loss component, the loss component is adjusted to nil and the liability for remaining coverage is increased by the same amount. Otherwise, the amount determined is reduced by the estimated amortization of the CSM for services provided.

In accordance with IFRS 17.C12, the future cash flows for personal insurance contracts without direct participation features are estimated at the date of initial recognition as the amount of the future cash flows at the transition date. The cash flows are subsequently adjusted by the cash flows that occurred between initial recognition of the contracts and the transition date. This adjustment also includes cash flows for contracts that ended before the transition date. The discount rates to be applied upon initial recognition of a GIC are determined using an observable yield curve that, for at least 3 years immediately before the transition date, approximates the yield curve estimated applying IFRS 17.36 and IFRS 17.B72 (locked-in yield curve). The risk adjustment at the date of initial recognition of a GIC is determined from the risk adjustment for non-financial risk at the transition date by adjusting this adjustment for the expected release of the risk adjustment before the transition date. This released amount is estimated by reference to the release of the risk adjustment for similar insurance contracts that the insurance company issues at the transition date. The estimate is based on the current release of the risk adjustment at the transition date and is carried out separately for each GIC. The CSM is determined as if interim financial statements had not been prepared before the transition date. If a CSM arises at the date of initial recognition, the CSM is determined at the transition date by applying the aforementioned locked-in yield curve pursuant to IFRS 17.C13(a). In addition, the CSM amounts that would have been recognized in profit or loss for services already provided under the insurance contracts are estimated by comparing the remaining coverage units at the transition date with the coverage units in existence before the transition date. At the transition date, there was no loss component for insurance contracts without direct participation features. In exercise of the option of recognition in other comprehensive income in accordance with IFRS 17.88(b), the amount recognized in other comprehensive income in accordance with IFRS 17.C19(b)(i) is calculated on the basis of the locked-in yield curve.

In the personal insurance business, insurance acquisition cash flows are not allocated to future contract renewals. All insurance acquisition cash flows are allocated to the GICs at the time of initial recognition. This is also implemented for the transition date.

In inward reinsurance, the GICs are generally measured at the transition date using the fully retrospective approach for underwriting years starting with the 2015 financial year. In view of the data available, the modified retrospective approach pursuant to IFRS 17.C6 is used for underwriting years before the 2015 financial year. The modification relates to the locked-in yield curves and approximations of historical data for individual GICs. The fair value approach is not used.

The fully retrospective approach is used for the fire, property, and hail portfolios in the inward reinsurance business and for reinsurance contracts held. The data needed for this, particularly the forecasts for future cash flows for premiums, amortization patterns, and actual cash flows, is available owing to the short coverage periods.

Retrospective initial application resulted in the following adjustments to the income statement, statement of comprehensive income, and balance sheet. As a result of new knowledge gained in the second half of 2023, the amounts on the balance sheet as at January 1, 2022 and thus on the balance sheet as at December 31, 2022 have been changed compared with those published in the interim consolidated financial statements for the period ended June 30, 2023:

Income statement for the period January 1 to December 31, 2022

€ million	2022 before restatement	Amount of restatement	**2022 after restatement**
(…)			
Premiums earned	18,397	-18,397	-
Insurance service result	-	2,077	2,077
Insurance revenue	-	12,424	12,424
Insurance service expenses	-	-10,225	-10,225
Net income/expenses from reinsurance contracts held	-	-123	-123
Gains and losses on investments held by insurance companies and other insurance company gains and losses	-3,389	-370	-3,759
(…)			
Insurance benefit payments	-12,127	12,127	-
Insurance business operating expenses	-3,068	3,068	-
Insurance finance income or expenses	-	1,951	1,951
(…)			
Profit before taxes	1,797	455	2,252
Income taxes	-724	-188	-912
Net profit	**1,073**	**268**	**1,341**
Attributable to:			
Shareholders of DZ BANK	1,031	238	1,269
Non-controlling interests	42	30	72

Statement of comprehensive income for the period January 1 to December 31, 2022

€ million	2022 before restatement	Amount of restatement	**2022 after restatement**
Net profit	1,073	268	1,341
Other comprehensive income/loss	-6,171	3,242	-2,929
Items that may be reclassified to the income statement	**-6,277**	**3,381**	**-2,896**
Gains and losses on debt instruments measured at fair value through other comprehensive income	-8,978	-13,799	-22,777
Exchange differences on currency translation of foreign operations	-	13	13
Insurance finance income or expenses included in other comprehensive income	-	18,452	18,452
(…)			
Income taxes	2,700	-1,285	1,415
Items that will not be reclassified to the income statement	**106**	**-139**	**-33**
Gains and losses on equity instruments for which the fair value OCI option has been exercised	-327	-309	-636
(…)			
Gains and losses arising from remeasurement of defined benefit plans	407	12	419
Income taxes	-145	158	13
Total comprehensive income/loss	**-5,098**	**3,510**	**-1,588**
Attributable to:			
Shareholders of DZ BANK	-4,470	3,127	-1,343
Non-controlling interests	-627	382	-245

Balance sheet as at January 1, 2022

ASSETS

€ million	Jan. 1, 2022 before restatement	Amount of restatement	**Jan. 1, 2022 after restatement**
(…)			
Investments held by insurance companies	129,119	-538	128,581
(…)			
Income tax assets	1,141	4,936	6,077
Other assets	6,501	-630	5,871
(…)			
Total assets	**627,273**	**3,768**	**631,041**

EQUITY AND LIABILITIES

€ million	Jan. 1, 2022 before restatement	Amount of restatement	**Jan. 1, 2022 after restatement**
(…)			
Insurance liabilities	118,863	-118,863	-
Insurance contract liabilities	-	118,119	118,119
Income tax liabilities	1,456	5,556	7,012
Other liabilities	10,797	-2,082	8,715
(…)			
Equity	28,661	1,039	29,700
Shareholders' equity	26,860	720	27,580
(…)			
Retained earnings	12,581	542	13,123
Reserve from other comprehensive income	1,651	178	1,829
(…)			
Non-controlling interests	1,801	319	2,121
Total equity and liabilities	**627,273**	**3,768**	**631,041**

Balance sheet as at December 31, 2022

ASSETS

€ million	Dec. 31, 2022 before restatement	Amount of restatement	Dec. 31, 2022 after restatement
(…)			
Investments held by insurance companies	105,955	-407	105,548
(…)			
Income tax assets	3,428	2,349	5,777
Other assets	7,204	-616	6,588
(…)			
Total assets	**627,041**	**1,324**	**628,365**

EQUITY AND LIABILITIES

€ million	Dec. 31, 2022 before restatement	Amount of restatement	Dec. 31, 2022 after restatement
(…)			
Insurance liabilities	103,795	-103,795	-
Insurance contract liabilities	-	98,328	98,328
Income tax liabilities	1,063	4,283	5,346
Other liabilities	10,999	-2,039	8,960
(…)			
Equity	23,076	4,549	27,625
Shareholders' equity	21,967	3,852	25,819
(…)			
Retained earnings	13,482	880	14,362
Reserve from other comprehensive income	-4,142	2,971	-1,171
(…)			
Non-controlling interests	1,109	697	1,806
Total equity and liabilities	**627,041**	**1,324**	**628,365**

Initial application of IFRS 17 has also resulted in adjustments to the statement of changes in equity and statement of cash flows as well as to the disclosures in the notes to the financial statements listed below. Where relevant, the new balance sheet and income statement structures have been used. The adjustments have been made in note 29 (investments in subsidiaries), note 33 (segment information), note 40 (gains and losses on investments held by insurance companies and other insurance company gains and losses), note 41 (insurance finance income or expenses), note 46 (income taxes), note 47 (items reclassified to the income statement), note 48 (income taxes relating to components of other comprehensive income), note 55 (investments held by insurance companies), note 57 (income tax assets and liabilities), note 58 (other assets), note 68 (insurance contract liabilities), note 69 (other liabilities), note 71 (equity), note 72 (classes, categories, and fair values of financial instruments), note 75 (assets and liabilities measured at fair value on the balance sheet), note 76 (assets and liabilities not measured at fair value on the balance sheet), note 82 (items of income, expense, gains, and losses), note 86 (nature and extent of risks arising from financial instruments), note 87 (maturity analysis), and all notes in chapter F 'Insurance business disclosures'.

The amendments to IAS 1 Presentation of Financial Statements require entities to report their material accounting policies instead of, as previously, their significant accounting policies. The objective of the amendments to IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors is to provide clarification in order to help entities to distinguish between changes to accounting policies and changes to accounting estimates.

Deferred Tax related to Assets and Liabilities arising from a Single Transaction (Amendments to IAS 12 Income Taxes) provides an exemption in certain circumstances that means that no deferred tax assets or liabilities are recognized at the time of acquisition of an asset or liability. This exemption cannot be applied to the recognition of deferred taxes in conjunction with leases or asset retirement/decommissioning obligations.

International Tax Reform – Pillar Two Model Rules (Amendments to IAS 12 Income Taxes) concerns Directive (EU) 2022/2523 of December 14, 2022 and relates to ensuring a global minimum level of taxation for multinational corporate groups and large-scale domestic groups in the EU. For the purposes of this directive, DZ BANK AG is the ultimate parent company and is liable to pay tax. The requirements of the directive were transposed into German national law by means of the Minimum Tax Act (MinStG) and are required to be applied by the entities in the DZ BANK Group from January 1, 2024 onward. As a result of the directive, IAS 12 has been supplemented with rules on recognizing and presenting expenses in connection with collecting top-up taxes in accordance with the directive. In departure from the requirements in the standard that applied in 2023, no deferred taxes in respect of the top-up taxes are to be recognized or disclosed. However, the amendments require certain information to be disclosed, which can be found in note 46.

The amendments to IAS 1, IAS 8, and IAS 12 must be applied for the first time to financial years beginning on or after January 1, 2023. There is no material impact on DZ BANK's consolidated financial statements.

Changes in IFRS endorsed by the EU but not adopted early

The DZ BANK Group has decided against voluntary early adoption of the listed amendments to IFRS:

- *Lease Liability in a Sale and Leaseback* (Amendments to IFRS 16 Leases)
- *Classification of Liabilities as Current or Non-current* and *Non-current Liabilities with Covenants* (Amendments to IAS 1 Presentation of Financial Statements)

The amendments to IFRS 16 clarify that the leaseback liability arising in a sale and leaseback transaction with variable payments that do not depend on an index or interest rate constitutes a lease liability pursuant to IFRS 16. They also clarify that the initial measurement requirements in IFRS 16.100(a) apply to the recognition of the right-of-use asset and the gain or loss from the sale and leaseback. Finally, the amendments clarify that the seller-lessee subsequently measures the right-of-use asset arising from the leaseback by applying IFRS 16.29-35. These amendments to IFRS 16 do not give rise to any need to change the accounting treatment of the Group's sale-and-leaseback transactions.

The amendments to IAS 1 provide further details on how an entity must recognize debt and other liabilities on its balance sheet where the settlement date is uncertain. Such debt and other liabilities must be classified as either current (due or potentially due to be settled within one year) or non-current. The amendments also aim to improve the information that an entity should provide if its right to postpone settling a debt by 12 months or more is subject to covenants.

The amendments to IAS 1 have no impact on DZ BANK's consolidated financial statements because there is no distinction between current and non-current liabilities on its balance sheet.

The amendments to IFRS 16 and IAS 1 must be applied for the first time to financial years beginning on or after January 1, 2024; early adoption is permitted.

Changes in IFRS that have not yet been endorsed by the EU

The following amendments to accounting standards have not yet been endorsed by the EU:

- *Supplier Finance Arrangements* (Amendments to IAS 7 Statement of Cash Flows and IFRS 7 Financial Instruments: Disclosures)
- *Lack of Exchangeability* (Amendments to IAS 21 The Effects of Changes In Foreign Exchange Rates)

The impact of the aforementioned amendments to IFRS on DZ BANK's consolidated financial statements is currently being examined.

Changes in presentation

In accordance with the provisions of IAS 8.41 et seq., the statement of cash flows has been adjusted with effect from 2023, primarily in relation to the assignment of cash and non-cash changes. This resulted in changes to the amounts in the reconciliation of net profit to cash flows from operating activities and in cash flows from investing activities. The adjustment has been made retrospectively.

In accordance with the provisions of IAS 8.41 et seq., financial liabilities that arise from unit-linked insurance contracts are recognized under other liabilities in note 72 (classes, categories, and fair values of financial instruments) from 2023 onward. The adjustment has been made retrospectively.

In accordance with the provisions of IAS 8.41 et seq., other collateral is recognized in note 86 (nature and extent of risks arising from financial instruments) – specifically in the disclosures on the maximum exposure to credit risk – from 2023 onward. The adjustment has been made retrospectively.

In accordance with the provisions of IAS 8.41 et seq., the assignment to the main geographical markets has been amended in note 103 (disclosures on revenue from contracts with customers) – specifically in the disclosures on revenue from contracts with customers, broken down by operating segment – from 2023 onward. The adjustment has been made retrospectively.

Sources of estimation uncertainty

It is sometimes necessary to make assumptions and estimates in accordance with the relevant financial reporting standards in order to determine the carrying amounts of assets, liabilities, income, and expenses recognized in the consolidated financial statements. These assumptions and estimates are based on historical experience, planning, and expectations or forecasts regarding future events.

Assumptions and estimates are used primarily in determining the fair value of financial assets and financial liabilities and in identifying any impairment of financial assets. Estimates also have a material impact on determining the impairment of goodwill or intangible assets acquired as part of business combinations. Furthermore, assumptions and estimates affect the measurement of right-of-use assets, insurance contract liabilities, other assets held by insurance companies, provisions for employee benefits, provisions for share-based payment transactions, provisions relating to building society operations, and other provisions as well as the recognition and measurement of income tax assets and income tax liabilities.

Fair values of financial assets and financial liabilities

If there are no prices available for certain financial instruments from active markets, the fair values of such financial assets and financial liabilities have to be determined on the basis of estimates, resulting in some uncertainty. Uncertainties associated with estimates arise primarily if fair values are determined using valuation techniques involving significant valuation parameters that are not observable in the market. This affects both financial instruments measured at fair value and financial instruments measured at amortized cost whose fair values are disclosed in the notes. The valuation parameter assumptions and valuation methods used to determine fair values are described in the financial instruments disclosures in notes 75 and 76.

Impairment of financial assets

When an impairment test (as described in note 05) is carried out for financial assets that constitute debt instruments or for loan commitments and financial guarantee contracts, it is necessary to determine estimated future cash flows from interest payments and the repayment of principal as well as from any recovery of collateral. This requires assessments and assumptions regarding the amount and timing of future cash flows, in turn giving rise to some uncertainty. The factors influencing impairment that are defined on the basis of judgments include economic conditions, the financial performance of the counterparty, and the value of the collateral held. When an impairment test for portfolios is carried out, parameters such as probability of default, which are calculated with the help of statistical models, are used in the assessments and assumptions.

Goodwill and intangible assets

The recognition of goodwill is largely based on estimated future income, synergies, and non-recognizable intangible assets generated by business combinations or acquired as part of business combinations. The recoverability of the carrying amount is verified by means of budget accounts that are largely based on estimates. Identifiable intangible assets acquired as part of business combinations are recognized on the basis of their future economic benefits. These benefits are assessed by management using reasonable, well-founded assumptions. The estimates applied in the case of business combinations are described in note 101.

Right-of-use assets

The measurement of right-of-use assets in connection with leases (as described in note 12) involves the use of estimates and assumptions, especially in relation to estimated future cash flows, term, and discount rate. Estimates also have a material impact on determining the impairment of right-of-use assets.

Insurance contract liabilities and other assets held by insurance companies

The measurement of insurance contract liabilities and other assets held by insurance companies involves the exercise of judgment, estimates, and assumptions, especially in relation to mortality, claims, rates of return on investment, lapse, and costs. Actuarial calculation methods, statistical estimates, blanket estimates, and measurements based on past experience are used. The basic approaches used in the measurement of insurance contract liabilities are described in the insurance business disclosures in note 11.

Provisions for employee benefits, provisions for share-based payment transactions, and other provisions

Uncertainty associated with estimates in connection with provisions for employee benefits arises primarily from the measurement of defined benefit obligations, on which actuarial assumptions have a material effect. Actuarial assumptions are based on a large number of long-term, forward-looking factors, such as salary increases, annuity trends, and average life expectancy.

In the case of provisions for share-based payment transactions, estimation uncertainty arises from the way in which fair value is determined. This fair value is based on assumptions regarding the payout amount, which in turn depends on the performance of the variables specified in the underlying agreements.

In order to measure provisions relating to building society operations, building society simulations (collective simulations) that forecast home savings customers' future behavior are used that are available for evaluation of the options. These options available to home savings customers include, for example, drawing down the home savings loan, waiving the loan after allocation, or continuing with the home savings contract. Uncertainty in connection with the measurement of the provisions may arise depending on the extent to which the assumptions about future customer behavior – taking account of various interest-rate scenarios and management measures – that were forecast using collective simulation actually materialize in the future. Building society simulations are used to determine the present value of the collective building society operations. The main inputs for the collective simulations are presented in note 26.

Actual cash outflows in the future related to items for which other provisions have been recognized may differ from the forecast utilization of the provisions.

The basis for measurement and the assumptions and estimates underlying the calculation of provisions are described in note 26.

Income tax assets and liabilities

The deferred tax assets and liabilities described in note 57 are calculated on the basis of estimates of future taxable income in taxable entities. In particular, these estimates have an effect on any assessment of the extent to which it will be possible to make use of deferred tax assets in the future. In addition, the calculation of current tax assets and liabilities for the purposes of preparing financial statements involves assessing details relevant to income tax.

Climate-related matters

Climate-related matters impact on the familiar assumptions and estimates. No additional estimation uncertainty has arisen with regard to the calculation of the carrying amounts of assets and liabilities and the calculation of income and expenses. Estimation uncertainty and the related judgments in respect of climate-related matters primarily arise when determining the fair value of financial assets and financial liabilities, identifying any impairment of financial assets, and measuring insurance contract liabilities. Climate-related matters did not result in any explicit adjustments being made in the determination of the fair value of financial assets and financial liabilities in the reporting period. To some extent, however, climate-related matters are factored into the pertinent models implicitly. The consideration of climate-related matters when identifying impairment of financial assets during the reporting period is explained in note 86, specifically in the information on the impact of macroeconomic conditions. When measuring insurance contract liabilities, climate-related matters are taken into account by making prudent additions to the liability for incurred claims and maintaining an extensive reinsurance program that comes into effect when a defined claims threshold is exceeded and thus limits financial risk.

» 03 Scope of consolidation

In addition to DZ BANK as the parent, the consolidated financial statements for the year ended December 31, 2023 include 16 subsidiaries (2022: 17) and 5 subgroups (2022: 5) comprising a total of 90 subsidiaries (2022: 90).

The main change to the scope of consolidation in 2023 was the merger of KBIH Beteiligungsgesellschaft für Industrie und Handel mbH, Frankfurt am Main, into DZ BANK AG.

The consolidated financial statements include 5 joint arrangements in the form of joint ventures with at least one other entity outside the group (2022: 5) and 23 associates (2022: 25) over which DZ BANK has significant influence. These entities are accounted for using the equity method. There are currently no joint arrangements classified as joint operations.

The shareholdings of the DZ BANK Group are listed in full in note 115.

» 04 Procedures of consolidation

Financial information in the consolidated financial statements contains data from the parent company, which incorporates data from its consolidated subsidiaries. The parent company and the consolidated subsidiaries are presented as a single economic entity.

An investee is included in the scope of consolidation as a subsidiary from the date on which DZ BANK obtains control over it. DZ BANK controls an investee when DZ BANK directly or indirectly has power over the investee, is therefore exposed to significant variable returns from its involvement with the investee, and has the ability to affect the variable returns from the investee through this power. Unless otherwise contractually agreed, DZ BANK controls an entity if it holds more than half of the voting rights, either directly or indirectly. The assessment of whether control exists also takes account of potential voting rights, provided they are considered substantial.

DZ BANK also considers itself to have control over an entity in cases where it does not hold the majority of the voting rights but does have the ability to unilaterally direct the relevant activities of the entity concerned. It is sometimes necessary to make judgments, taking all of the relevant facts and circumstances into consideration, when making such a determination. This is particularly applicable to principal/agent relationships, which require an assessment of whether DZ BANK or other parties with decision-making rights are acting as principal or as an agent. With regard to principal/agent relationships, considerable judgments have to be made in order to assess the appropriateness of contractually agreed remuneration and of the level of the variable returns received.

A review is carried out at least once every six months to decide which subsidiaries are to be consolidated.

The financial statements of the entities consolidated in the DZ BANK Group have been prepared using uniform accounting policies. When preparing the consolidated financial statements, uniform accounting policies are used for like transactions.

The consolidated subsidiaries prepared their financial statements on the basis of a financial year ended December 31, 2023. With 19 (2022: 18) exceptions, the separate financial statements of the entities accounted for using the equity method are prepared to the same balance sheet date as that of the parent company. There is no resulting material impact in respect of the subsidiaries and associates concerned, and therefore no interim financial statements have been prepared.

Intragroup assets and liabilities, as well as intragroup income and expenses, are eliminated in full. Intragroup profits or losses resulting from transactions within the group are also eliminated in full.

When a subsidiary is consolidated, the carrying amount of the investment in the subsidiary is offset against the proportionate equity of the subsidiary. Any share of a subsidiary’s equity not attributable to the parent company is reported under equity as non-controlling interests.

Where an entity is controlled without there being an investment in the equity of the controlled entity, the subsidiary’s entire equity is recognized as non-controlling interests under equity. If the subsidiary’s equity does not qualify as equity pursuant to IAS 32, it is recognized under liabilities.

Goodwill resulting from offsetting the acquisition cost of a subsidiary against the equity remeasured at fair value on the acquisition date is recognized as goodwill when the acquisition method is applied. It is recognized under other assets. Goodwill is tested for impairment at least once a year. Any negative goodwill is recognized in profit or loss on the acquisition date.

If DZ BANK loses control over a subsidiary, the assets and liabilities of this former subsidiary, together with the carrying amount of any non-controlling interests in the former subsidiary, are derecognized when control is lost. The fair value of any consideration received is recognized at the same time. The gain or loss arising in connection with the loss of control is recognized in profit or loss.

Entities under joint control with at least one other entity outside the group are accounted for as joint ventures in the consolidated financial statements. DZ BANK has joint control over an arrangement when there is a contractual agreement in place that requires decisions about the arrangement's relevant activities to be reached with the unanimous consent of all the parties sharing control.

DZ BANK has a significant influence over an investee if it can participate in the financial and operating policy decisions of the investee without having control or joint control over it. Unless it can be proved otherwise, this is assumed to be the case where between 20 and 50 percent of the voting shares are held.

Investments in joint ventures and associates are accounted for using the equity method and reported on the balance sheet under investments or investments held by insurance companies.

Under the equity method, the DZ BANK Group's investments in associates and joint ventures are initially recognized at cost. Subsequently, the carrying amount is increased or decreased to recognize the group's share of the profit/loss or other changes to the net assets of the associate or joint venture after the acquisition.

If significant influence over an associate or joint venture is lost, the gain or loss arising from the disposal of the investment accounted for under the equity method is recognized in profit or loss.

» 05 Financial instruments

Categories of financial instruments

Financial assets measured at fair value through profit or loss (fair value PL)

Financial assets that are not measured at amortized cost or at fair value through other comprehensive income are classified as 'financial assets measured at fair value through profit or loss'. This category is broken down into the following subcategories:

Financial assets mandatorily measured at fair value through profit or loss

The subcategory 'financial assets mandatorily measured at fair value through profit or loss' covers financial assets that do not meet the IFRS 9 SPPI criterion and financial assets that were acquired for the purpose of selling them in the near term. This subcategory also includes financial assets that are part of a portfolio of identified financial instruments that are managed together and for which there is evidence of a recent actual pattern of short-term profit-taking. Derivatives that are not designated as hedging instruments are included in this subcategory too.

In the category 'financial assets mandatorily measured at fair value through profit or loss', all changes in fair value are recognized in profit or loss.

Contingent considerations in a business combination

This subcategory covers contingent considerations that the acquirer has classified as financial assets in the context of a business combination.

In the subcategory 'contingent considerations in a business combination', all changes in fair value are recognized in profit or loss.

Financial assets designated as at fair value through profit or loss (fair value option)

Financial assets may be assigned to the subcategory 'financial assets designated as at fair value through profit or loss' by exercising the fair value option, provided that the application of this option eliminates or significantly reduces measurement or recognition inconsistencies (accounting mismatches). The fair value option is applied to eliminate or significantly reduce accounting mismatches that arise if non-derivative financial instruments and related derivatives used to hedge such instruments are measured differently. Derivatives are measured at fair value through profit or loss, whereas non-derivative financial instruments are measured at amortized cost or changes in fair value may be recognized in other comprehensive income. If no hedge accounting takes place, this gives rise to accounting mismatches that can be significantly reduced by applying the fair value option. The fair value option is used in the context of financial assets to prevent accounting mismatches that could arise in connection with loans and advances to banks and customers and bearer bonds.

In the subcategory 'financial assets designated as at fair value through profit or loss', all changes in fair value are recognized in profit or loss.

Financial assets measured at fair value through other comprehensive income (fair value OCI)

This category is broken down into the following subcategories:

Financial assets mandatorily measured at fair value through other comprehensive income

A financial asset is assigned to this subcategory if it is held in accordance with a business model aimed both at collecting contractual cash flows and at selling financial assets. Moreover, the contractual terms of the financial asset must give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding (SPPI criterion).

Because of the SPPI criterion, these financial assets only comprise debt instruments. They are measured at fair value. Interest income, loss allowances, and currency translation effects must be recognized in profit or loss. Any differences between the amortized cost and the fair value that do not result from impairment losses or currency translation are recognized in other comprehensive income. The amounts recognized in other comprehensive income must be recycled to the income statement upon derecognition.

Financial assets designated as at fair value through other comprehensive income (fair value OCI option)

There is an irrevocable option to designate equity instruments as 'financial assets designated as at fair value through other comprehensive income' (fair value OCI option) upon initial recognition. Changes in fair value are recognized in other comprehensive income, except in the case of dividends that do not constitute repayment of capital. The cumulative other comprehensive income is not subsequently recycled to the income statement, e.g. due to derecognition of the instrument. After derecognition of these equity instruments, the cumulative other comprehensive income is reclassified to retained earnings. The fair value OCI option can generally only be exercised for equity instruments that are not held for trading and do not constitute contingent consideration recognized by the acquirer in a business combination pursuant to IFRS 3.

Financial assets measured at amortized cost (AC)

A financial asset is assigned to this category if it is held in accordance with a business model aimed at holding financial assets for the purpose of collecting contractual cash flows. The contractual terms of the financial asset must give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Because of the SPPI criterion, financial assets in this category only comprise debt instruments. They are measured at amortized cost using the effective interest method. Interest income (using the effective interest method), loss allowances, and currency translation effects are recognized in profit or loss.

Financial liabilities measured at fair value through profit or loss (fair value PL)
Financial liabilities that are not measured at amortized cost are classified as 'financial liabilities measured at fair value through profit or loss'. This category is broken down into the following subcategories:

Financial liabilities mandatorily measured at fair value through profit or loss
The subcategory 'financial liabilities mandatorily measured at fair value through profit or loss' covers financial liabilities that are issued with the intention of repaying them in the near term and financial liabilities that are part of a portfolio of identified financial instruments that are managed together and for which there is evidence of a recent actual pattern of short-term profit-taking. Derivatives that are not designated as hedging instruments are included in this subcategory too.

In the subcategory 'financial liabilities mandatorily measured at fair value through profit or loss', all changes in fair value are recognized in profit or loss.

Contingent considerations in a business combination
This subcategory covers contingent considerations that the acquirer has classified as financial liabilities in the context of a business combination.

In the subcategory 'contingent considerations in a business combination', all changes in fair value are recognized in profit or loss.

Financial liabilities designated as at fair value through profit or loss (fair value option)
Financial liabilities may be assigned to the 'financial instruments designated as at fair value through profit or loss' subcategory by exercising the fair value option, provided that the application of this option eliminates or significantly reduces measurement or recognition inconsistencies (accounting mismatches), the financial liabilities are managed as a portfolio on a fair value basis, or they include one or more embedded derivatives required to be separated from the host contract.

In the case of financial liabilities, the fair value option is exercised to eliminate or significantly reduce accounting mismatches for loan liabilities to banks and customers, issued registered or bearer Pfandbriefe, other bonds and commercial paper, and registered or bearer subordinated liabilities. Some of the promissory notes and bonds issued are structured financial instruments containing derivatives (in the form of caps, floors, collars, or call options) for which bifurcation is not required. The derivative components of these instruments are subject to economic hedging that does not meet the criteria for the application of hedge accounting.

The fair value option is also applied to structured financial liabilities containing embedded derivatives requiring bifurcation, provided that the embedded derivatives cannot be measured separately and the financial liabilities are not designated as held for trading. The issued financial instruments in this case are primarily issues of interest-bearing securities with embedded call options and interest-rate cap/floor options, as well as credit-linked notes.

As regards financial liabilities designated as at fair value through profit or loss, any gains/losses resulting from a change in the fair value of a financial liability that is attributable to a change in the liability's credit risk must be recognized in other comprehensive income. The rest of the change in the fair value of this liability is recognized in profit or loss. The amounts recognized in other comprehensive income are reclassified to retained earnings on derecognition of the relevant financial liability.

Financial liabilities measured at amortized cost (AC)

For measurement subsequent to initial recognition, financial liabilities are generally categorized as 'financial liabilities measured at amortized cost'.

The following are not included in this category: Financial liabilities measured at fair value through profit or loss, financial liabilities that arise when a transfer of a financial asset does not satisfy the condition for derecognition or accounting treatment is based on a continuing involvement, financial guarantee contracts, loan commitments with an interest rate below the market interest rate, and contingent considerations recognized by the acquirer in a business combination pursuant to IFRS 3.

In accordance with IAS 32, shares in partnerships are normally categorized as debt instruments. Given their subordinated status compared with the liabilities of the partnerships concerned, non-controlling interests in partnerships are reported as subordinated capital. Profit attributable to non-controlling interests in partnerships that has not yet been distributed is recognized under other liabilities, provided that the resulting liability is not of a subordinated nature. The capital and profit of partnerships attributable to non-controlling interests in partnerships are classified as 'share capital repayable on demand' under subordinated capital and other liabilities and are assigned to the 'financial liabilities measured at amortized cost' category.

This category also includes liabilities under compensation payment obligations owed to non-controlling interests in consolidated subsidiaries. These liabilities arise if DZ BANK or some other entity controlled by DZ BANK has concluded a profit transfer agreement with a subsidiary in accordance with section 291 (1) of the German Stock Corporation Act (AktG) under which there are non-controlling interests. Liabilities under compensation payment obligations are recognized at the amount of the discounted obligation.

In addition, this category includes liabilities from investment contracts that are not designated as unit-linked insurance products. There is no significant transfer of insurance risk in these investment contracts and they do not therefore satisfy the criteria for an insurance contract under IFRS 17. As a consequence, they need to be treated as financial instruments in accordance with IFRS 9.

Interest expense (using the effective interest method) and currency translation effects are recognized in profit or loss.

Other financial instruments

Hedging instruments

The designation of derivative and non-derivative financial assets and liabilities as hedging instruments is governed by IFRS 9. The recognition and measurement of these hedging instruments is described in note 16.

Liabilities from financial guarantee contracts

Liabilities from financial guarantee contracts measured in accordance with IFRS 9 must be recognized as a liability at fair value by the issuer of the guarantee at the date of issue. At the date of issue, the fair value is normally equivalent to the present value of the consideration received for issuing the financial guarantee contract. In any subsequent measurement, the obligation must be measured at the higher of the amount determined in accordance with the impairment model and the amount initially recognized less, where appropriate, the cumulative amount of income recognized in accordance with the principles of IFRS 15. In the presentation of financial guarantee contracts, the guarantee commission receivables due from the beneficiary to the DZ BANK Group as the issuer of the guarantee are offset against guarantee obligations (net method).

Finance lease receivables and lease liabilities

Finance lease receivables and lease liabilities fall within the scope of IFRS 16.

Financial assets and financial liabilities specific to insurance business

In addition to financial instruments that fall within the scope of IFRS 9, other assets and liabilities are held in the context of the insurance business.

Deposits with ceding insurers are recognized at their nominal amounts. Receivables arising out of direct insurance operations and receivables arising out of reinsurance operations are recognized at their nominal amounts net of payments made. Impairment losses on receivables arising out of direct insurance operations and on receivables arising out of reinsurance operations are recognized directly in the carrying amounts. Assets related to unit-linked contracts are measured at fair value through profit or loss on the basis of the underlying investments.

Deposits received from reinsurers, payables arising out of direct insurance operations, and payables arising out of reinsurance operations are recognized at their nominal amounts.

Deposits with ceding insurers as well as assets related to unit-linked contracts are reported on the balance sheet under investments held by insurance companies. Deposits received from reinsurers, receivables and payables arising out of direct insurance operations, and receivables and payables arising out of reinsurance operations are recognized under other assets or other liabilities.

Initial recognition and derecognition of financial assets and financial liabilities

Derivatives are initially recognized and derecognized on the trade date. Regular way purchases and sales of non-derivative financial assets and liabilities are generally recognized and derecognized using settlement date accounting. In the case of consolidated investment funds and the issue of certain securities, the financial instruments are also recognized on the trade date. Changes in fair value between the trade date and settlement date are recognized in accordance with the categorization of the financial assets and financial liabilities.

All financial instruments are generally measured at fair value on initial recognition. In the case of financial assets or financial liabilities not subsequently measured at fair value through profit or loss, transaction costs directly attributable to the acquisition of the financial asset or issue of the financial liability concerned are added or deducted on initial recognition.

Differences between transaction prices and fair values are recognized in profit or loss on initial recognition if the fair values correspond to the price quoted in an active market for an identical asset or identical liability or are based on a valuation technique that only uses data from observable markets. If the fair value is derived from transaction prices at the time of acquisition and this value is then used as a basis for any subsequent measurement, any differences between the transaction price and the fair value are only recognized in profit or loss if they can be attributed to a change in observable market data. Any differences not recognized at the time of initial recognition are amortized to profit or loss over the maturity period or at the time that all parameters factored into the valuation models are observable.

Financial assets are derecognized if the contractual rights to the cash flows from the financial assets have expired or these rights have been transferred to third parties, and substantially no risks or rewards of ownership in the financial assets remain. If only some of the risks and rewards are transferred and control is partly retained, the financial asset is derecognized only up to the amount of the continuing involvement. If the criteria for derecognizing financial assets are not satisfied, the transfer to third parties is recognized as a secured loan. Financial liabilities are derecognized when the contractual obligations have been settled, extinguished or have expired.

Gains and losses from the derecognition of financial assets measured at amortized cost are reported as a separate line item in the income statement.

Loss allowances for financial assets

Under IFRS 9, loss allowances are recognized for those financial assets that constitute debt instruments and for loan commitments and financial guarantee contracts. Derivatives and equity instruments do not fall within the scope of the IFRS 9 impairment model. Loss allowances are recognized in respect of the following financial assets:

– Financial assets in the IFRS 9 category 'financial assets measured at amortized cost'
– Financial assets (only debt instruments) in the IFRS 9 category 'financial assets measured at fair value through other comprehensive income'
– Loan commitments where there is a current legal obligation to grant credit (irrevocable loan commitments), provided they are not measured at fair value through profit or loss
– Financial guarantee contracts, provided they are not measured at fair value through profit or loss
– Finance lease receivables
– Trade receivables and contract assets that fall within the scope of IFRS 15

Upon initial recognition, all financial assets are assigned to stage 1 with the exception of financial assets that are purchased or originated credit-impaired assets (POCI assets). Loss allowances for assets in stage 1 must be recognized in an amount equal to the 12-month expected credit loss. Loss allowances for financial assets measured at amortized cost and finance lease receivables are presented in the loss allowances line item on the assets side of the balance sheet. For financial assets measured at fair value through other comprehensive income, loss allowances are recognized in the reserve from other comprehensive income on the equity and liabilities side. Loss allowances for loan commitments and financial guarantee contracts are recognized on the equity and liabilities side under provisions.

At each balance sheet date, assets are assigned to stage 2 if their credit risk has significantly increased since initial recognition but there is no objective evidence of impairment, which would require their assignment to stage 3. For these assets, the loss allowances are measured at the amount of the lifetime expected credit losses.

Trade receivables and contract assets that fall within the scope of IFRS 15 are allocated directly to stage 2 (simplified approach).

To simplify matters, it can be assumed that the credit risk of a financial instrument has not increased significantly since initial recognition if – for example, on the basis of investment-grade credit ratings – the financial instrument has a low credit risk at the balance sheet date (low credit risk exemption). The low credit risk exemption is applied to securities.

Financial assets deemed to be impaired on the basis of objective evidence are assigned to stage 3. For these assets, the loss allowances are measured at the amount of the lifetime expected credit losses.

Financial assets subject to the IFRS 9 impairment rules must be reviewed at every balance sheet date to ascertain whether one or more events have occurred with an adverse impact on the estimated future cash flows of these financial assets.

Financial assets that are purchased or originated credit-impaired assets (POCI assets) are initially recognized at their carrying amount less the lifetime expected credit losses and amortized using a risk-adjusted effective interest rate. At the balance sheet date, only the cumulative changes to the lifetime expected credit losses since initial recognition are recognized as a loss allowance. Stage allocation is not required for these assets. Please refer to note 86 for more detailed information on loss allowances for financial assets.

Embedded derivatives

An embedded derivative is a component of a hybrid contract that also includes a non-derivative financial instrument (host contract), with the effect that some of the cash flows of the combined financial instrument vary in a way similar to those of a standalone derivative. A derivative that is attached to a financial instrument but is contractually transferable independently of that instrument, or has a different counterparty, is not an embedded derivative, but a separate financial instrument.

If a hybrid contract contains a host contract that is a financial asset, the categorization rules for financial assets are applied to the entire hybrid contract.

If a hybrid contract contains a host contract that is a financial liability, an embedded derivative is separated from the host contract and accounted for separately if:

– the economic characteristics and risks of the derivative are not closely related to the economic characteristics and risks of the host contract;
– a separate instrument with the same terms as the embedded derivative would meet the definition of a derivative; and
– the hybrid contract is not measured at fair value through profit or loss.

If the embedded derivative does not meet all of these conditions, it may not be separated from the host contract. When an embedded derivative is separated, the host contract is accounted for in accordance with the pertinent standards.

If a contract includes one or more embedded derivatives and the host contract is not a financial asset, the entire hybrid contract can be categorized as measured at fair value through profit or loss. This is not the case where embedded derivatives only have an insignificant impact on the contractually specified cash flows or, upon initial comparison with similar hybrid instruments, it is evident without – or with only minor – analysis that separation of the embedded derivative is not permitted.

Classes of financial instruments

For the purposes of the disclosures on the importance of financial instruments to financial position and financial performance, financial instruments falling within the scope of IFRS 7 are classified using the 7 classes of financial instruments described below.

Classes of financial assets

Financial assets measured at fair value

The class of financial assets measured at fair value comprises the following categories defined by IFRS 9:

- ‘Financial assets measured at fair value through profit or loss’ with the subcategories ‘financial assets mandatorily measured at fair value through profit or loss’, ‘contingent considerations in a business combination’ (‘contingent considerations’), and ‘financial assets designated as at fair value through profit or loss’ (fair value option)
- ‘Financial assets measured at fair value through other comprehensive income’ with the subcategories ‘financial assets mandatorily measured at fair value through other comprehensive income’ and ‘financial assets designated as at fair value through other comprehensive income’ (fair value OCI option)

In addition to the financial assets in the categories specified above, this class of financial assets measured at fair value includes derivatives used for hedging (positive fair values).

Financial assets measured at amortized cost

The ‘financial assets measured at amortized cost’ class includes, in particular, cash and cash equivalents measured at amortized cost, loans and advances to banks and customers measured at amortized cost, and investments measured at amortized cost.

Finance leases

The ‘finance leases’ class comprises solely finance lease receivables.

Classes of financial liabilities

Financial liabilities measured at fair value

The ‘financial liabilities measured at fair value’ class comprises financial liabilities in the category ‘financial liabilities measured at fair value through profit or loss’ with the subcategories ‘financial liabilities mandatorily measured at fair value through profit or loss’, ‘contingent considerations in a business combination’ (‘contingent considerations’), ‘financial liabilities designated as at fair value through profit or loss’ (fair value option), and derivatives used for hedging (negative fair values).

Financial liabilities measured at amortized cost

The class known as ‘financial liabilities measured at amortized cost’ is identical to the category of financial liabilities of the same name.

Leases

The ‘leases’ class comprises solely lease liabilities.

Financial guarantee contracts and loan commitments

Provisions for financial guarantee contracts and provisions for loan commitments within the scope of IAS 37 are aggregated in the class ‘financial guarantee contracts and loan commitments’.

» 06 Hedge accounting

General information on hedge accounting

As an integral part of its risk management strategy, the DZ BANK Group hedges against risks arising in connection with financial instruments.

If the hedging of risk in connection with financial instruments gives rise to accounting mismatches between the hedged item and the hedging instrument used, the DZ BANK Group designates the hedging transaction as a hedge in accordance with the hedge accounting requirements of IFRS 9 in order to eliminate or reduce such mismatches. In exercise of the option available under IFRS 9.6.1.3, the DZ BANK Group continues to account for portfolio hedges in application of the rules under IAS 39.

Fair value hedges

A fair value hedge is intended to ensure that changes in the fair value of the hedged item are offset by countervailing changes in the fair value of the hedging instrument. Changes in the fair value of the hedged item attributable to the hedged risk and changes in the fair value of the hedging instrument are recognized in profit or loss. Where equity instruments are hedged whose changes in fair value are recognized in other comprehensive income, the changes in the fair value of the hedging instruments are also recognized in other comprehensive income. Risks may be hedged by designating hedges either on an individual basis in accordance with IFRS 9 or on a portfolio basis in accordance with IAS 39.

Hedged items categorized as ‘financial assets measured at amortized cost’ or ‘financial liabilities measured at amortized cost’ are measured in accordance with the general measurement principles for these financial instruments. The values are adjusted for the change in fair value attributable to the hedged risk. Hedged items categorized as ‘financial assets measured at fair value through other comprehensive income’ are measured at fair value, although only changes not attributable to the hedged changes in fair value are recognized in other comprehensive income. Interest income and interest expense arising from hedged items or hedging instruments are recognized under net interest income.

If the fair value is hedged against interest-rate risks on a portfolio basis, the cumulative changes in fair value attributable to the hedged risk are reported on the balance sheet under fair value changes of the hedged items in portfolio hedges of interest-rate risk, either under assets or liabilities depending on whether the portfolio comprises financial assets or financial liabilities.

In fully effective hedges, the changes in fair value (attributable to the hedged risk) recognized in profit or loss over the lifetime of the hedge completely cancel each other out. Any changes in fair value recognized in the carrying amount of the hedged items are amortized through profit or loss by the time the hedge has been terminated.

Cash flow hedges

The purpose of cash flow hedges is to ensure that changes in uncertain future cash flows from hedged items are offset by changes in cash flows from hedging instruments.

Hedging instruments are measured at fair value. Changes in fair value attributable to the effective portion of the hedge are recognized in other comprehensive income. Changes in fair value attributable to the ineffective portion of the hedge are recognized in profit or loss. Hedged items are recognized and measured in accordance with the general principles for the relevant measurement category. At the end of a hedging relationship, any changes in fair value recognized in other comprehensive income must be reclassified to profit or loss on the date on which the hedged items or transactions are also recognized in profit or loss.

Hedges of net investments in foreign operations

The purpose of hedges of net investments in foreign operations is to offset exchange differences resulting from net investments denominated in foreign currency.

Hedges of net investments in foreign operations are accounted for in the same way as cash flow hedges.

» 07 Currency translation

All monetary assets and liabilities, together with unsettled spot transactions, are translated at the closing rate into the relevant functional currency of the entities in the DZ BANK Group. Cash in foreign currency is translated using the buying rate for cash on the balance sheet date. The translation of non-monetary assets and liabilities depends on the way in which these assets and liabilities are measured. If non-monetary assets are measured at amortized cost, they are translated using the historical exchange rate. Non-monetary assets measured at fair value are translated at the closing rate. Income, expenses, gains, and losses are translated on the date they are recognized either in profit or loss or in other comprehensive income.

If the functional currency of subsidiaries consolidated in the DZ BANK Group is different from the group’s reporting currency (euros), all assets and liabilities are translated at the closing rate. Equity (with the exception of the revaluation reserve) is translated at the historical rate. Income and expenses are translated at the spot rate on the transaction date or, in a simplified procedure, at the average rate. The closing rate can also be used if there is no material impact compared with the use of average rates. Any differences arising from currency translation are reported in the currency translation reserve. In most cases, the functional currency of the entities included in the consolidated financial statements is the euro, i.e. the group reporting currency.

» 08 Offsetting of financial assets and financial liabilities

Financial assets and financial liabilities are offset and reported as a net amount on the balance sheet if the group currently has a legally enforceable right to set off the amounts and intends either to settle on a net basis or to realize the asset and settle the liability simultaneously.

The legal right of set-off cannot be contingent on a future event and must be exercisable in the normal course of business, in the event of default, and in the event of insolvency of the entity or any of the counterparties.

» 09 Sale and repurchase agreements, securities lending

Sale and repurchase agreements (repos) are transactions in which the parties agree the sale and subsequent repurchase of securities at a fixed price and time. The risks and rewards of ownership of the sold securities remain in full with the original seller, provided that the buyer is under an obligation to sell back the securities. If the DZ BANK Group enters into repos as the original seller, the securities sold continue to be recognized on the balance sheet because the derecognition criteria in IFRS 9.3 et seq. are not satisfied. A liability corresponding to the amount of the purchase price received is recognized. If the group enters into reverse repos as a buyer, the securities purchased must not be recognized on the balance sheet. A receivable corresponding to the amount of the purchase price paid is recognized.

Securities lending transactions are transactions in which the lender provides the borrower with securities for use over a defined period of time. Securities lent as part of securities lending transactions remain on the balance sheet. Where collateral is received in this regard, and this collateral is in cash, a liability is recognized. Borrowed securities do not meet the recognition criteria set out in IFRS 9.1 et seq. and must therefore not be recognized on the balance sheet. Any cash collateral furnished in connection with borrowed securities is reported as a receivable.

Sale and repurchase agreements and securities lending transactions result in transfers in which the transferred assets remain on the balance sheet in their entirety. The DZ BANK Group is not involved in any transfers in which the transferred assets are recognized according to the extent of continuing involvement or transfers of financial assets with a continuing involvement that are fully derecognized.

» 10 Collateral

Receivables are recognized for assets pledged as collateral in the form of cash deposits. Other assets pledged as collateral continue to be reported on the balance sheet unchanged. Where collateral is received, and this collateral is in cash, a liability for a corresponding amount is recognized. Other financial or non-financial assets received as collateral are not recognized on the balance sheet unless the assets are obtained in connection with the recovery of collateral or a purchase of real estate that was previously held as collateral.

» 11 Insurance business

General information on the accounting treatment of insurance business

The insurance business comprises insurance contracts, investment contracts, and service contracts. It also includes financial guarantee contracts with policyholders.

Under an insurance contract, the issuer accepts significant insurance risk from a policyholder by agreeing to compensate the policyholder if an uncertain future event adversely affects the policyholder. Insurance contracts are recognized in accordance with the requirements of IFRS 17. Investment contracts are mainly pension fund contracts based on defined benefit plans or contracts to protect semi-retirement employment models. Investment contracts are classified as financial instruments within the scope of IFRS 9. Service contracts comprise, in particular, separable components of insurance contracts that contain services other than services pursuant to IFRS 17. Such service contracts are subject to the revenue recognition requirements specified in IFRS 15. Any financial guarantee contracts in connection with insurance business are recognized in accordance with the accounting requirements applicable to insurance contracts.

The insurance business is reported under specific insurance items in the income statement and on the balance sheet. Material components of the specific insurance items are described below.

Financial assets and financial liabilities

Financial assets and financial liabilities held or acquired as part of insurance business are accounted for in accordance with the accounting policies for financial instruments described in note 05. These financial assets and financial liabilities are reported under investments held by insurance companies, other assets held by insurance companies, and other liabilities of insurance companies. Any loss allowances related to financial assets reported under investments held by insurance companies or other assets held by insurance companies are recognized for the categories ‘financial assets measured at amortized cost’ and ‘financial assets measured at fair value through other comprehensive income’ and are applied as a deduction on the assets side of the balance sheet or in the reserve from other comprehensive income. Loss allowances are presented on a net basis within the two balance sheet items ‘investments held by insurance companies’ and ‘other assets held by insurance companies’. However, in the notes on these balance sheet items, the loss allowances are presented on a gross basis.

Other liabilities of insurance companies include the performance obligations under investment contracts for which no material insurance risk is assumed when the policy is concluded. These are reported under liabilities from investment contracts within payables and residual other liabilities. The underlying financial instruments in these contracts are reported as part of assets related to unit-linked contracts under investments held by insurance companies.

Investment property

The investment property included in the investments held by insurance companies is measured at amortized cost in accordance with the cost model. On subsequent measurement, straight-line depreciation is applied over the asset’s useful life on the basis of cost.

Any expenditure that increases value and extends the useful life of real estate or results in a significant improvement in the fabric of a building is capitalized. Maintenance and repair costs are expensed as incurred.

Recoverable amounts are determined for real estate so that this information can be used in impairment tests and provided in the disclosures required in the notes to the financial statements in accordance with the provisions of IFRS 13. For this purpose, standard valuation methods are generally used that are based on the requirements of the German Real Estate Valuation Guidelines (WertR 2006) and the German Building Code (BauGB). Accordingly, the current value of real estate is determined by using the sales comparison approach, income approach, or cost approach and taking into account the provisions of any relevant contracts.

Advantages gained from low-interest, non-interest-bearing, or forgivable loans, including development loans, are recognized in the same way as government grants. The amount of financial assistance or any government grant is deducted when the carrying amount of the asset is identified and is then recognized in profit or loss over the period covered by the assistance or grant by means of a reduced depreciation charge.

General measurement methods

IFRS 17 includes 3 measurement methods, the main one being the general measurement model. The others are the premium allocation approach – a simplified approach for short-term business – and the variable fee approach for insurance contracts with direct participation features. All of the measurement models are used. However, the degree to which the measurement models are used in the individual business segments varies due to the differences in the nature of the aggregated business segments.

General measurement model

For the general measurement model, IFRS 17 specifies that the liability for remaining coverage for a GIC at initial recognition is calculated as the sum of the fulfillment cash flows and the CSM. The fulfillment cash flows comprise the probability-weighted estimate of future cash flows, adjusted for the time value of money and for financial and non-financial risk. All relevant uncertainties arising from financial risk are factored into the estimate of the cash flows. An adjustment for non-financial risk is also made. The CSM is the unearned profit that will be recognized in the future during the coverage period. It is recognized in profit or loss in accordance with an amortization pattern. In the general measurement model, measurement is based on GICs instead of individual contracts. To form the GICs, portfolios are defined that comprise contracts that are subject to similar risks and managed together. These portfolios are divided into GICs based on profitability, measurement approach, and annual cohorts.

On subsequent measurement, the carrying amount of a GIC at the end of each reporting period is the sum of the liability for future coverage and the liability for incurred claims. On subsequent measurement of the liability for remaining coverage, each GIC is remeasured using current assumptions and parameters. As a result, the CSM incorporates changes to non-financial estimates regarding future coverage and new business margins and is updated in line with the provision of services. The liability for remaining coverage is calculated at each balance sheet date from the sum of the present value of the estimated cash outflows, the risk adjustment for non-financial risk, and the CSM.

The general measurement model is used for inward reinsurance and for reinsurance contracts held (with the exception of the fire, property, and hail portfolios in inward reinsurance), the risk part of the casualty insurance with premium refund business in non-life insurance, and credit insurance as part of the personal insurance business.

Premium allocation approach

The measurement of a GIC may be simplified using the premium allocation approach, provided that certain criteria are met. This simplification can be applied upon initial recognition of a GIC if an entity reasonably expects that use of the premium allocation approach will result in a measurement of the liability for future coverage that is not materially different from its measurement under the general measurement model or if the coverage period of each contract in the GIC is one year or less. When comparing the different possible measurements, the impact of the time value of money and the different amortization patterns of the liability for remaining coverage on profit or loss is taken into account. In view of the nature of the underlying business, no significant variability in the fulfillment cash flows before claims are incurred is expected.

At initial recognition of each group of insurance contracts measured using the premium allocation approach, the carrying amount of the liability for remaining coverage is measured on the basis of the premiums received at initial recognition less any insurance acquisition cash flows that have been allocated to the GIC. The carrying amount is also adjusted for any amounts arising from the derecognition of any assets or liabilities that were previously recognized for cash flows related to the GIC, including any assets for insurance acquisition cash flows.

Reinsurance contracts held are measured on the same basis as the underlying insurance contracts. If a loss is recognized at initial recognition of a group of onerous underlying insurance contracts or if further onerous underlying insurance contracts are added to a GIC, a loss recovery component is calculated, provided that corresponding reinsurance is in place. It is calculated by multiplying the loss recognized for the underlying contracts by the percentage of claims from the reinsurance contracts held.

On subsequent measurement, the carrying amount of the liability for remaining coverage is increased by premiums received and by the amortization of the insurance acquisition cash flows, which are recognized as an expense, and is reduced by the amount recognized as insurance revenue for services provided and by all additional insurance acquisition cash flows allocated after initial recognition. The same applies to subsequent measurement of reinsurance contracts held, with the exception of insurance acquisition cash flows recognized that are not available for these contracts.

The premium allocation approach is used for the non-life insurance business (except for casualty insurance with premium refund), for the fire, property, and hail portfolios in inward reinsurance, for international travel healthcare insurance in personal insurance, and for reinsurance contracts held.

Variable fee approach

Insurance contracts with direct participation features are measured in accordance with the rules of the variable fee approach. Initial measurement is the same as under the general measurement model, whereas subsequent measurement – particularly regarding the updating of the CSM – takes policyholder participation features into account.

The annual cohort rule under IFRS 17.22 as endorsed by the EU is optional; this option is exercised. The European Commission permits users in the EU to choose whether to apply the requirement under IFRS 17.22 for certain contracts or not. This decision affects the portfolios pursuant to article 2 (2) letter a) of Regulation (EU) 2021/2036. These comprise GICs with direct participation features, groups of investment contracts with discretionary participation features, and insurance contracts with cash flows that affect or are affected by other insurance contracts in accordance with IFRS 17.B67 and IFRS 17.B68 (mutualization). This mutualization takes place across annual cohorts. In the personal insurance business involving contracts with direct participation features and with mutualization, and in casualty insurance business with premium refund involving endowment life insurance, annual cohorts are generally not formed.

On subsequent measurement of a GIC with direct participation features, the fulfillment cash flows for the entirety of the changes to the obligation to pay policyholders are adjusted by an amount corresponding to the fair value of the underlying items. These changes do not relate to future services and are therefore recognized in profit or loss. The CSM is then adjusted by the changes to the entity's share of the fair value of the underlying items that relate to future services.

The variable fee approach is used for the personal insurance business (except for credit insurance and international travel healthcare insurance) and for the savings component in casualty insurance with premium refund in the non-life insurance business.

Insurance contract assets and liabilities

Liability for remaining coverage

Fulfillment cash flows

For the non-life portfolios, cash flows – calculated using the general measurement model – for estimated future claims and the associated premiums and costs are needed to be able to determine the liability for remaining coverage. The estimated future cash flows are determined using estimated ratios, realization patterns, estimated premiums written, and estimated premiums earned.

The following ratios are modeled:

– Estimated ultimate claims rates in order to model the future claims expenses for compensation payments, recourse, excess proceeds, and loss sharing agreements as well as external claim settlement costs
– Expected ratios for internal claim settlement costs, insurance acquisition cash flows, administration costs, fire protection taxes, premium refunds, and lapse

Various realization patterns are modeled for settlement purposes. The payment pattern for future compensation payments, recourse, excess proceeds, loss sharing agreements and claim settlement costs is derived from the settlement pattern used in the recognition of claims provisions. In addition, various payment patterns for the insurance acquisition cash flows, administration costs, fire protection taxes, and premium refunds are modeled.

In the personal insurance business, the fulfillment cash flows are based on a projection of future cash flows within the contract boundaries. This takes account of all cash inflows and outflows that are needed to settle the insurance liabilities during their term to maturity. These comprise premium payments and related cash flows, all payments to policyholders and beneficiaries (including future policyholder participation), and all expenses incurred in order to fulfill the insurance obligations, where these can be allocated directly.

Premiums, guaranteed benefits, and costs are projected for the main portfolios on an individual contract basis until expiry. The stochastic measurement is primarily based on these deterministic cash flows, with other factors such as dynamic policyholder behavior also taken into account. Business that is not modeled on an individual contract basis is taken into account using an appropriate scaling approach.

In addition to the product and portfolio data at the start of the projection, assumptions about changes in the portfolio over the course of the projection are also incorporated. These are assumptions about biometrics and policyholder behavior, such as second-order mortality probabilities, probabilities for lump-sum payments, and lapse probabilities. Inflation assumptions are taken into account in the cost projection.

To measure the policyholder participation payments, the policyholder participation is allocated for each year of the projection depending on the funds available from the provision for premium refunds under HGB. The HGB provision for premium refunds is updated in accordance with the German Minimum Addition Regulation (MindZV).

The value of the options and guarantees is determined using stochastic simulation.

In inward reinsurance, the fulfillment cash flows – both for the liability for remaining coverage and for the liability for incurred claims – are measured using estimates of future cash flows determined in accordance with IFRS 17.33-35 and taking account of IFRS 17.B65, B66, and B66(a). A distinction is made in the modeling between cash flows related to premiums, cash flows related to benefits, and cash flows related to costs. The costs modeled are the administration costs that can be allocated and other insurance-related costs. IFRS 17.59(a) applies only if insurance acquisition cash flows within the meaning of IFRS 17 exist.

The estimates of future cash flows are determined for each GIC, broken down into items relating to premiums, claims, and costs, using a multi-stage model as a best estimate on the basis of past data and future forecasts. The future cash flows of the outstanding payments are generated using actuarial payment flow patterns. Changes to estimates of future cash flows are predominantly based on information from previous insurers and on historic and current data. Changes to estimates that are based on the exercise of judgment are documented separately. The modeling of the estimated cash flows is based on the 5 biggest currencies in terms of volume (euro, US dollar, pound sterling, Japanese yen, and South African rand).

The outstanding cash flows are then divided into those for coverage already provided (liability for incurred claims) and those for coverage still outstanding (liability for remaining coverage). The future cash flows are determined on an underwriting year basis, although forecasts of future claims and the settlement of claims incurred are combined. It is therefore necessary to allocate the remaining claims provision to future coverage and past coverage. The basis for this distribution draws on the breakdown of the total estimate of premiums at each balance sheet date. Analysis of the settlement year enables the premium payments to be allocated to the actual coverage provided by the previous insurer.

Risk adjustment for non-financial risks

A confidence level technique is used to determine the risk adjustment for non-financial risk. A confidence level of 75 percent has been set for the Group. The option to not split the change in the risk adjustment into an insurance service component and an insurance finance component is not exercised. When determining the risk adjustment for each GIC, no risk compensation effects are taken into account that go beyond the level of the individual legal entity.

Discount rates

All cash flows are discounted with a risk-free yield curve that has been adjusted to reflect the liquidity characteristics of the insurance contracts. The liquidity of an insurance contract is determined by the predictability of its cash flows. The amount of the liquidity premium is derived from the liquidity of the reference market. Uncertainties in determining the discount rates and, in particular, the differences between different insurance contracts are taken into account in the measurement of the fulfillment cash flows at another point and are thus not taken into account by adjusting the yield curve. The relevant uncertainties arising from financial risk are factored into the estimate of the cash flows as part of a stochastic measurement that is based on up-to-date market prices of relevant hedging instruments. Non-financial uncertainties are reflected in the risk adjustment for non-financial risks. No further differentiation in terms of liquidity is therefore made in the measurement yield curve. The yield curve is determined for each currency using a bottom-up approach. In a two-step process, the risk-free and liquid basic yield curve is determined and then adjusted for an illiquidity premium.

The risk-free, liquid basic yield curve is determined using the risk-free, liquid swap rates based on 6M Euribor, which are derived from observable market prices and which are extrapolated for maturities for which no observable market prices can be determined. The Nelson Siegel method is used for the extrapolation. If no suitable discount rates are observable in the market, they have to be estimated in accordance with IFRS 17.B78. Market data that is fundamentally observable but cannot be obtained from liquid markets with sufficient transaction volumes is not regarded as reliable. In this case, judgment has to be exercised in order to assess the degree of similarity between the features of the insurance contracts to be measured and the observable market prices.

To reflect the liquidity characteristics of the insurance contracts, the risk-free, liquid basic yield curve is adjusted for an illiquidity premium. As the complete illiquidity of a cash flow is, by definition, not observable in the market, it is determined only approximately from observable market data. This process of determination results in a lower-end barrier for the complete illiquidity premium and thus in an abstract, risk-free, and completely illiquid yield curve pursuant to IFRS 17.B84. Higher illiquidity premiums cannot be established due to a lack of available data and are thus not estimated on the basis of reliable data. To determine the illiquidity premium from market data, the yield differential between German Pfandbriefe and German government securities with 1, 5, and 10-year maturities as at the reporting date are used, with interpolation between these maturities. Estimation uncertainties are also taken into account for longer yield differentials.

In inward reinsurance, there are transactions in foreign currencies for which yield curves for discounting are also provided in the following main currencies: US dollar, pound sterling, Japanese yen, and South African rand. The foreign currency curves are determined using a methodology that involves determining the difference between the risk-free interest rates and the risk-free euro yield curve and adjusting the euro IFRS 17 discount curve by the individual maturity-related interest-rate differentials.

Investment component

The investment component of a contract is determined by calculating the amount that has to be repaid to the policyholder in all scenarios that have commercial substance, irrespective of the occurrence of an insured event. Investment component payments are not recognized as part of insurance revenue or insurance service expenses.

In personal insurance, the investment component is calculated as the cash surrender value defined in the contract terms and conditions less any fees due. Policyholder participation in the form of the interest-bearing accumulated amount or unit-linked policyholder participation also constitutes an investment component.

In inward reinsurance, the amount of the guaranteed payment to the ceding insurer and thus the investment component is calculated as the minimum of the benefit and the contractual agreements if no claim is made. Owing to the nature of the reinsurance business, it is assumed that the guaranteed benefit if no claim is made is smaller than the benefits in a loss event. As the contractual terms and conditions are clearly defined, the amount of the investment component can be unequivocally determined when the contract is signed.

Contractual service margin

At initial measurement, the CSM of a GIC essentially represents the unearned profit that will be recognized as the entity provides services under the insurance contracts in the group.

In the case of insurance contracts without direct participation features, the CSM is calculated at each reporting date from the carrying amount at the end of the preceding reporting period, adjusted by the following:

- The CSM for all new contracts added to the GIC over the course of the year
- The interest accreted on the carrying amount of the CSM during the reporting period
- The changes to the fulfillment cash flows relating to future services
- The effect of any currency exchange differences on the CSM
- The amount recognized as insurance revenue on the basis of the services performed during the year

In the case of insurance contracts with direct participation features, the CSM is calculated at each reporting date from the carrying amount at the end of the preceding reporting period, adjusted by the following:

- The CSM for all new contracts added to the GIC over the course of the year
- The change in the amount of the entity's share of the fair value of the underlying items
- The changes to the fulfillment cash flows relating to future services
- The effect of any currency exchange differences on the CSM
- The amount recognized as insurance revenue on the basis of the services performed during the year

In each period, a share of the CSM of a GIC is recognized in profit or loss in order to reflect the services provided on the basis of the number of coverage units provided in the year. At each reporting date, the coverage units are reviewed and updated for each contract, taking account of the scope of the services provided and the expected coverage period.

The projected risk result, which can be applied consistently across all life insurance product types, is used as a measure of the benefits provided by insurance coverage in life insurance. In health insurance, the total value – calculated for each rate scale – of the profile of benefit drawdown normalized to a single age is used. Both the projected risk result and the rate-scale-specific benefit drawdown constitute an adequate approximation for the rate-scale-specific insurance benefit payment. For investment-related services, the amounts invested in the capital markets are used. The projected benefit reserve under HGB is an equivalent value derived from the setting of insurance rates and HGB accounting principles.

In the case of biometric products, the relative weighting between the benefits provided by insurance coverage and the investment-related service is significantly different from that for savings-focused products. This difference reflects the character of the service being provided. Biometric protection predominates in the case of biometric products. By contrast, the investment-related service is a more important aspect in the case of savings-focused products, although biometric protection is not to be regarded as immaterial.

In the personal insurance business, policyholders of insurance contracts with direct participation features share in both the risk result and the gains and losses on investments. This participation can be structured as a variable fee paid to the entity for the services to be provided. The insurance coverage protection is weighted using the projected risk result, with the weighting determined in line with MindZV. The weighting of the investment-based service is based on the range determined for shareholders' historical share of gains and losses on investments held by insurance companies from the projected HGB benefit reserve. Finally, the weighting factors are used to determine the ratio of the fees for the benefits provided by insurance coverage to the investment-related service.

In inward reinsurance, the settlement pattern for premiums earned is used to measure the coverage units and amortize the CSM. Due to the contract-specific, complex structure of reinsurance products, there is not a more objective method of quantifying the insurance benefit payment that could be used to compare and contrast the individual contracts. Using premiums earned rather than premiums written ensures that amounts are accrued and recognized accordingly.

Liability for incurred claims

In non-life insurance, the liability for incurred claims in respect of a GIC is recognized in the amount of the fulfillment cash flows related to claims incurred. The future cash flows are discounted at current discount rates.

To calculate the liability for incurred claims, the following 3 components must be measured:

Claims provision

Claims provisions are provisions for known claims and claims incurred but not reported. The final amount of the claims and the timing of payment are not known. Claims provisions contain compensation payments, annuities that have not been accepted, external claim settlement costs, internal claim settlement costs, recourse, excess proceeds, and loss sharing agreements.

Claims provisions are mainly calculated using the chain ladder method or other actuarial loss reserving technique. The chain ladder method is an actuarial method of calculating claims provisions on the basis of claim payments and claims expenses. This multiplicative reserving technique is the market standard in non-life insurance. It is based on the assumption that historical claim settlement patterns are indicative of future claim settlement patterns. It is also assumed that the individual years in which claims are incurred are independent of each other. Settlement for a particular year is based on a settlement pattern that is identical for all years. This settlement pattern is then used to estimate the expected future cash flows.

The very short period for the settlement of claims in the personal insurance business means that the claims provision in this business is calculated in the amount of the nominal values of the expected payments for claims incurred. In the life insurance business, benefits paid due to occupational incapacity or total unfitness for work are part of the liability for remaining coverage.

For calculation of the claims provision in inward reinsurance, please refer to the section on the liability for remaining coverage and the information on the difference between the liability for remaining coverage and the liability for incurred claims.

Provision for accepted annuities

Provisions for accepted annuities cover obligations from claims that previously had to be recognized in the claims provisions and were annuitized. Annuities can arise in the liability insurance, casualty insurance, and motor vehicle liability insurance businesses. These annuities are measured in the same way as in the life insurance business.

Risk adjustment

A confidence level technique is used to determine the risk adjustment. A confidence level of 75 percent has been set for the Group. The necessary distribution assumptions are determined on the basis of stochastic simulations and using market-standard distributions, particularly log-normal distribution. The parameters used include the expected values and the forecasting errors in the recognition of claims provisions.

Recognition of onerous business on the balance sheet

If, for contracts not measured using the premium allocation approach, the increase in the fulfilment cash flows resulting from changes in estimates relating to remaining coverage exceeds the amount of the CSM, a loss is recognized in profit or loss in the amount of this difference. The loss component is recognized as part of the liability for remaining coverage and reduced to zero on a systematic basis over the coverage period. If, for contracts measured using the premium allocation approach, facts and circumstances indicate at any time during the coverage period that a GIC is onerous, the loss is recognized in profit or loss. The liability for remaining coverage is increased by the amount by which the current estimates of the fulfillment cash flows relating to remaining coverage exceed the carrying amount of the liability for remaining coverage. This difference is also reduced to zero on a systematic basis over the coverage period.

The change in the liability for remaining coverage due to onerous contracts also results in a pro rata change in the loss recovery component from reinsurance contracts held.

Option of recognition in other comprehensive income

The accounting policy choice to disaggregate and recognize the total insurance finance income or expenses in profit or loss and in other comprehensive income is exercised (‘option of recognition in other comprehensive income’). Exercising this option pursuant to IFRS 17.89(b) for insurance contracts with direct participation features, the amount recognized in other comprehensive income at the transition date is equal to the cumulative amount of the underlying items recognized in other comprehensive income. On subsequent measurement, insurance finance income or expenses is disaggregated in such a way that this amount combined with the income and expenses recognized in profit or loss for the underlying items gives a balance of nil for the items presented separately in profit or loss. Exercising the option of recognition in other comprehensive income in accordance with IFRS 17.88(b) for insurance contracts without direct participation features, the amount recognized in other comprehensive income in accordance with IFRS 17.C19(b)(i) is calculated on the basis of the discount rates determined at initial recognition of a GIC. On subsequent measurement, insurance finance income or expenses is disaggregated in such a way that the cumulative amount recognized in other comprehensive income always corresponds to the difference between the carrying amount of the GIC applying the yield curve valid as at the reporting date and the carrying amount of the GIC applying the yield curve valid at the time of initial recognition of the GIC (locked-in yield curve). The locked-in yield curve to be used for the claims provision for insurance contracts under the premium allocation approach is determined on the basis of when the claim is incurred.

» 12 Leases

DZ BANK Group as lessor

A lease is classified as a finance lease if substantially all the risks and rewards incidental to the ownership of an asset are transferred to the lessee. If the risks and rewards remain substantially with the lessor, the lease is an operating lease.

If a lease is classified as a finance lease, a receivable due from the lessee must be recognized. The receivable is measured at an amount equal to the net investment in the lease at the inception of the lease. Lease payments are apportioned into a payment of interest and repayment of principal. The interest portion based on the lessor’s internal discount rate for a constant periodic rate of return is recognized as interest income, whereas the repayment of principal reduces the carrying amount of the receivable.

If a lease is classified as an operating lease, the entities in the DZ BANK Group retain beneficial ownership of the leased asset. These leased assets are reported as assets. The leased assets are measured at cost less depreciation and any impairment losses. Unless another systematic basis is more representative of the pattern of income over time, the lease payments received are recognized in profit or loss on a straight-line basis over the term of the lease and reported under other net operating income.

DZ BANK Group as lessee

For every lease, the lessee recognizes a right-of-use asset for a leased asset as well as a corresponding lease liability. The only exceptions are short-term leases (term of less than one year from the commencement date) and leases for low-value assets (cost of new purchase of up to €5,000 net); in these cases, the lease payments are recognized as an expense.

The amount of the right-of-use asset initially corresponds to the amount of the lease liability. In subsequent periods, the right-of-use asset is measured at amortized cost. Depreciation is recognized on a straight-line basis over the entire lease term and reported as an administrative expense.

The lease liability is measured as the present value of the future lease payments and is shown under other liabilities. Lease payments must be broken down into an interest portion and a repayment portion. The interest portion based on the internal discount rate or the incremental borrowing rate of interest is recognized as interest expense, whereas the repayment of principal reduces the liability.

The DZ BANK Group uses the practical expedient that enables a lessee to elect not to separate non-lease components from lease components and instead account for all components as a lease.

» 13 Income

Interest and dividends received

Interest is recognized in the relevant period. If the effective interest method is used to calculate interest income, such income is reported under interest income calculated using the effective interest method.

The cash flows used to calculate the effective interest rate take into account contractual agreements in connection with the financial assets and financial liabilities concerned.

Premiums and discounts are allocated over the expected life of financial instruments using the effective interest method. Any additional costs incurred that are directly connected with the acquisition or sale of a financial asset or financial liability, and thus can be directly assigned to the transaction, are factored into the calculation of the effective interest rate. Such costs include sales charges directly associated with the origination of home savings contracts and commitment fees for loans.

Dividends are recognized as soon as a legal entitlement to the payment of such a dividend is established.

Interest income and interest expense arising in connection with derivatives that were not entered into for trading purposes are reported under net interest income. Interest income and interest expense arising in connection with derivatives that were entered into for trading purposes are reported under gains and losses on trading activities.

Recognition of fair value gains and losses when exercising the fair value option

If, to avoid accounting mismatches, hedged items are allocated to the category 'financial assets designated as at fair value through profit or loss' (FVO hedged items), the effects of changes in market prices are reported under other gains and losses on financial instruments unless the effects of changes in market prices relate to derivatives whose gains and losses are reported under gains and losses on trading activities. In this case, the effects of changes in the market prices of the affected financial instruments are reported under gains and losses on trading activities. Credit rating effects arising from FVO hedged items are generally reported under other gains and losses on valuation of financial instruments.

As a rule, fair value gains and losses on derivatives that are classified as FVO hedged items and not reported under gains and losses on trading activities are recognized as an element of other gains and losses on valuation of financial instruments under gains and losses on financial instruments designated as at fair value through profit or loss. Otherwise, the fair value gains and losses on derivatives that are classified as FVO hedged items are recognized under gains and losses on trading activities.

Revenue from contracts with customers

Revenue from contracts with customers is recognized when the underlying services have been performed, it is probable that the economic benefits will flow to the group, and the amount of the revenue can be reliably measured.

In the DZ BANK Group, revenue from contracts with customers primarily consists of fee and commission income. Revenue from contracts with customers is also included in gains and losses on investments held by insurance companies and other insurance company gains and losses as well as in other net operating income.

The main components of fee and commission income are fee and commission income from securities business, fee and commission income from payments processing (including card processing), fee and commission income from lending and trust activities, and fee and commission income from asset management.

Fee and commission income from securities business is generated from funds business and brokerage, and also includes custody charges. The income is generally recognized as soon as the service has been performed. Fee and commission income from payments processing (including card processing) and fee and commission income from lending and trust activities is recognized immediately after the service has been provided.

Fees and commissions earned over the period in which a service is performed include certain types of fees for administration and safe custody as part of the securities business and asset management, and fees in connection with the furnishing of financial guarantees. In the case of performance-related management fees, income is recognized when the contractually agreed performance criteria have been satisfied. This is either when the service is contracted (brokering of life insurance or fund contracts, or brokering of home savings loans) or when the service is performed (fee and commission income from building society operations).

Fees and charges that form an integral part of the effective interest rate do not fall within the scope of IFRS 15 and are accounted for in accordance with IFRS 9 regardless of whether the financial assets are measured at fair value or at amortized cost.

The DZ BANK Group applies the following practical expedients as permitted by IFRS 15: it applies the standard to a portfolio of contracts, does not adjust the promised amount of consideration for the effects of a significant financing component, recognizes the incremental costs of obtaining a contract as an expense when incurred, and does not disclose certain information for some performance obligations.

Insurance business

The amounts recognized in the income statement and statement of comprehensive income are disaggregated into an insurance service result – comprising insurance revenue and insurance service expenses – and insurance finance income or expenses. Insurance revenue is the amount recognized to depict the provision of services relating to the GIC in an amount that reflects the consideration to which the entity expects to be entitled in exchange for these services. The insurance revenue and insurance service expenses recognized in profit or loss must not contain any investment components.

Insurance finance income or expenses generally comprises the changes in the carrying amount of the GIC arising from the effect of the time value of money, the effect of financial risk, and changes in these effects. The accounting policy choices of partial presentation in other comprehensive income pursuant to IFRS 17.88(b) and IFRS 17.89(b) are exercised consistently throughout the group.

» 14 Cash and cash equivalents

Cash and cash equivalents are cash on hand and balances with central banks.

Cash on hand comprises euros and foreign currencies. Cash in euros is measured at nominal value; foreign currency cash is translated at the buying rate. Balances with central banks are allocated to the 'financial assets measured at amortized cost' category. Interest income on cash and cash equivalents is recognized as interest income from lending and money market business.

» 15 Loans and advances to banks and customers

All receivables attributable to registered debtors (banks and customers) that are categorized as 'financial assets measured at amortized cost', 'financial assets measured at fair value through profit or loss', or 'financial assets measured at fair value through other comprehensive income' are recognized as loans and advances to banks and customers. To eliminate or significantly reduce accounting mismatches, certain loans and advances are designated as at fair value through profit or loss. In addition to fixed-term receivables and receivables payable on demand in connection with lending, lease, and money market business, loans and advances to banks and to customers include promissory notes and registered bonds.

Loans and advances to banks and customers are measured predominantly at amortized cost using the effective interest method. In fair value hedges, the carrying amounts of hedged receivables are adjusted for the change in fair value attributable to the hedged risk. The resulting hedge adjustments are recognized within other gains and losses on valuation of financial instruments under gains and losses arising on hedging transactions. Finance lease receivables are recognized and measured in accordance with the requirements for the accounting treatment of leases.

Loss allowances for loans and advances to banks and customers are determined on the basis of the IFRS 9 requirements applicable to the relevant category of financial assets. Depending on these requirements, the loss allowances are reported as a separate line item deduction on the assets side of the balance sheet or in the reserve from other comprehensive income. Finance lease receivables are also subject to the IFRS 9 impairment requirements.

Interest income on loans and advances to banks and customers is recognized as interest income from lending and money market business. This also includes the amortization of hedge adjustments to carrying amounts due to fair value hedges. Realized gains and losses on loans and advances to banks and customers that are categorized as financial assets measured at amortized cost are included in the gains and losses from the derecognition of financial assets measured at amortized cost.

» 16 Hedging instruments (positive and negative fair values)

The carrying amounts of financial instruments designated as hedging instruments in effective and documented hedging relationships are reported under either hedging instruments (positive fair values) or hedging instruments (negative fair values).

These financial instruments are measured at fair value. Changes in the fair value of hedging instruments in the categories 'financial assets measured at fair value through profit or loss' and 'financial liabilities measured at fair value through profit or loss' used in fair value hedges are recognized in the income statement as an element of other gains and losses on valuation of financial instruments under gains and losses from hedge accounting. If the hedged item is an equity instrument in which changes in fair value are recognized in other comprehensive income, the changes in the fair value of the hedging instruments are also recognized in other comprehensive income.

In the case of financial instruments used for cash flow hedges or hedges of net investments in foreign operations, changes in fair value attributable to the effective portion of the hedges are recognized in other comprehensive income. The cumulative amounts are recognized in the reserve from other comprehensive income as part of equity. Changes in fair value attributable to the ineffective portion of hedges are included in other gains and losses on valuation of financial instruments under gains and losses from hedge accounting.

» 17 Financial assets and financial liabilities held for trading

Financial assets and financial liabilities held for trading comprise financial assets and financial liabilities that are held for trading purposes.

Derivatives with positive fair values are classified as financial assets held for trading if they were entered into for trading purposes or, despite being intended to be used as hedges, do not meet the requirements for an accounting treatment as hedging instruments. Financial assets held for trading also include bonds and other fixed-income securities, shares and other variable-yield securities, and receivables held for trading purposes.

Financial liabilities held for trading include short positions, bonds and other debt certificates issued, and liabilities held for trading purposes. The procedure for classifying derivatives with negative fair values as financial liabilities held for trading is the same as that used for financial assets held for trading.

Financial instruments reported as financial assets or financial liabilities held for trading are always measured at fair value through profit or loss. Gains and losses on valuation, interest income and expense, and dividends arising from financial assets and financial liabilities held for trading are recognized under gains and losses on trading activities, provided that there is an actual intent to trade the instruments concerned.

» 18 Investments

The following are recognized as investments: bearer bonds and other fixed-income securities, shares and other variable-yield securities, investment fund units, and other bearer or registered shareholdings in entities in which the DZ BANK Group has no significant influence, provided that these securities or shares are not held for trading purposes. Investments also include investments in non-material subsidiaries and investments in joint ventures and associates.

Investments are initially recognized at fair value. Investments in joint ventures and associates that are accounted for using the equity method are initially recognized at cost. These investments are subsequently measured in accordance with the principles applicable to the relevant measurement category. In the case of investments in joint ventures and associates, the equity method is used for subsequent measurement.

Impairment losses on investments are determined on the basis of the IFRS 9 requirements applicable to the relevant category of financial assets or on the basis of accounting standards relevant to the financial assets concerned. They are generally reported as a separate line item on the assets side of the balance sheet or in the reserve from other comprehensive income.

Interest and any investment premiums or discounts amortized over the maturity of the investment using the effective interest method are recognized under net interest income. Dividends derived from equity instruments are recognized as current income under net interest income. Current income and expense arising from use of the equity method is also reported under net interest income.

Gains and losses realized on the sale of investments that are not categorized as financial assets measured at amortized cost, as well as impairment losses and reversals thereof on investments in associates and joint ventures that are accounted for using the equity method, are reported under gains and losses on investments. Realized gains and losses on investments that are categorized as financial assets measured at amortized cost are included in the gains and losses from the derecognition of financial assets measured at amortized cost.

Fair value gains and losses on investments that are mandatorily measured at fair value through profit or loss are reported under other gains and losses on valuation of financial instruments.

» 19 Property, plant and equipment, investment property, and right-of-use assets

Property, plant and equipment, investment property, and right-of-use assets comprises land and buildings as well as office furniture and equipment with an estimated useful life of more than one year used by the entities in the DZ BANK Group. This item also includes assets subject to operating leases and right-of-use assets arising from leases. Investment property is real estate held for the purposes of generating rental income or capital appreciation.

Property, plant and equipment, and investment property is measured at cost and subsequently at cost less cumulative depreciation and cumulative impairment losses. Depreciation is largely recognized on a straight-line basis over the useful life of the asset. As a rule, external valuations are used to measure recoverability.

Right-of-use assets arising from leases are measured in accordance with the lease accounting provisions and subsequently reduced by cumulative depreciation and cumulative impairment losses. Depreciation is largely recognized on a straight-line basis over the useful life of the asset.

If facts or circumstances give rise to indications that property, plant and equipment, investment property, or right-of-use assets might be impaired, the recoverable amount is determined. An impairment loss is recognized if the recoverable amount is lower than the asset’s carrying amount. The recoverable amount is the higher of fair value less costs to sell and value in use.

Borrowing costs directly assignable to property, plant and equipment, and investment property are capitalized as part of the asset cost, provided that the asset concerned is a qualifying asset.

Depreciation on property, plant and equipment, investment property, and right-of-use assets is reported as an administrative expense. Impairment losses and reversals of impairment losses are reported under other net operating income.

» 20 Income tax assets and liabilities

Current and deferred tax assets are shown under the income tax assets balance sheet item; current and deferred tax liabilities are reported under income tax liabilities. Current income tax assets and liabilities are recognized in the amount of any expected refund or future payment.

Deferred tax assets and liabilities are recognized for temporary differences between the IFRS carrying amounts of the assets or liabilities and their carrying amounts for tax purposes. Deferred tax assets are also recognized in respect of as yet unused tax loss carryforwards, provided that utilization of these loss carryforwards is sufficiently probable. Deferred tax assets are measured using the national and entity-specific tax rates expected to apply at the time of recovery. A uniform tax rate is applied in the case of group companies forming a tax group with DZ BANK.

Deferred tax assets and liabilities are not discounted. Where temporary differences arise in relation to items recognized in other comprehensive income, the resulting deferred tax assets and liabilities are also recognized in other comprehensive income. Current and deferred tax income and expense to be recognized through profit or loss are reported under income taxes in the income statement.

In accordance with the exception set out in IAS 12.88A, deferred tax assets and liabilities related to the global minimum tax requirements are not recognized, nor is any information about them disclosed.

In certain jurisdictions where entities in the DZ BANK Group operate, legislation has been enacted or substantively enacted to introduce global minimum tax (Global Anti-Base Erosion Rules Pillar Two). The DZ BANK Group is in the scope of the enacted or substantively enacted legal provisions and has analyzed how it could be affected. The assessment of the potential risk arising from global minimum tax is based on the tax returns and annual financial statements of the entities to be included and on the tax-related country-by-country reporting (CbCR) for previous years. Based on this assessment, the effective tax rates in most of the countries in which the group operates are above 15 percent for the purposes of global minimum tax, so the group assumes that the temporary simplification rules (CbCR safe harbor rules) can be applied. However, there are a limited number of countries where the temporary safe harbor exemptions are expected not to apply. In these countries, the income tax risk from global minimum tax is expected to be immaterial because the revenue in the affected countries recognized in the CbCR for previous years stands at significantly less than 1 percent of the total revenue pursuant to the CbCR.

» 21 Other assets and other liabilities

The other assets and other liabilities line items are used to report assets and liabilities that cannot be allocated to any of the other asset or liability line items.

Other assets held by insurance companies, intangible assets, and contract assets are reported under other assets. Intangible assets are recognized at cost. In the subsequent measurement of software, acquired customer relationships, and other intangible assets with a finite useful life, carrying amounts are reduced by cumulative amortization and cumulative impairment losses. Goodwill and other intangible assets with an indefinite useful life are not amortized but are subject to an impairment test at least once during the financial year.

If the group has satisfied its performance obligation in respect of a customer, but the customer has not yet paid the consideration and payment of the consideration still depends on a condition other than simply a due date, then the group recognizes a contract asset on the balance sheet in place of a receivable. As soon as an unconditional right to the consideration arises, the contract asset is reclassified as a receivable. Contract assets are not amortized, but are included in the calculation of the loss allowances in accordance with IFRS 9.

Other liabilities include other liabilities of insurance companies, accrued expenses, and lease liabilities.

» 22 Loss allowances

Loss allowances for cash and cash equivalents, loans and advances to banks and customers, investments, and other assets that are measured at amortized cost or designated as finance leases are reported as a separate line item on the assets side of the balance sheet. Additions to loss allowances for these balance sheet items, and any reversals of such allowances, are recognized under loss allowances in the income statement.

Loss allowances for investments held by insurance companies and other assets held by insurance companies measured at amortized cost are netted with the carrying amounts of these assets within the investments held by insurance companies and other assets held by insurance companies line items on the balance sheet. Additions to loss allowances for these balance sheet items, and any reversals of such allowances, are recognized under gains and losses on investments held by insurance companies and other insurance company gains and losses in the income statement.

Loss allowances for loans and advances to banks and customers, for investments, and for investments held by insurance companies that are measured at fair value through other comprehensive income are not reported on the assets side of the balance sheet but instead in the reserve from other comprehensive income. Additions to loss allowances for these balance sheet items are recognized under loss allowances in the income statement; any reversals of such allowances are recognized under gains and losses on investments held by insurance companies and other insurance company gains and losses in the income statement.

Any additions to, or reversals of, provisions for loan commitments and financial guarantee contracts and other provisions for loans and advances are also recognized in profit or loss under loss allowances.

» 23 Non-current assets and disposal groups classified as held for sale

The carrying amount of non-current assets or disposal groups for which a sale is planned is recovered principally through a sale transaction rather than through their continuing use. These assets and disposal groups therefore need to be classified as held for sale if the criteria set out below are satisfied.

To be classified as held for sale, the assets or disposal groups must be available for immediate sale in their present condition subject only to terms that are usual and customary for sales of such assets or disposal groups, and it must be highly probable that a sale will take place. A sale is deemed to be highly probable if there is a commitment to a plan to sell the asset or disposal group and an active program to locate a buyer and complete the plan has been initiated. In addition, the asset or disposal group must be actively marketed for sale at a price that is reasonable in relation to the current fair value. A sale must be expected to be completed within one year of the date on which the asset or disposal group is classified as held for sale.

Assets classified as held for sale are measured at the lower of carrying amount and fair value less costs to sell. The assets are no longer depreciated from the date on which they are classified as held for sale.

Assets and disposal groups classified as held for sale are shown separately on the balance sheet under non-current assets and disposal groups classified as held for sale and liabilities included in disposal groups classified as held for sale. Gains and losses arising on measurement as well as gains and losses on the sale of these assets or disposal groups that do not belong to a discontinued operation are recognized in the income statement under other net operating income. If the assets or disposal groups belong to discontinued operations, all gains and losses arising from these assets and disposal groups must be shown separately as ‘profit/loss from discontinued operations, net of tax’.

» 24 Deposits from banks and customers

All liabilities attributable to registered creditors (banks and customers) not classified as ‘financial liabilities mandatorily measured at fair value through profit or loss’ are recognized as deposits from banks and customers.

In addition to fixed-maturity liabilities and liabilities repayable on demand arising from the deposit, home savings and loan, and money market businesses, these liabilities also include, in particular, registered bonds and promissory notes issued.

Deposits from banks and customers are measured at amortized cost using the effective interest method. Where deposits from banks and customers are designated as a hedged item in an effective fair value hedge, the carrying amount is adjusted for any change in the fair value attributable to the hedged risk. If, to eliminate or significantly reduce accounting mismatches, the fair value option is applied for deposits from banks and customers, the liabilities are measured at fair value as at the balance sheet date.

Interest expense on deposits from banks and customers is recognized separately under net interest income. Interest expense also includes gains and losses on early redemptions and the amortization of hedge adjustments to carrying amounts due to fair value hedges. Hedge adjustments to the carrying amount due to fair value hedges are reported within other gains and losses on valuation of financial instruments under gains and losses from hedge accounting.

» 25 Debt certificates issued including bonds

Debt certificates issued including bonds cover ‘Pfandbriefe’, other bonds, and commercial paper for which transferable bearer certificates have been issued.

Debt certificates issued including bonds are measured in the same way as deposits from banks and customers.

» 26 Provisions

Provisions for employee benefits

Pension plans agreed with the employees of the entities in the DZ BANK Group are based on various types of pension schemes that depend on the legal, economic, and tax situation in each country and include both defined contribution plans and defined benefit plans.

Where a commitment is made to defined contribution plans, fixed contributions are paid to external pension providers. The amount of the contributions and the income earned from the pension assets determine the amount of future pension benefits. The risks arising from the obligation to pay such benefits in the future lie with the pension provider. No provisions are recognized for these defined contribution pension commitments.

The contributions paid are recognized as pension and other post-employment benefit expenses under administrative expenses.

Under a defined benefit plan, the employer promises a specific benefit and bears all the risks arising from this promise. Defined benefit obligations are measured on the basis of the projected unit credit method. The measurement depends on various actuarial assumptions. These include, in particular, assumptions about long-term salary and annuity trends and average life expectancy. Assumptions about the salary trend are based on past trends and take into account expectations regarding future changes in the labor market. Assumptions about the annuity trend are based on expected changes in the inflation rate. The 2018 G mortality tables published by Professor Dr. Klaus Heubeck are used to estimate average life expectancy in Germany; outside Germany, the relevant country-specific mortality tables are used. The discount rate used to discount future payment obligations is an appropriate market interest rate for investment-grade fixed-income corporate bonds with a maturity equivalent to that of the defined benefit obligations. The discount rate depends on the obligation structure (duration) and is determined using a portfolio of high-quality corporate bonds that must satisfy certain quality criteria. One of the notable quality criteria is a credit rating of AA from at least one of the two rating agencies with the greatest coverage in the currency area in question. For the eurozone, these are Moody's Investors Service and Standard & Poor's, both New York. Bonds with existing call options in the form of embedded derivatives are not included in this process.

Actuarial gains and losses arising from experience adjustments and changes in actuarial assumptions regarding the defined benefit obligations, together with gains and losses arising from the remeasurement of plan assets and reimbursement rights, are recognized in other comprehensive income in the reporting period in which they occur.

In addition to the provisions for defined benefit pension plans, the provisions for employee benefits include provisions for other long-term employee benefits, provisions for termination benefits, and provisions for short-term employee benefits.

Provisions for other long-term employee benefits are recognized, in particular, to cover semi-retirement (Altersteilzeit) and long-service bonuses. Provisions for early retirement are included under the provisions for termination benefits.

Provisions for termination benefits linked with restructuring are reported separately from other restructuring provisions.

Provisions for employee benefits are generally recognized as a charge to administrative expenses, although reversals of such provisions are reported under other net operating income. As an exception to the rule, the expense for the recognition of provisions for restructuring is included in other net operating income.

Provisions for share-based payment transactions

The entities in the DZ BANK Group have entered into various agreements covering variable remuneration components to be paid to members of the Board of Managing Directors and certain other salaried employees. The amount and timing of such remuneration depends on a number of factors, not least the performance of the entity concerned. These agreements are classified as cash-settled share-based payment transactions.

Provisions for share-based payment transactions are recognized (at fair value) if it is sufficiently probable that the remuneration will be paid out in the future. Where payment transactions are linked to targets relating to a multi-year, retrospective performance period, the provision is recognized on the basis of the underlying performance period. The timing of initial recognition is therefore before the grant date and before any payout in subsequent years. This results in discrepancies compared with the nominal amounts disclosed in note 110 for share-based payments granted but not yet paid out.

Provisions for share-based payment transactions are also subsequently measured at fair value. Any changes in fair value are recognized in profit or loss under administrative expenses.

Other provisions

Provisions are liabilities in which the amounts or due dates are uncertain. Provisions are recognized for present obligations arising out of past events, in which it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and the amount of the obligation can be reliably estimated.

The provisions are recognized and measured using the best estimate of the present value of their anticipated utilization. This estimate takes account of future events as well as the risks and uncertainties relating to the issue concerned. The underlying assumptions and estimates used include figures based on past experience as well as expectations and forecasts relating to future trends and developments.

Provisions for irrevocable loan commitments and provisions for financial guarantee contracts are recognized with the same model used for financial assets and in the amount of the expected credit losses.

Other provisions for loans and advances factor in the usual sector-specific level of uncertainty.

Subject to various criteria being met, the building society's terms and conditions provide for bonuses for home savings customers in the form of a reimbursement of some of the sales charge or in the form of interest bonuses on deposits. The bonuses constitute independent payment obligations and are measured and recognized in accordance with IAS 37. In line with the building society's terms and conditions, the granting of bonuses to home savings customers is tied to various conditions, such as the selection of the interest bonus option by the home savings customer, adherence to a lock-up period that, after the option has been selected, starts on the valuation date on which the target valuation and a certain minimum volume of home savings deposits are reached, the achievement of a minimum term for the home savings contract, or a decision not to draw down the allocated home savings loan. In order to measure provisions relating to building society operations, building society simulations (collective simulations) that forecast home savings customers' future behavior are used to evaluate these options. The parameters for collective simulation, including the probabilities of the options being exercised by home savings customers, are set using the exercise rate determined by observing customer behavior in the past. The collective simulations form the basis for cash flow projections that are used to measure the provisions relating to building society operations. These cash flow projections are carried out at portfolio level for a projection period of 15 years. For validation purposes, an additional process is used and the results are compared against those obtained using the measurement method. Uncertainty in connection with the measurement of the provisions may arise depending on the extent to which the assumptions about future customer behavior – taking account of various interest-rate scenarios and management assessments – that were forecast using collective simulation actually materialize in the future. Unconditional bonuses in the form of additional interest credit are recognized as part of the amortized cost of the home savings deposits in accordance with IFRS 9.5.3.1 in conjunction with IFRS 9.4.2.1.

Provisions that cover the possible resulting losses are recognized for risks arising from ongoing legal disputes and for pre-litigation risks, including in relation to tax matters. Such provisions are recognized when the reasons indicating that a legal dispute will result in a payment obligation for an entity in the DZ BANK Group are stronger than those indicating the opposite. Any concentration risk owing to similarities between individual cases is taken into consideration.

The amount in which provisions are recognized for risks arising from ongoing legal disputes is based on the information available at the time and is subject to assumptions and discretion in how a dispute is assessed. For example, this may be because the entity in the DZ BANK Group does not yet have at its disposal all the information required to make a final assessment of the legal dispute, particularly during the early stages of proceedings. Moreover, predictions made by entities in the DZ BANK Group in relation to changes to legal circumstances, changes to official interpretations, or – in the case of court cases – to procedural orders, decisions by the courts, or the arguments expected to be put forward by the opponent in the case may later turn out to be unfounded.

The expense incurred by the unwinding of the discount on provisions is recognized as interest expense under net interest income.

» 27 Subordinated capital

Subordinated capital comprises all registered or bearer debt instruments that, in the event of insolvency or liquidation, are repaid only after settlement of all unsubordinated liabilities but before distribution to shareholders of any proceeds from the insolvency or liquidation.

Subordinated liabilities largely comprise subordinated bearer bonds and promissory notes. Profit-sharing rights outstanding comprise registered and bearer profit-participation certificates in issue. Regulatory Tier 1 capital that does not meet IFRS equity criteria is recognized as other hybrid capital. Non-controlling interests in partnerships controlled by entities in the DZ BANK Group that must be classified as subordinated are recognized as share capital repayable on demand.

Subordinated capital is measured in the same way as deposits from banks and customers.

» 28 Contingent liabilities

Contingent liabilities are possible obligations arising from past events. The existence of these obligations will only be confirmed by future events outside the control of the entities in the DZ BANK Group. Present obligations arising out of past events but not recognized as provisions because of the improbability of an outflow of resources embodying economic benefits or because the amount cannot be measured with sufficient reliability also constitute contingent liabilities.

The amount of contingent liabilities is disclosed in the notes unless the probability of an outflow of resources embodying economic benefits is remote. Contingent liabilities are measured at the best estimate of possible future outflows of resources embodying economic benefits.

Contingent liabilities in respect of litigation risk are reported when the reasons indicating that there is no current obligation are stronger than those indicating the opposite, but there is still a likelihood that a legal dispute will result in a payment obligation for an entity in the DZ BANK Group. Risks arising from legal disputes are assessed according to how likely they are to occur.

B Disclosure of interests in other entities

» 29 Investments in subsidiaries

Proportion of the DZ BANK Group's activities and cash flow attributable to non-controlling interests

In the DZ BANK Group, material non-controlling interests in the capital and profit exist in the following subsidiaries:

€ million	Dec. 31, 2023	Dec. 31, 2022
Bausparkasse Schwäbisch Hall subgroup	191	169
DZ PRIVATBANK	77	71
R+V Versicherung subgroup	1,423	1,312
Union Asset Management Holding subgroup	110	97
Other	162	157
Total	**1,963**	**1,806**

Bausparkasse Schwäbisch Hall

Bausparkasse Schwäbisch Hall AG – Bausparkasse der Volksbanken und Raiffeisenbanken, Schwäbisch Hall, (BSH) is the parent company of the BSH subgroup. BSH is headquartered in Schwäbisch Hall. DZ BANK directly holds 97.59 percent of the shares in BSH (December 31, 2022: 97.58 percent). The share of voting rights is equal to the shareholding. Non-controlling interests account for 2.41 percent of the voting rights and shares (December 31, 2022: 2.42 percent). As was the case a year earlier, most of these non-controlling interests are held by local cooperative banks.

The net income for the year attributable to the non-controlling interests was €13 million (2022: €9 million). Nearly all of this amount was accounted for by the net income for the year attributable to non-controlling interests in the BSH subgroup of €13 million (2022: €6 million). The carrying amount of the non-controlling interests in the DZ BANK Group was €191 million (December 31, 2022: €169 million). Of this amount, €98 million was attributable to non-controlling interests within the BSH subgroup (December 31, 2022: €82 million). DZ BANK has entered into a profit-transfer agreement with BSH. This guarantees a cash settlement of €6.97 per non-par-value share (after corporation tax and ancillary taxes) for the outside shareholders of BSH until the end of the 2025 financial year. After the end of the 2025 financial year, the profit transfer agreement will be extended automatically by one year at a time until December 31, 2030 at the latest, unless the agreement is terminated by giving notice no later than 6 months before it is due to end. Guaranteed dividends of €1 million were paid to outside shareholders of BSH in 2023 (2022: €1 million).

Aggregated financial information for the BSH subgroup:

€ million	Dec. 31, 2023	Dec. 31, 2022
Assets	84,369	85,599
Liabilities	79,916	81,384

€ million	2023	2022
Interest income and fee and commission income	1,543	1,440
Net profit/loss	-36	75
Other comprehensive income/loss	277	-1,583
Total comprehensive income/loss	241	-1,507
Cash flow	-80	-918

DZ PRIVATBANK

DZ PRIVATBANK S.A., Strassen, Luxembourg, (DZ PRIVATBANK S.A.), headquartered in Luxembourg, together with its wholly owned subsidiaries DZ PRIVATBANK (Schweiz) AG, Zurich, Switzerland, (DZ PRIVATBANK Schweiz), IPConcept (Luxemburg) S.A., Strassen, Luxembourg, and IPConcept (Schweiz) AG, Zurich, Switzerland, is the cooperative center of excellence for the private banking business of the local cooperative banks in Germany.

DZ BANK directly holds 91.83 percent (December 31, 2022: 91.78 percent) of the shares in DZ PRIVATBANK S.A. The share of voting rights is equal to the shareholding. Non-controlling interests account for 8.17 percent (December 31, 2022: 8.22 percent) and are held by local cooperative banks and investment companies in the cooperative sector.

The net income for the year attributable to the non-controlling interests was €7 million (2022: €5 million). The carrying amount of the non-controlling interests was €77 million (December 31, 2022: €71 million). The dividend distributed to the non-controlling interests came to €1 million in 2023 (2022: €1 million).

Aggregated financial information for DZ PRIVATBANK:

€ million	Dec. 31, 2023	Dec. 31, 2022
Assets	26,190	25,447
Liabilities	24,969	24,273

€ million	2023	2022
Interest income and fee and commission income	1,386	718
Net profit	60	31
Other comprehensive income	11	11
Total comprehensive income	71	42
Cash flow	1,445	2,392

R+V Versicherung

The R+V Group is a subgroup of the DZ BANK Group that, with its individual companies, offers all types of insurance in all of the non-life, life, and health insurance sectors. It also takes on inward reinsurance business in the international market.

R+V Versicherung AG, Wiesbaden, (R+V) is the parent company of the R+V subgroup. R+V is headquartered in Wiesbaden. DZ BANK directly holds 92.31 percent of the shares in R+V (December 31, 2022: 92.28 percent). The share of voting rights is equal to the shareholding. Non-controlling interests account for 7.69 percent of the voting rights and shares (December 31, 2022: 7.72 percent). Within this figure, local cooperative banks hold 5.93 percent (December 31, 2022: 5.96 percent). The other 1.75 percent (December 31, 2022: 1.75 percent) is held by other entities in the cooperative sector.

The net income for the year attributable to the non-controlling interests was €40 million (2022: €15 million). This included the net loss for the year attributable to non-controlling interests in the R+V subgroup of €14 million (2022: net income of €10 million). The carrying amount of the non-controlling interests in the DZ BANK Group was €1,423 million (December 31, 2022: €1,312 million). Of this amount, €774 million was attributable to non-controlling interests within the R+V subgroup (December 31, 2022: €730 million). DZ BANK entered into a profit-transfer agreement with R+V in 2022. This guarantees an annual cash settlement of €7.32 per non-par-value share (after corporation tax and ancillary taxes) for the outside shareholders of R+V until the end of the 2026 financial year. After the end of the agreement, it can be extended by one year at a time until 2031. Guaranteed dividends of €8 million were paid to outside shareholders of R+V in 2023 (2022: €8 million). In the R+V subgroup, dividends of €9 million were paid to non-controlling interests (2022: €28 million).

Aggregated financial information for the R+V subgroup:

€ million	Dec. 31, 2023	Dec. 31, 2022
Assets	127,039	119,269
Liabilities	117,631	110,704

€ million	2023	2022
Insurance service result	1,972	1,980
Net profit/loss	573	-33
Other comprehensive income/loss	277	-1,483
Total comprehensive income/loss	850	-1,516

Union Asset Management Holding

Union Asset Management Holding AG, Frankfurt am Main, (UMH) is the parent company of the UMH subgroup. UMH is headquartered in Frankfurt am Main. Other major locations are Hamburg and Luxembourg. DZ BANK's aggregated shareholding in UMH is 96.59 percent (December 31, 2022: 96.59 percent). The share of voting rights is equal to the aggregated shareholding. Non-controlling interests account for 3.41 percent of the shares (December 31, 2022: 3.41 percent). Most of these non-controlling interests are held by local cooperative banks. The proportion held indirectly by DZ BANK is 95.82 percent (December 31, 2022: 95.82 percent).

The carrying amount of the non-controlling interests within the DZ BANK Group was €110 million (December 31, 2022: €97 million) and related to the multiplicative share of the capital of UMH. Of this amount, €31 million was attributable to non-controlling interests within the UMH subgroup (December 31, 2022: €33 million). The net income for the year attributable to the non-controlling interests was €29 million (2022: €23 million). This included the net income for the year attributable to non-controlling interests in the UMH subgroup of €6 million (2022: €8 million). The dividend distributed to the non-controlling interests totaled €13 million in 2023 (2022: €18 million). €7 million of this amount was paid as dividends to non-controlling interests in the UMH subgroup (2022: €9 million).

Aggregated financial information for the UMH subgroup:

€ million	Dec. 31, 2023	Dec. 31, 2022
Assets	5,156	4,818
Liabilities	2,115	2,171

€ million	2023	2022
Interest income and fee and commission income	3,487	3,506
Net profit	684	492
Other comprehensive income/loss	-32	33
Total comprehensive income	652	525

Nature and extent of significant restrictions

National regulatory requirements, contractual provisions, and provisions of company law restrict the DZ BANK Group’s ability to transfer assets within the group. Where these restrictions can be specifically assigned to individual line items on the balance sheet, the assets and liabilities subject to restrictions on the balance sheet date are shown in the following table:

€ million	Dec. 31, 2023	Dec. 31, 2022
Assets	**110,433**	**107,222**
Loans and advances to banks	431	523
Loans and advances to customers	4,974	3,297
Investments	731	1,614
Investments held by insurance companies	103,852	101,324
Other assets	445	464
Liabilities	**162,409**	**165,000**
Deposits from banks	962	1,962
Deposits from customers	63,708	66,318
Provisions	913	1,053
Insurance contract liabilities	96,825	95,667

» 30 Interests in joint arrangements and associates

Nature, extent, and financial effects of interests in joint arrangements

Prvá stavebná sporiteľňa

Prvá stavebná sporiteľňa a.s., Bratislava, Slovakia, (PSS) is a joint venture between BSH and its partners Raiffeisen Bausparkassen Holding GmbH, Vienna, Austria, Slovenská sporiteľňa a.s., Bratislava, Slovakia, and Erste Group Bank AG, Vienna, Austria. PSS is headquartered in Bratislava, Slovakia. BSH’s shareholding in PSS was 32.50 percent on the balance sheet date, as it had been at December 31, 2022. In the DZ BANK Group, the interests in PSS are accounted for using the equity method. PSS did not pay any dividend to BSH in 2023 (2022: no dividend).

Aggregated financial information for PSS:

€ million	Dec. 31, 2023	Dec. 31, 2022
Current assets	518	609
of which cash and cash equivalents	13	5
Non-current assets	2,608	2,378
Current liabilities	787	761
of which financial liabilities	771	746
Non-current liabilities	2,027	1,935
of which financial liabilities	1,999	1,909

€ million	2023	2022
Interest income	96	87
Interest expense	-35	-24
Fee and commission income	11	12
Fee and commission expenses	-1	-1
Administrative expenses	-41	-42
Income taxes	-4	-5
Profit from continuing operations, net of tax	21	7
Other comprehensive income	-	1
Total comprehensive income	21	7

Reconciliation from the aggregated financial information to the carrying amount of the interests in PSS:

€ million	Dec. 31, 2023	Dec. 31, 2022
Total net assets	**312**	**291**
Share of net assets	**101**	**95**
Cumulative impairment losses on the carrying amount of the investment	-35	-35
Carrying amount under the equity method	**67**	**60**

Zhong De Zuh Fang Chu Xu Yin Hang (Sino-German-Bausparkasse)

Zhong De Zuh Fang Chu Xu Yin Hang (Sino-German-Bausparkasse), Tianjin, China, (SGB) is a joint venture between BSH and China Construction Bank Corporation, Beijing, China. SGB is headquartered in Tianjin, China. BSH's shareholding in this Chinese building society was 24.90 percent on the balance sheet date, as it had been at December 31, 2022. In the DZ BANK Group, the interests in SGB are accounted for using the equity method. SGB did not pay a dividend in 2023, as had also been the case in the previous year.

Aggregated financial information for SGB:

€ million	Dec. 31, 2023	Dec. 31, 2022
Current assets	1,681	1,562
of which cash and cash equivalents	332	412
Non-current assets	3,111	3,107
Current liabilities	3,345	3,025
of which financial liabilities	3,129	2,815
Non-current liabilities	1,058	1,239
of which financial liabilities	1,058	1,239

€ million	2023	2022
Interest income	149	153
Interest expense	-85	-83
Fee and commission income	5	7
Fee and commission expenses	-12	-13
Administrative expenses	-40	-43
Income taxes	-2	-2
Profit from continuing operations, net of tax	10	10
Other comprehensive income/loss	-26	-10
Total comprehensive income/loss	-16	-

Reconciliation from the aggregated financial information to the carrying amount of the interests in SGB:

€ million	Dec. 31, 2023	Dec. 31, 2022
Total net assets	**388**	404
Share of net assets	**97**	101
Cumulative impairment losses on the carrying amount of the investment	-75	-75
Carrying amount under the equity method	**21**	25

Deutsche WertpapierService Bank

Deutsche WertpapierService Bank AG, Frankfurt am Main, (dwpbank) is a joint venture of DZ BANK with Westfälisch-Lippische Sparkassen- und Giroverband, Münster, Rheinischer Sparkassen- und Giroverband, Düsseldorf, and 3 other banks in Germany and is accounted for in the DZ BANK Group’s financial statements using the equity method. dwpbank is headquartered in Frankfurt am Main. Its capital is divided into 20,000,000 voting registered shares with transfer restrictions. DZ BANK holds a 50.00 percent stake in dwpbank, as it did at December 31, 2022. The equity method is applied to dwpbank on the basis of financial statements prepared in accordance with HGB because the difference compared with financial statements prepared in accordance with IFRS is not material.

The shares in dwpbank are not traded in an active market. dwpbank did not pay any dividend to DZ BANK in 2023 (2022: dividend of €6 million).

Aggregated financial information for dwpbank:

€ million	Dec. 31, 2023	Dec. 31, 2022
Assets	635	830
Liabilities	301	545
of which financial liabilities	91	338

dwpbank only has a small amount of cash and cash equivalents.

€ million	2023	2022
Interest income	7	4
Interest expense	-2	-4
Fee and commission income	403	421
Fee and commission expenses	-94	-101
Administrative expenses	-264	-265
Income taxes	-25	-
Profit from continuing operations, net of tax	49	8
Total comprehensive income	49	8

Reconciliation from the aggregated financial information to the carrying amount of the interests in dwpbank:

€ million	Dec. 31, 2023	Dec. 31, 2022
Total net assets	**334**	285
Share of net assets	**167**	143
Capitalization of goodwill	29	29
Carrying amount under the equity method	**197**	172

Other joint ventures

The carrying amount of the equity-accounted joint ventures that, individually, are not material totaled €27 million on the balance sheet date (December 31, 2022: €60 million).

Aggregated financial information for equity-accounted joint ventures that, individually, are not material:

€ million	2023	2022
Share of profit from continuing operations, net of tax	-	2
Share of total comprehensive income	-	2

Nature, extent, and financial effects of investments in associates

Other associates

The carrying amount of the equity-accounted associates that, individually, are not material totaled €139 million on the balance sheet date (December 31, 2022: €131 million).

Aggregated financial information for equity-accounted associates that, individually, are not material:

€ million	2023	2022
Share of profit/loss from continuing operations, net of tax	-1	6
Share of total comprehensive income/loss	-1	6

» 31 Interests in unconsolidated structured entities

Structured entities are entities that have been designed so that voting rights or similar rights are not the dominant factor in deciding who controls the entity. The DZ BANK Group distinguishes between the following types of interests in unconsolidated structured entities, based on their design and the related risks:

- Interests in investment funds issued by the DZ BANK Group
- Interests in investment funds not issued by the DZ BANK Group
- Interests in securitization vehicles

Interests in investment funds issued by the DZ BANK Group

The interests in the investment funds issued by the DZ BANK Group largely comprise investment funds issued by entities in the Union Investment Group in accordance with the contractual form model without voting rights and, to a lesser extent, those that are structured as a company with a separate legal personality. The number of unit/share types and volume of investment funds issued and managed by the UMH subgroup can be broken down as follows:

	Dec. 31, 2023		Dec. 31, 2022	
€ million	Volume	Number	Volume	Number
Mutual funds	240,449	337	213,006	332
of which guarantee funds	282	6	307	8
Special funds	152,181	517	140,438	524
Total	**392,630**	**854**	**353,444**	**856**

The maximum exposure of the investment funds issued and managed by the DZ BANK Group is shown in the following tables as a gross value, excluding deduction of available collateral:

AS AT DECEMBER 31, 2023

€ million	Mutual funds	of which guarantee funds	Special funds	**Total**
Assets	**2,786**	**-**	**154**	**2,940**
Loans and advances to customers	2	-	14	16
Investments	2,402	-	27	2,429
Investments held by insurance companies	30	-	98	128
Property, plant and equipment, investment property, and right-of-use assets	110	-	-	110
Other assets	194	-	14	208
Non-current assets and disposal groups classified as held for sale	48	-	-	48
Liabilities	**128**	**7**	**-**	**128**
Financial liabilities held for trading	7	7	-	7
Other liabilities	121	-	-	121
Net exposure recognized on the balance sheet	2,658	-7	154	2,812
Financial guarantee contracts, loan commitments and other obligations	**290**	**290**	**-**	**290**
Other obligations	290	290	-	290
Actual maximum exposure	**2,948**	**283**	**154**	**3,102**

AS AT DECEMBER 31, 2022

€ million	Mutual funds	of which guarantee funds	Special funds	**Total**
Assets	**1,780**	**-**	**645**	**2,426**
Loans and advances to customers	4	-	15	19
Investments	1,423	-	14	1,437
Investments held by insurance companies	27	-	601	629
Property, plant and equipment, investment property, and right-of-use assets	121	-	-	121
Other assets	186	-	15	201
Non-current assets and disposal groups classified as held for sale	19	-	-	19
Liabilities	**139**	**13**	**-**	**139**
Financial liabilities held for trading	13	13	-	13
Other liabilities	126	-	-	126
Net exposure recognized on the balance sheet	1,641	-13	645	2,286
Financial guarantee contracts, loan commitments and other obligations	**332**	**332**	**-**	**332**
Other obligations	332	332	-	332
Actual maximum exposure	**1,973**	**318**	**645**	**2,618**

The maximum exposure for market price guarantees for the guarantee funds does not represent the economic risk of this product type because the economic risk also has to reflect these guarantee funds' net assets on the reporting date and the management model used with these products to safeguard the minimum payment commitments. The benefit under a market price guarantee is triggered if the fair value of the affected units does not reach the specified guaranteed level on particular dates. As at the balance sheet date, the UMH subgroup managed guarantee funds with a volume of €282 million (net asset value) (December 31, 2022: €307 million) and a nominal amount of minimum payment commitments of €290 million (December 31, 2022: €332 million). The put options embedded in the guarantee funds were measured at €7 million as at the balance sheet date (December 31, 2022: €13 million) and are reported as derivatives (negative fair values) under equity and liabilities on the balance sheet.

In addition, there were investment funds issued by the group in connection with unit-linked life insurance amounting to €5,064 million (December 31, 2022: €4,149 million) that, however, do not result in a maximum exposure.

The earnings generated from investment funds issued by the DZ BANK Group were as follows:

2023

€ million	Mutual funds	of which guarantee funds	Special funds	**Total**
Interest income and current income and expense	13	-	1	15
Fee and commission income	2,853	1	265	3,118
Gains and losses on investments	-2	-	-	-2
Other gains and losses on valuation of financial instruments	55	6	7	62
Gains and losses on investments held by insurance companies and other insurance company gains and losses	3	-	8	11
Losses	-4	-	-	-4
Total	**2,918**	**7**	**281**	**3,199**

2022

€ million	Mutual funds	of which guarantee funds	Special funds	**Total**
Interest income and current income and expense	5	-	1	5
Fee and commission income	2,929	1	259	3,189
Gains and losses on investments	-62	-	-	-62
Other gains and losses on valuation of financial instruments	-31	-3	1	-30
Gains and losses on investments held by insurance companies and other insurance company gains and losses	-6	-	-160	-166
Losses	-97	-3	-1	-98
Total	**2,737**	**-4**	**101**	**2,838**

Distributions in 2023 relating to each investment fund were offset in the calculation of the losses incurred in respect of each fund.

Interests in investment funds not issued by the DZ BANK Group

The interests in the investment funds not issued by the DZ BANK Group above all comprise investment funds managed by entities in the Union Investment Group within the scope of their own decision-making powers that have been issued by entities outside the DZ BANK Group and parts of such investment funds. Their total volume amounted to €38,100 million (December 31, 2022: €38,500 million). The DZ BANK Group also extends loans to investment funds in order to generate interest income.

In addition, there were investment funds issued by entities outside the group in connection with unit-linked life insurance amounting to €15,428 million (December 31, 2022: €12,043 million) that, however, do not result in a maximum exposure.

The maximum exposure arising from the investment funds not issued by the DZ BANK Group is shown as a gross value, excluding deduction of available collateral. The following assets and liabilities have been recognized on the DZ BANK Group's balance sheet in connection with interests in investment funds not issued by the DZ BANK Group:

€ million	Dec. 31, 2023	Dec. 31, 2022
Assets	**9,889**	**9,413**
Loans and advances to customers	7,731	7,383
Investments held by insurance companies	2,158	2,030
Net exposure recognized on the balance sheet	9,889	9,413
Financial guarantee contracts, loan commitments and other obligations	**355**	**259**
Financial guarantee contracts	38	37
Loan commitments	317	223
Maximum exposure	**10,244**	**9,672**

The earnings generated from interests in investment funds not issued by the DZ BANK Group were as follows:

€ million	2023	2022
Interest income and current income	139	118
Fee and commission income	69	76
Gains and losses on investments held by insurance companies and other insurance company gains and losses	185	-395
Gains and losses from loss allowances	2	-8
Total	**396**	**-209**

Interests in securitization vehicles

The interests in securitization vehicles are interests in vehicles where the DZ BANK Group's involvement goes beyond that of an investor. The assets and liabilities listed below have been recognized on the DZ BANK Group's balance sheet in connection with these interests. There is also an additional exposure from contingent liabilities and from financial guarantee contracts, loan commitments, and other obligations, which are shown at their nominal amounts. Only financial guarantee contracts, loan commitments, and other obligations for which no liability or contingent liability has been recognized are included. The maximum exposure is determined as a gross value, excluding deduction of available collateral.

€ million	Dec. 31, 2023	Dec. 31, 2022
Assets	**3,851**	**4,195**
Loans and advances to customers	2,337	2,299
Financial assets held for trading	52	158
Investments	106	111
Investments held by insurance companies	1,355	1,626
Liabilities	**28**	**50**
Financial liabilities held for trading	26	48
Provisions	2	2
Net exposure recognized on the balance sheet	3,823	4,145
Financial guarantee contracts, loan commitments and other obligations	**3,712**	**3,468**
Loan commitments	3,712	3,468
Maximum exposure	**7,535**	**7,613**

In 2023, interests in securitization vehicles resulted in income of €39 million that was recognized in other comprehensive income (2022: losses of €68 million).

The earnings generated from interests in securitization vehicles were as follows:

€ million	2023	2022
Interest income	88	20
Fee and commission income	83	72
Gains and losses on trading activities	-	-47
Gains and losses on investments	4	1
Gains and losses on investments held by insurance companies and other insurance company gains and losses	60	16
Gains and losses from loss allowances	-	3
Total	**236**	**64**

The material interests in securitization vehicles comprise DZ BANK's two multi-seller asset-backed commercial paper (ABCP) programs CORAL and AUTOBAHN as well as R+V's asset-backed securities (ABSs).

DZ BANK acts as sponsor and program agent for both programs. It is also the program administrator for AUTOBAHN. As sponsor, DZ BANK was involved in setting up the structured entities and provides various services for them. Under the CORAL program, customers of the bank sell assets to separate special-purpose entities. The assets purchased essentially consist of trade receivables, loans, and lease receivables. Under the AUTOBAHN program, assets of North American customers are sold to specially established special-purpose entities and funded through the issuing company by means of ABCP issues.

The special-purpose entities are unconsolidated structured entities. Owing to the cellular structure of the transactions, there are no investee companies to be assessed. DZ BANK does not have control over the individual silos because it acts as agent and not as principal.

The purchase of the assets is funded using liquidity lines and by issuing money market-linked ABCPs. DZ BANK is a liquidity agent for the program, which involves making liquidity facilities available.

In 2023, DZ BANK did not provide either of the programs with any non-contractual support. Moreover, it currently has no intention to provide financial or other support. Because the ABCP programs are fully supported programs, DZ BANK bears all the credit risk.

The current carrying amount of the ABSs held by R+V represents the maximum downside risk.

» 32 Sponsoring arrangements for unconsolidated structured entities

The DZ BANK Group sponsors an unconsolidated structured entity within the meaning of IFRS 12 if it was involved in establishing the structured entity or if the structured entity is linked by name to DZ BANK or a subsidiary within the DZ BANK Group and there are no interests, within the meaning of IFRS 12, in the structured entity. There were no sponsoring arrangements for unconsolidated structured entities in either 2023 or 2022.

C Disclosures relating to the income statement and the statement of comprehensive income

» 33 Segment information

Information on operating segments

2023

€ million	BSH	R+V	TeamBank	UMH
Net interest income	550	-	530	71
Net fee and commission income	-13	-	-39	2,018
Gains and losses on trading activities	-	-	-	-
Gains and losses on investments	-	-	-	-31
Other gains and losses on valuation of financial instruments	1	-	-2	197
Gains and losses from the derecognition of financial assets measured at amortized cost	-2	-	-	-
Insurance service result	-	1,972	-	-
Gains and losses on investments held by insurance companies and other insurance company gains and losses	-	3,136	-	-
Insurance finance income or expenses	-	-4,107	-	-
Gains and losses from the derecognition of financial assets measured at amortized cost in the insurance business	-	6	-	-
Loss allowances	-18	-	-133	-1
Administrative expenses	-536	-	-285	-1,231
Other net operating income	38	-	10	-50
Profit/loss before taxes	**20**	**1,008**	**81**	**974**
Cost/income ratio (%)	93.4	-	57.1	55.8
Regulatory RORAC (%)	1.6	11.3	16.3	>100.0
Average own funds/solvency requirement	1,276	8,955	495	647
Total assets/total equity and liabilities as at Dec. 31, 2023	84,369	127,039	10,640	5,156

	DZ BANK – CICB	DZ HYP	DZ PRIVAT-BANK	VR Smart Finanz	DZ BANK – holding function	Other/ Consolidation	**Total**
	1,483	721	147	123	-103	811	**4,333**
	544	9	220	-29	-	97	**2,807**
	674	-1	16	-	-	-864	**-175**
	-42	-	-	-	-	1	**-72**
	-93	87	17	-	-	91	**298**
	-35	-	-7	-	-	55	**11**
	-	-	-	-	-	22	**1,994**
	-	-	-	-	-	-138	**2,998**
	-	-	-	-	-	-	**-4,107**
	-	-	-	-	-	-	**6**
	-82	-111	-1	-18	-	2	**-362**
	-1,455	-247	-293	-73	-253	-224	**-4,597**
	41	19	-16	-2	-	16	**56**
	1,035	**476**	**83**	**1**	**-356**	**-133**	**3,189**
	56.6	29.6	77.7	79.3	-	-	**56.4**
	18.9	35.2	25.3	0.7	-	-	**17.1**
	5,474	1,355	328	161	-	-	**18,690**
	375,464	87,410	26,190	3,454	23,077	-98,210	**644,589**

2022

€ million	BSH	R+V	TeamBank	UMH
Net interest income	744	-	511	12
Net fee and commission income	11	-	-13	2,036
Gains and losses on trading activities	-	-	-	-
Gains and losses on investments	-90	-	-	-58
Other gains and losses on valuation of financial instruments	4	-	6	-155
Gains and losses from the derecognition of financial assets measured at amortized cost	3	-	-	-
Insurance service result	-	1,980	-	-
Gains and losses on investments held by insurance companies and other insurance company gains and losses	-	-3,748	-	-
Insurance finance income or expenses	-	1,951	-	-
Gains and losses from the derecognition of financial assets measured at amortized cost in the insurance business	-	8	-	-
Loss allowances	-16	-	-100	-
Administrative expenses	-528	-	-286	-1,194
Other net operating income	16	-5	15	54
Profit/loss before taxes	**143**	**187**	**134**	**695**
Cost/income ratio (%)	76.7	-	55.1	63.2
Regulatory RORAC (%)	11.2	2.0	22.8	>100.0
Average own funds/solvency requirement	1,274	9,184	585	565
Total assets/total equity and liabilities as at Dec. 31, 2022	85,599	119,269	10,611	4,818

	DZ BANK – CICB	DZ HYP	DZ PRIVAT-BANK	VR Smart Finanz	DZ BANK – holding function	Other/ Consolidation	**Total**
	1,113	732	83	116	-51	62	3,322
	489	18	220	-29	-	17	2,749
	871	-1	21	-	-	-68	823
	-13	31	-	-	-	11	-119
	-91	-14	4	1	-	-41	-286
	32	-	-1	-	-	1	35
	-	-	-	-	-	97	2,077
	-	-	-	-	-	-11	-3,759
	-	-	-	-	-	-	1,951
	-	-	-	-	-	-	8
	-172	-78	-2	-9	-	73	-304
	-1,350	-256	-277	-76	-228	-252	-4,447
	26	24	4	-	-	70	204
	904	**455**	**52**	**3**	**-279**	**-42**	**2,252**
	55.6	32.4	83.7	86.4	-	-	63.5
	15.2	33.6	14.1	1.8	-	-	11.6
	5,935	1,357	367	163	-	-	19,431
	367,462	89,181	25,447	3,367	21,557	-98,946	628,365

General information on operating segments

The information on operating segments has been prepared using the management approach in accordance with IFRS 8. Under this standard, external reporting must include segment information that is used internally for the management of the entity and for the purposes of quantitative reporting to the chief operating decision-makers. The information on operating segments has therefore been prepared on the basis of the internal management reporting system.

Definition of operating segments

Segmentation is fundamentally based on the integrated risk and capital management system, the function of which is to create transparency, notably in respect of the risk structure and risk-bearing capacity of the individual management units. The segment information presents separate disclosures for the management units DZ HYP AG, Hamburg/Münster, (DZ HYP), TeamBank AG Nürnberg, Nuremberg, (TeamBank), DZ PRIVATBANK, and the BSH, R+V, UMH, and VR Smart Finanz subgroups. DZ BANK is broken down into the central institution and corporate bank (DZ BANK – CICB) and the group management function (DZ BANK – holding function) in line with the internal financial reporting structure. The DZ BANK – CICB operating segment comprises the cooperative central institution function, which supports the operating activities of the local cooperative banks, and the corporate bank function. DZ BANK – holding function is mainly used to pool tasks carried out on behalf of the DZ BANK Group in relation to commercial law, tax, and prudential supervision. The total assets of DZ BANK – holding function include the equity, plus a number of other items such as a notional carrying amount for the long-term equity investment in DZ BANK – CICB, together with the carrying amounts of the long-term equity investments in the other management units. The notional long-term equity investment in DZ BANK – CICB is measured in an amount equating to 11 percent of the risk-weighted assets of DZ BANK – CICB. DZ BANK – holding function does not constitute an operating segment within the meaning of IFRS 8.5 but is presented separately in line with the internal reporting structure. All other companies in the DZ BANK Group, which are not required to provide regular quantitative reports to the chief operating decision-makers, and the consolidations are reported on an aggregated basis under Other/Consolidation.

Presentation of operating segments

Interest income and associated interest expenses generated by the operating segments are offset and reported as net interest income in the information on operating segments because, from a group perspective, the operating segments are managed solely on the basis of the net figure.

Measurement

Internal reporting to the chief operating decision-makers is primarily based on the IFRS accounting and measurement principles applicable to the DZ BANK Group.

Intragroup transactions between operating segments and internal transactions in the DZ BANK – CICB operating segment are carried out on an arm's-length basis. These transactions are predominantly reported internally using the financial reporting standards applied to external financial reporting.

The key indicators for assessing the performance of the operating segments are profit/loss before taxes, the cost/income ratio, and the return on risk-adjusted capital (regulatory RORAC).

The cost/income ratio shows the ratio of administrative expenses to operating income and reflects the economic efficiency of the operating segment concerned.

Operating income comprises net interest income, net fee and commission income, gains and losses on trading activities, gains and losses on investments, other gains and losses on valuation of financial instruments, gains and losses from the derecognition of financial assets measured at amortized cost, net income from insurance business, and other net operating income.

Regulatory RORAC is a risk-adjusted performance measure. It reflects the relationship between profit before taxes and the average own funds for the year (calculated as an average of the figure for the four quarters) in accordance with the own funds/solvency requirements for the financial conglomerate. It therefore shows the return on the regulatory risk capital employed.

Other/Consolidation

The consolidation-related adjustments shown under Other/Consolidation to reconcile operating segment profit/loss before taxes to consolidated profit/loss before taxes are attributable to the elimination of intragroup transactions and to the fact that investments in joint ventures and associates are accounted for using the equity method. Differences between the figures in internal management reporting and those reported in the consolidated financial statements that arise from the recognition of internal transactions in the DZ BANK – CICB operating segment are also eliminated.

The adjustments to net interest income are primarily the result of the elimination of intragroup dividend payments and profit distributions in connection with intragroup liabilities to dormant partners and are also attributable to the early redemption of issued bonds and commercial paper acquired by entities in the DZ BANK Group other than the issuer. Internal transactions in the DZ BANK – CICB operating segment are also eliminated in net interest income and with offsetting entries under gains and losses on trading activities.

The figure under Other/Consolidation for net fee and commission income largely relates to the fee and commission business of TeamBank and the BSH subgroup with the R+V subgroup.

The remaining adjustments are mostly also attributable to the consolidation of income and expenses.

DZ BANK Group-wide disclosures

Information about geographical areas

Operating income was generated in the following geographical areas:

€ million	2023	2022
Germany	7,392	6,131
Rest of Europe	808	880
Rest of World	135	178
Consolidation/reconciliation	-186	-186
Total	**8,149**	**7,003**

Information on geographical areas is presented according to the home countries of the companies included in the consolidated financial statements.

This information does not include the separate disclosure of certain non-current (largely tangible) assets because these assets are of minor significance in the DZ BANK Group’s business model.

Information about products and services

Information on products and services is included in the income statement disclosures below.

» 34 Net interest income

€ million	2023	2022
INTEREST INCOME AND CURRENT INCOME AND EXPENSE	**13,834**	5,974
Interest income from	**13,733**	5,919
Lending and money market business	11,423	5,726
of which relating to mortgage loans	1,340	972
of which relating to money market business	4,262	628
of which relating to home savings loans advanced by building society	1,063	1,007
of which relating to pass-through loans	617	518
of which relating to registered securities	435	283
of which relating to finance leases	20	23
Bonds and other fixed-income securities	916	485
Portfolio hedges of interest-rate risk	1,405	-77
Financial assets with a negative effective interest rate	-11	-215
Other assets	-	1
Current income and expense from	**101**	55
Shares and other variable-yield securities	57	24
of which income from other shareholdings	14	18
Investments in subsidiaries	4	8
Entities accounted for using the equity method	34	17
of which relating to investments in joint ventures	34	10
of which relating to investments in associates	-	6
Income from profit-pooling, profit-transfer and partial profit-transfer agreements	7	6
INTEREST EXPENSE ON	**-9,501**	-2,652
Deposits from banks and customers	-7,180	-2,528
of which relating to home savings deposits	-746	-511
Debt certificates issued including bonds	-1,754	-494
Subordinated capital	-151	-93
Portfolio hedges of interest-rate risk	-421	-19
Financial liabilities with a positive effective interest rate	20	483
Provisions and other liabilities	-15	-2
Total	**4,333**	3,322

The interest income from other assets included gains from non-credit-risk-related modifications of €3 million (2022: €1 million) and losses from non-credit-risk-related modifications of €3 million (2022: €0 million), such gains and losses resulting from financial assets. The interest expense on provisions and other liabilities included interest expense on lease liabilities of €7 million (2022: €5 million).

» 35 Net fee and commission income

€ million	2023	2022
Fee and commission income	**5,174**	**5,262**
Securities business	3,964	4,089
Asset management	334	344
Payments processing including card processing	368	332
Lending business and trust activities	178	162
Financial guarantee contracts and loan commitments	96	72
International business	13	13
Building society operations	35	45
Other	186	206
Fee and commission expenses	**-2,368**	**-2,513**
Securities business	-1,656	-1,764
Asset management	-201	-216
Payments processing including card processing	-224	-183
Lending business	-79	-77
Financial guarantee contracts and loan commitments	-12	-12
Building society operations	-73	-68
Other	-122	-193
Total	**2,807**	**2,749**

Fee and commission income included revenue from contracts with customers pursuant to IFRS 15 in an amount of €5,166 million (2022: €5,247 million); see note 103.

» 36 Gains and losses on trading activities

€ million	2023	2022
Gains and losses on non-derivative financial instruments and embedded derivatives	-2,430	4,473
of which gains and losses on financial instruments designated as at fair value through profit or loss that are related to derivatives held for trading purposes	-975	3,064
Gains and losses on derivatives	2,193	-3,794
Gains and losses on exchange differences	62	144
Total	**-175**	**823**

Gains and losses on exchange differences included currency translation gains of €5 million on financial instruments not measured at fair value through profit or loss (2022: losses of €40 million).

» 37 Gains and losses on investments

€ million	2023	2022
Gains and losses on the disposal of bonds and other fixed-income securities	**-36**	**-41**
Gains and losses on the disposal of shares and other variable-yield securities	**-2**	**-62**
Gains and losses on investments in joint ventures	**-28**	**-31**
Impairment losses	-28	-31
Gains and losses on investments in associates	**-5**	**15**
Disposals	-	11
Impairment losses	-11	-4
Reversals of impairment losses	5	8
Total	**-72**	**-119**

» 38 Other gains and losses on valuation of financial instruments

€ million	2023	2022
Gains and losses from fair value hedge accounting	**-44**	-45
Gains and losses on derivatives used for purposes other than trading	**156**	-6
Gains and losses on financial instruments designated as at fair value through profit or loss	**114**	-160
Gains and losses on non-derivative financial instruments and embedded derivatives that are not related to derivatives held for trading purposes	-162	349
Gains and losses on derivatives	277	-509
Gains and losses on financial assets mandatorily measured at fair value through profit or loss	**71**	-75
Total	**298**	-286

Gains and losses on derivatives used for purposes other than trading result from the recognition and measurement of derivatives that are used for economic hedging but are not included in hedge accounting and/or are not related to financial instruments designated as at fair value through profit or loss.

» 39 Gains and losses from the derecognition of financial assets measured at amortized cost

€ million	2023	2022
Gains from the derecognition of financial assets measured at amortized cost	**122**	56
Loans and advances to banks and customers	2	10
Investments	4	2
Fair value changes of the hedged items in portfolio hedges of interest-rate risk	117	44
Losses on derecognition of financial assets measured at amortized cost	**-111**	-22
Loans and advances to banks and customers	-70	-8
Investments	-21	-13
Fair value changes of the hedged items in portfolio hedges of interest-rate risk	-21	-1
Total	**11**	35

The derecognition of financial assets measured at amortized cost was primarily attributable to the sale of impaired loans and advances to customers and early redemptions at the request of customers.

» 40 Gains and losses on investments held by insurance companies and other insurance company gains and losses

€ million	2023	2022
Income from investments held by insurance companies	**7,117**	6,615
Interest income and current income	2,535	2,406
Income from reversals of impairment losses and reversals of loss allowances, and unrealized gains	342	1,402
Gains on valuation through profit or loss of investments held by insurance companies	3,833	1,864
Gains on disposals	407	944
Expenses in connection with investments held by insurance companies	**-3,589**	-10,285
Administrative expenses	-156	-169
Depreciation/amortization expense, additions to loss allowances, and impairment losses and unrealized losses	-859	-1,104
Losses on valuation through profit or loss of investments held by insurance companies	-1,899	-7,139
Losses on disposals	-675	-1,873
Other non-insurance gains and losses	**-530**	-89
Total	**2,998**	-3,759

Other non-insurance gains and losses included interest expenses on lease liabilities amounting to €2 million (2022: €1 million).

Income from and expenses in connection with investments held by insurance companies and other non-insurance gains and losses included currency translation losses of €9 million on financial instruments not measured at fair value through profit or loss (2022: gains of €12 million).

Income from and expenses in connection with investments held by insurance companies included additions to loss allowances of €100 million (2022: €67 million) and reversals of loss allowances of €39 million (2022: €57 million).

» 41 Insurance finance income or expenses

€ million	2023	2022
Insurance finance income or expenses from insurance contracts	-4,109	1,951
Insurance finance income or expenses from reinsurance contracts held	2	-
Total	**-4,107**	**1,951**

» 42 Gains and losses from the derecognition of financial assets measured at amortized cost in the insurance business

The derecognition of financial assets measured at amortized cost in the insurance business gave rise to gains of €8 million (2022: €11 million) and losses of €1 million (2022: €3 million).

» 43 Loss allowances

€ million	2023	2022
Loss allowances for loans and advances to banks	**14**	**-30**
Additions	-36	-93
Reversals	45	61
Recoveries on loans and advances to banks previously impaired	4	1
Loss allowances for loans and advances to customers	**-374**	**-236**
Additions	-2,543	-2,223
Reversals	2,083	1,905
Directly recognized impairment losses	-53	-29
Recoveries on loans and advances to customers previously impaired	105	78
Other	33	34
Loss allowances for investments	**2**	**4**
Additions	-21	-13
Reversals	23	17
Loss allowances for other assets	**-1**	**-1**
Reversals	1	-
Directly recognized impairment losses	-2	-1
Other loss allowances for loans and advances	**-3**	**-42**
Additions to and reversals of provisions for loan commitments	9	-20
Additions to and reversals of provisions for financial guarantee contracts	-14	-9
Additions to and reversals of other provisions for loans and advances	2	-13
Total	**-362**	**-304**

Gains and losses from credit-risk-related modifications and other gains and losses on POCI assets are reported under the ‘Other’ line item. Other gains and losses on POCI assets consist of the changes in the loss allowances for these assets within the reporting period.

» 44 Administrative expenses

€ million	2023	2022
Staff expenses	**-2,174**	**-2,072**
Wages and salaries	-1,812	-1,726
Social security contributions	-239	-228
Pension and other post-employment benefit expenses	-105	-107
Expenses for share-based payment transactions	-18	-11
General and administrative expenses	**-2,128**	**-2,082**
Expenses for temporary staff	-28	-26
Contributions and fees	-284	-315
of which contributions to the resolution fund for CRR credit institutions	-114	-151
Consultancy	-509	-494
Office expenses	-162	-156
IT expenses	-624	-577
Property and occupancy costs	-120	-116
Information procurement	-109	-100
Public relations and marketing	-168	-173
Other general and administrative expenses	-120	-121
Expenses for administrative bodies	-4	-4
Depreciation and amortization	**-295**	**-292**
Property, plant and equipment, and investment property	-81	-84
Right-of-use assets	-89	-86
Other assets	-125	-122
Total	**-4,597**	**-4,447**

» 45 Other net operating income

€ million	2023	2022
Income from the reversal of provisions and accruals	175	157
Restructuring expenses	-94	-5
Income and expense from impairment losses on other intangible assets, and reversals thereof	-53	-
Gains and losses on non-current assets and disposal groups classified as held for sale	25	49
Gains on the disposal of other assets	21	43
Residual other net operating income	-18	-39
Total	**56**	**204**

Gains and losses on non-current assets and disposal groups classified as held for sale included realized gains of €25 million on disposals (2022: €51 million) and no impairment losses (2022: impairment losses of €2 million).

Restructuring expenses included additions of €70 million to provisions for termination benefits linked with restructuring (2022: €3 million).

Residual other net operating income included rental income from investment property of €17 million (2022: €13 million) and directly assignable expenses of €4 million for the management of investment property (2022: €4 million).

» 46 Income taxes

€ million	2023	2022
Current tax expense	-986	-908
Deferred tax income/expense	31	-3
Total	**-955**	**-912**

The total for current taxes includes expenses of €302 million (2022: €49 million) attributable to previous years. Deferred taxes include income of €4 million (2022: expenses of €77 million) related to temporary differences and their reversal.

Current taxes in relation to the German limited companies in the group are calculated using an effective corporation tax rate of 15.825 percent (2022: 15.825 percent) based on a corporation tax rate of 15.0 percent (2022: 15.0 percent) plus the solidarity surcharge. The effective rate of trade tax for DZ BANK and subsidiaries that are members of its tax group was 15.470 percent (2022: 15.435 percent).

Deferred taxes must be calculated using tax rates expected to apply when the tax asset is recovered or liability settled. The tax rates used are therefore those that are valid or have been announced for the periods in question as at the balance sheet date.

The following table shows a reconciliation from expected income taxes to recognized income taxes based on application of the current tax law in Germany:

€ million	2023	2022
Profit before taxes	**3,189**	**2,252**
Group income tax rate	31.295%	31.260%
Expected income taxes	**-998**	**-704**
Income tax effects	**43**	**-208**
Impact of tax-exempt income and non-deductible expenses	-50	-65
Adjustments resulting from other types of income tax, other trade tax multipliers, and changes in tax rates	76	-79
Tax rate differences on income subject to taxation in other countries	26	25
Current and deferred taxes relating to prior years	-38	-21
Change in impairment losses on deferred tax assets	38	21
Other effects	-10	-89
Recognized income taxes	**-955**	**-912**

» 47 Items reclassified to the income statement

The following amounts were recognized in other comprehensive income/loss or reclassified from other comprehensive income/loss to the income statement in the reporting period:

€ million	2023	2022
Gains and losses on debt instruments measured at fair value through other comprehensive income	**4,679**	**-22,777**
Gains (+)/losses (-) arising during the reporting period	4,338	-23,312
Gains (-)/losses (+) reclassified to the income statement during the reporting period	341	535
Exchange differences on currency translation of foreign operations	**-12**	**13**
Gains (+)/losses (-) arising during the reporting period	-12	12
Gains (-)/losses (+) reclassified to the income statement during the reporting period	-	1
Insurance finance income or expenses included in other comprehensive income	**-3,745**	**18,452**
Gains (+)/losses (-) arising during the reporting period	-3,745	18,452
Share of other comprehensive income/loss of joint ventures and associates accounted for using the equity method	**-8**	**1**
Gains (+)/losses (-) arising during the reporting period	-8	1

» 48 Income taxes relating to components of other comprehensive income

The table below shows the income taxes on the various components of other comprehensive income:

	2023			2022		
€ million	Amount before taxes	Income taxes	Amount after taxes	Amount before taxes	Income taxes	Amount after taxes
Items that may be reclassified to the income statement	**914**	**-349**	**566**	**-4,311**	**1,415**	**-2,896**
Gains and losses on debt instruments measured at fair value through other comprehensive income	4,679	-1,460	3,219	-22,777	7,129	-15,648
Exchange differences on currency translation of foreign operations	-12	5	-7	13	-1	13
Insurance finance income or expenses included in other comprehensive income	-3,745	1,106	-2,638	18,452	-5,713	12,739
Share of other comprehensive income/loss of joint ventures and associates accounted for using the equity method	-8	-	-8	1	-	1
Items that will not be reclassified to the income statement	**108**	**-117**	**-9**	**-46**	**13**	**-33**
Gains and losses on equity instruments for which the fair value OCI option has been exercised	-47	-71	-118	-636	191	-445
Gains and losses in relation to financial liabilities for which the fair value option has been exercised, attributable to changes in own credit risk	300	-94	206	170	-51	119
Gains and losses arising from remeasurement of defined benefit plans	-145	48	-98	419	-126	293
Total	**1,022**	**-465**	**556**	**-4,357**	**1,428**	**-2,929**

D Balance sheet disclosures

» 49 Cash and cash equivalents

€ million	Dec. 31, 2023	Dec. 31, 2022
Cash on hand	366	312
Balances with central banks	101,463	93,405
Total	**101,830**	**93,717**

The average target minimum reserve for 2023 was €4,134 million (2022: €4,159 million).

» 50 Loans and advances to banks

	Repayable on demand		Other loans and advances		Total	
€ million	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022
Domestic banks	**4,945**	6,666	**117,557**	107,350	**122,502**	114,015
Affiliated banks	2,831	4,033	115,153	103,471	117,984	107,505
Other banks	2,115	2,632	2,404	3,878	4,519	6,510
Foreign banks	**2,108**	2,636	**4,256**	6,793	**6,364**	9,429
Total	**7,054**	**9,301**	**121,813**	**114,142**	**128,867**	**123,444**

The following table shows the breakdown of loans and advances to banks by type of business:

€ million	Dec. 31, 2023	Dec. 31, 2022
Mortgage loans	56	96
Home savings loans advanced by building society	103	-
Registered securities	11,502	11,593
Pass-through loans	69,065	68,213
Other bank loans	27,175	20,267
Money market placements	17,847	19,978
Current account debit balances	2,075	2,524
Other loans and advances	1,044	773
Total	**128,867**	**123,444**

» 51 Loans and advances to customers

€ million	Dec. 31, 2023	Dec. 31, 2022
Loans and advances to domestic customers	178,389	176,145
Loans and advances to foreign customers	26,388	27,501
Total	**204,776**	**203,646**

The following table shows the breakdown of loans and advances to customers by type of business:

€ million	Dec. 31, 2023	Dec. 31, 2022
Mortgage loans	57,227	56,962
Home savings loans advanced by building society	64,631	63,660
Finance leases	463	565
Registered securities	7,605	7,994
Pass-through loans	8,378	7,742
Other bank loans	49,643	48,903
Money market placements	2,165	2,879
Current account debit balances	5,686	6,042
Other loans and advances	8,979	8,900
Total	**204,776**	**203,646**

» 52 Hedging instruments (positive fair values)

Hedging instruments (positive fair values) amounted to €923 million (December 31, 2022: €1,568 million) and resulted solely from derivatives used as fair value hedges.

» 53 Financial assets held for trading

€ million	Dec. 31, 2023	Dec. 31, 2022
DERIVATIVES (POSITIVE FAIR VALUES)	**16,482**	**21,474**
Interest-linked contracts	13,799	17,779
Currency-linked contracts	1,759	2,956
Share-/index-linked contracts	688	547
Other contracts	11	6
Credit derivatives	225	187
BONDS AND OTHER FIXED-INCOME SECURITIES	**8,334**	**7,729**
Money market instruments	60	212
Bonds	8,275	7,517
SHARES AND OTHER VARIABLE-YIELD SECURITIES	**1,329**	**1,388**
Shares	1,325	1,381
Investment fund units	4	7
RECEIVABLES	**8,815**	**18,318**
of which from affiliated banks	816	76
of which from other banks	7,522	16,915
Money market placements	**7,815**	**17,058**
with banks	7,798	16,322
with customers	17	737
Promissory notes and registered bonds	**1,000**	**1,259**
from banks	539	669
from customers	461	590
Total	**34,961**	**48,909**

» 54 Investments

€ million	Dec. 31, 2023	Dec. 31, 2022
Bonds and other fixed-income securities	**44,453**	**40,731**
Money market instruments	925	1,070
Bonds	43,527	39,661
Shares and other variable-yield securities	**2,880**	**1,962**
Shares and other shareholdings	388	470
Investment fund units	2,492	1,491
Other variable-yield securities	-	1
Investments in subsidiaries	**180**	**236**
Investments in joint ventures	**312**	**320**
Investments in associates	**145**	**144**
Total	**47,970**	**43,393**

The carrying amount of investments in joint ventures accounted for using the equity method totaled €312 million (December 31, 2022: €317 million). €139 million of the investments in associates has been accounted for using the equity method (December 31, 2022: €131 million).

» 55 Investments held by insurance companies

€ million	Dec. 31, 2023	Dec. 31, 2022
Investment property	3,866	4,028
Investments in subsidiaries	810	840
Investments in joint ventures	62	69
Investments in associates	-	1
Mortgage loans	12,008	10,960
Promissory notes and loans	5,996	5,946
Registered bonds	5,531	5,430
Other loans	1,014	834
Variable-yield securities	11,871	13,023
Fixed-income securities	53,647	47,652
Derivatives (positive fair values)	159	278
Deposits with ceding insurers and other investments	40	56
Assets related to unit-linked contracts	20,563	16,429
Total	**115,568**	**105,548**

The fair value of investment property was €5,643 million as at the balance sheet date (December 31, 2022: €5,904 million).

Some investment property has been pledged as collateral and is subject to restrictions on disposal, the total furnished collateral value of the property being €1,242 million (December 31, 2022: €1,182 million). The group also has capital expenditure commitments amounting to €48 million (December 31, 2022: €20 million). A total of €35 million was spent on the repair and maintenance of investment property in 2023 (2022: €41 million). Vacant property resulted in repair and maintenance expenses of €3 million (2022: €4 million).

» 56 Property, plant and equipment, investment property, and right-of-use assets

€ million	Dec. 31, 2023	Dec. 31, 2022
Land and buildings	858	867
Office furniture and equipment	178	179
Investment property	280	293
Right-of-use assets	554	622
Total	**1,870**	**1,960**

The fair value of investment property was €345 million as at the balance sheet date (December 31, 2022: €361 million). Payments in advance are allocated to the relevant item of property, plant and equipment.

» 57 Income tax assets and liabilities

€ million	Dec. 31, 2023	Dec. 31, 2022
Income tax assets	**4,827**	**5,777**
Current income tax assets	329	284
Deferred tax assets	4,497	5,493
Income tax liabilities	**4,813**	**5,346**
Current income tax liabilities	662	635
Deferred tax liabilities	4,151	4,711

In addition to deferred tax assets recognized for tax loss carryforwards, deferred tax assets and liabilities are also recognized for temporary differences in respect of the items shown below:

	Deferred tax assets		Deferred tax liabilities	
€ million	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022
Tax loss carryforwards	118	91		
Loans and advances to banks and customers	33	37	222	446
Financial assets and liabilities held for trading, hedging instruments (positive and negative fair values)	812	1,145	29	63
Investments	635	1,100	5	9
Loss allowances	262	257	-	-
Investments held by insurance companies	2,745	3,602	223	-
Property, plant and equipment, investment property, and right-of-use assets	10	11	207	233
Deposits from banks and customers	196	219	310	470
Debt certificates issued including bonds	2	2	713	827
Provisions for employee benefits and for share-based payment transactions	583	543	70	60
Other provisions	361	149	33	26
Insurance contract liabilities	1,162	1,033	4,746	5,307
Other balance sheet items	461	517	476	484
Total (gross)	7,380	8,708	7,034	7,926
Netting of deferred tax assets and deferred tax liabilities	-2,883	-3,215	-2,883	-3,215
Total (net)	**4,497**	**5,493**	**4,151**	**4,711**

Deferred tax assets for temporary differences and tax loss carryforwards are only recognized if it is sufficiently probable that the asset can be recovered in the future. No deferred tax assets have been recognized for corporation tax loss carryforwards amounting to €182 million (December 31, 2022: €181 million), which can be carried forward indefinitely, or for trade tax loss carryforwards amounting to €148 million (December 31, 2022: €127 million). There remained foreign loss carryforwards of €95 million (December 31, 2022: €324 million) for which no deferred tax assets are recognized. Of this total, €10 million will expire by 2031 and €85 million can be used indefinitely.

As regards companies (or permanent establishments of companies) in the DZ BANK Group that suffered tax losses in 2023 or 2022 in their tax jurisdiction, it will be possible to utilize deferred tax assets amounting to €4,219 million (December 31, 2022: €4,952 million) in the future if a corresponding level of taxable income is available. It is assumed that this will in fact be the case based on information available from planning of taxable income.

Overall, there was a net deferred tax asset recognized through other comprehensive income of €615 million (December 31, 2022: €1,080 million).

Deferred tax assets of €3,347 million (December 31, 2022: €4,113 million) and deferred tax liabilities of €3,064 million (December 31, 2022: €3,538 million) are expected to be realized only after a period of 12 months.

As at December 31, 2023, no deferred tax liabilities were recognized for temporary differences of €182 million (December 31, 2022: €184 million) relating to investments in subsidiaries.

» 58 Other assets

€ million	Dec. 31, 2023	Dec. 31, 2022
Other assets held by insurance companies	3,578	3,768
Goodwill	155	155
Other intangible assets	437	508
of which software	388	415
of which acquired customer relationships	10	60
Other loans and advances	526	464
Residual other assets	1,149	1,693
Total	**5,845**	**6,588**

Other intangible assets include internally generated intangible assets amounting to €16 million (December 31, 2022: €23 million).

Residual other assets included initial margins from client clearing of €522 million (December 31, 2022: €1,129 million).

The breakdown of other assets held by insurance companies is as follows:

€ million	Dec. 31, 2023	Dec. 31, 2022
Intangible assets	**160**	145
Reinsurance contract assets	**368**	560
Liability for remaining coverage	34	36
Liability for incurred claims	334	524
Insurance contract assets	**1**	2
Liability for remaining coverage	1	3
Liability for incurred claims	-	-1
Receivables	**1,028**	1,002
Receivables arising out of direct insurance operations	114	106
Receivables arising out of reinsurance operations	41	48
Other receivables	873	848
Credit balances with banks, checks and cash on hand	**647**	703
Property, plant and equipment	**424**	410
Land and buildings	298	281
Office furniture and equipment	61	65
Right-of-use assets held by insurance companies	64	64
Residual other assets	**952**	947
Prepaid expenses	53	47
Remaining assets held by insurance companies	899	900
Loss allowances	**-2**	-1
Total	3,578	3,768

The intangible assets in the other assets held by insurance companies include internally generated intangible assets amounting to €24 million (December 31, 2022: €22 million).

Trustee’s blocking notes have been entered in the land register for land and buildings held by companies offering personal insurance of €176 million (December 31, 2022: €159 million).

» 59 Loss allowances

Loss allowances for loans and advances to banks and for loans and advances to customers also comprise the loss allowances recognized for finance lease receivables.

The following table shows the changes in loss allowances, which are reported on the assets side of the balance sheet, broken down by individual balance sheet item:

	Loans and advances to banks			Loans and advances to customers			
€ million	Stage 1	Stage 2	Stage 3	Stage 1	Stage 2	Stage 3	POCI assets
Balance as at Jan. 1, 2022	14	2	8	264	364	1,267	13
Additions	34	12	46	280	906	1,009	28
Utilizations	-	-	-	-	-1	-318	-4
Reversals	-29	-7	-24	-482	-429	-974	-19
Other changes	-1	-2	2	182	-305	172	1
Balance as at Dec. 31, 2022	17	5	32	244	535	1,157	18
Additions	26	2	8	275	920	1,316	31
Utilizations	-	-	-	-	-2	-199	-5
Reversals	-29	-4	-13	-472	-592	-996	-21
Other changes	-	-	-1	196	-357	152	-5
Balance as at Dec. 31, 2023	**15**	**2**	**26**	**243**	**504**	**1,430**	**18**

	Investments			Other assets	Total
€ million	Stage 1	Stage 2	Stage 3	Stage 1	
Balance as at Jan. 1, 2022	4	13	5	2	1,956
Additions	3	2	1	-	2,322
Utilizations	-	-	-	-	-323
Reversals	-2	-4	-3	-	-1,975
Other changes	-	-	-	-	49
Balance as at Dec. 31, 2022	4	11	4	2	2,029
Additions	2	2	1	-	2,583
Utilizations	-	-	-	-	-205
Reversals	-10	-4	-2	-1	-2,144
Other changes	8	-8	-	-	-15
Balance as at Dec. 31, 2023	**3**	**1**	**4**	**1**	**2,248**

» 60 Changes in non-current assets

The following table shows the changes in investment property included in the investments held by insurance companies, the changes in property, plant and equipment, and investment property, and the changes in intangible assets included in other assets:

€ million	**Investments held by insurance companies** Investment property	
Carrying amounts as at Jan. 1, 2022	3,813	
Cost as at Jan. 1, 2022	4,571	
Additions	58	
Reclassifications	-	
Reclassifications to/from non-current assets and disposal groups classified as held for sale	-7	
Disposals	-10	
Changes attributable to currency translation	-	
Changes in scope of consolidation	257	
Cost as at Dec. 31, 2022	**4,869**	
Reversals of impairment losses as at Jan. 1, 2022	27	
Additions	-	
Reversals of impairment losses as at Dec. 31, 2022	**28**	
Depreciation/amortization and impairment losses as at Jan. 1, 2022	-785	
Depreciation/amortization expense for the year	-89	
Impairment losses for the year	-2	
Reclassifications	-	
Reclassifications to/from non-current assets and disposal groups classified as held for sale	3	
Disposals	5	
Changes in scope of consolidation	-	
Depreciation/amortization and impairment losses as at Dec. 31, 2022	**-869**	
Carrying amounts as at Dec. 31, 2022	4,028	
Cost as at Jan. 1, 2023	4,869	
Additions	29	
Reclassifications	-	
Reclassifications to/from non-current assets and disposal groups classified as held for sale	-25	
Disposals	-5	
Changes attributable to currency translation	-	
Changes in scope of consolidation	-	
Cost as at Dec. 31, 2023	**4,867**	
Reversals of impairment losses as at Jan. 1, 2023	28	
Additions	-	
Reversals of impairment losses as at Dec. 31, 2023	**28**	
Depreciation/amortization and impairment losses as at Jan. 1, 2023	-869	
Depreciation/amortization expense for the year	-88	
Impairment losses for the year	-84	
Reclassifications	-	
Reclassifications to/from non-current assets and disposal groups classified as held for sale	12	
Disposals	1	
Changes attributable to currency translation	-	
Depreciation/amortization and impairment losses as at Dec. 31, 2023	**-1,029**	
Carrying amounts as at Dec. 31, 2023	**3,866**	

	Property, plant and equipment, and investment property			Other assets	
	Land and buildings	Office furniture and equipment	Investment property	Goodwill	Other intangible assets
	888	178	279	155	522
	1,305	571	319	385	2,078
	13	58	5	-	121
	-15	-1	16	-	-
	-	-	-	-	-
	-1	-44	-	-28	-65
	-	-	-	-	-2
	-	10	-	-	-1
	1,303	**594**	**339**	**356**	**2,133**
	13	-	5	-	4
	5	-	1	-	-
	18	**-**	**6**	**-**	**4**
	-430	-393	-45	-230	-1,560
	-24	-54	-6	-	-126
	-	-1	-	-	-
	2	-	-2	-	-
	-	-	-	-	-
	-1	39	-	28	60
	-	-7	-	-	-
	-454	**-416**	**-52**	**-202**	**-1,628**
	867	179	293	155	508
	1,303	594	339	356	2,133
	535	61	2	-	137
	3	-2	-1	-	-
	-	-22	-	-	-48
	-	-42	-	-	-24
	-	1	-	-	3
	-521	-	-	-	-
	1,320	**590**	**340**	**356**	**2,200**
	18	-	6	-	4
	-	2	-	-	2
	18	**2**	**6**	**-**	**6**
	-454	-416	-52	-202	-1,628
	-24	-51	-6	-	-128
	-1	-	-8	-	-55
	-1	1	-	-	-
	-	13	-	-	23
	-	41	-	-	21
	-	-1	-	-	-2
	-480	**-413**	**-66**	**-202**	**-1,769**
	858	**178**	**280**	**155**	**437**

€ million	Other assets of which other assets held by insurance companies Land and buildings	Office furniture and equipment	Intangible assets
Carrying amounts as at Jan. 1, 2022	277	62	151
Cost as at Jan. 1, 2022	500	209	734
Additions	14	25	45
Reclassifications	-	2	-
Disposals	-	-8	-8
Cost as at Dec. 31, 2022	**514**	**228**	**771**
Reversals of impairment losses as at Jan. 1, 2022	10	-	-
Reversals of impairment losses as at Dec. 31, 2022	**10**	**-**	**-**
Depreciation/amortization and impairment losses as at Jan. 1, 2022	-233	-148	-583
Depreciation/amortization expense for the year	-11	-22	-46
Reclassifications	-	-2	-
Disposals	-	8	4
Depreciation/amortization and impairment losses as at Dec. 31, 2022	**-243**	**-163**	**-626**
Carrying amounts as at Dec. 31, 2022	281	65	145
Cost as at Jan. 1, 2023	514	228	771
Additions	30	19	78
Reclassifications	-	-	-2
Reclassifications to/from non-current assets and disposal groups classified as held for sale	-8	-	-
Disposals	-	-20	-81
Cost as at Dec. 31, 2023	**536**	**227**	**767**
Reversals of impairment losses as at Jan. 1, 2023	10	-	-
Reversals of impairment losses as at Dec. 31, 2023	**10**	**-**	**-**
Depreciation/amortization and impairment losses as at Jan. 1, 2023	-243	-163	-626
Depreciation/amortization expense for the year	-8	-22	-56
Impairment losses for the year	-4	-	-
Reclassifications	-	-	2
Reclassifications to/from non-current assets and disposal groups classified as held for sale	7	-	-
Disposals	-	20	73
Depreciation/amortization and impairment losses as at Dec. 31, 2023	**-247**	**-166**	**-607**
Carrying amounts as at Dec. 31, 2023	**298**	**61**	**160**

In 2023, the useful life of the assets ranged from 2 to 60 years for buildings (2022: 2 to 58 years) and from 1 to 25 years for office furniture and equipment (2022: 1 to 33 years). As had been the case in 2022, the useful life for investment property was 1 to 80 years. Software included in other intangible assets was amortized over a useful life of 1 to 10 years (2022: 1 to 12 years). Acquired customer relationships were amortized over a useful life of 10 to 20 years, as had also been the case in 2022. Depreciation and amortization are recognized on a straight-line basis over the useful life of the asset.

Payments in advance are allocated to the relevant item of property, plant and equipment.

Disclosures regarding the changes in goodwill are included in note 101.

Other intangible assets include acquired customer relationships amounting to €10 million (December 31, 2022: €60 million). The associated amortization expense came to €2 million (2022: €4 million) and the associated impairment losses to €50 million (2022: €0 million).

The changes in right-of-use assets are described in note 102.

» 61 Non-current assets and disposal groups classified as held for sale

The non-current assets and disposal groups classified as held for sale include individual non-current assets together with assets and liabilities from disposal groups not qualifying as discontinued operations, as described below.

At the level of the BSH subgroup, shares in the Hungarian subsidiary Fundamenta-Laskáskassza Lakástrakarékpénztár Zrt., Budapest, (FLK) are to be sold. FLK constitutes a disposal group not qualifying as a discontinued operation.

In this context, Bausparkasse Schwäbisch Hall AG signed a sale agreement with MBH Bank Nyrt, Budapest, Hungary, which is part of Magyar Bankholding, on November 10, 2023. The fair value was determined on the basis of the purchase consideration agreement. The consideration will be transferred upon completion of the transaction, which is expected to take place in the first half of 2024. The fair value determined for the FLK disposal group, which is derived from the purchase consideration mechanism specified in the sale and purchase agreement, is higher than its carrying amount as at the balance sheet date.

On December 31, 2023, the FLK disposal group was recognized at the lower of the carrying amount and the fair value less costs to sell. It consisted of the following material groups of assets and liabilities:

ASSETS

€ million	Dec. 31, 2023
Cash and cash equivalents	124
Loans and advances to banks	12
Loans and advances to customers	1,374
Investments	194
Property, plant and equipment, investment property, and right-of-use assets	19
Income tax assets	3
Other assets	31
Loss allowances	-24
Total	**1,733**

LIABILITIES

€ million	Dec. 31, 2023
Deposits from banks	40
Deposits from customers	1,463
Provisions	3
Income tax liabilities	3
Other liabilities	23
Total	**1,533**

The disposal groups not qualifying as discontinued operations also include units in various investment funds with a carrying amount of €48 million.

The individual non-current assets classified as held for sale comprise real estate, investments in associates, and other shareholdings. The carrying amount comes to a total of €9 million. The sale of these individual non-current assets classified as held for sale is expected to take place in the first half of 2024.

The sale of individual non-current assets classified as held for sale gave rise to income of €25 million in 2023, which was recognized under other net operating income.

» 62 Deposits from banks

€ million	Repayable on demand		With agreed maturity or notice period		Total	
	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022
Domestic banks	**48,289**	46,067	**109,078**	124,645	**157,367**	170,712
Affiliated banks	44,407	41,487	27,644	33,705	72,052	75,192
Other banks	3,881	4,580	81,434	90,940	85,315	95,520
Foreign banks	**9,219**	7,093	**7,995**	8,983	**17,214**	16,075
Total	**57,507**	**53,160**	**117,073**	**133,628**	**174,580**	**186,787**

The following table shows the breakdown of deposits from banks by type of business:

€ million	Dec. 31, 2023	Dec. 31, 2022
Home savings deposits	433	1,275
Money market deposits	42,945	53,584
Other deposits	131,203	131,928
Total	**174,580**	**186,787**

» 63 Deposits from customers

€ million	Repayable on demand		With agreed maturity or notice period		Total	
	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022
Domestic customers	38,660	30,418	97,628	99,261	136,288	129,679
Foreign customers	19,529	17,265	3,824	12,485	23,354	29,750
Total	**58,189**	**47,682**	**101,452**	**111,747**	**159,641**	**159,429**

The following table shows the breakdown of deposits from customers by type of business:

€ million	Dec. 31, 2023	Dec. 31, 2022
Home savings deposits	63,702	66,310
Money market deposits	41,612	37,246
Other deposits	54,327	55,873
Total	**159,641**	**159,429**

» 64 Debt certificates issued including bonds

€ million	Dec. 31, 2023	Dec. 31, 2022
Bonds issued	**88,011**	**68,271**
Mortgage Pfandbriefe	31,859	28,968
Public-sector Pfandbriefe	1,696	1,232
Other bonds	54,457	38,071
Other debt certificates issued	**15,757**	**14,077**
Total	**103,768**	**82,349**

As was also the case a year earlier, all other debt certificates issued are commercial paper.

» 65 Hedging instruments (negative fair values)

Hedging instruments (negative fair values) amounted to €624 million (December 31, 2022: €442 million) and resulted solely from derivatives used as fair value hedges.

» 66 Financial liabilities held for trading

€ million	Dec. 31, 2023	Dec. 31, 2022
DERIVATIVES (NEGATIVE FAIR VALUES)	**17,131**	**26,641**
Interest-linked contracts	13,687	21,217
Currency-linked contracts	1,897	3,148
Share-/index-linked contracts	1,362	1,899
Other contracts	112	270
Credit derivatives	73	107
SHORT POSITIONS	**701**	**1,017**
BONDS ISSUED	**20,836**	**20,014**
DEPOSITS	**9,007**	**4,806**
of which from affiliated banks	3,688	3,705
of which from other banks	4,943	954
Money market deposits	**8,854**	**4,652**
from banks	8,571	4,592
from customers	284	60
Promissory notes and registered bonds issued	**153**	**155**
to banks	60	68
to customers	93	87
Total	**47,675**	**52,478**

As was also the case a year earlier, bonds issued mainly comprise share certificates and index-linked certificates.

» 67 Provisions

€ million	Dec. 31, 2023	Dec. 31, 2022
Provisions for employee benefits	**1,508**	**1,356**
Provisions for defined benefit plans	1,045	922
Provisions for other long-term employee benefits	213	200
of which for semi-retirement schemes	79	72
Provisions for termination benefits	221	206
of which for early retirement schemes	26	26
of which for restructuring	156	135
Provisions for short-term employee benefits	29	28
Provisions for share-based payment transactions	**58**	**51**
Other provisions	**1,669**	**1,841**
Provisions for onerous contracts	10	30
Provisions for restructuring	31	16
Provisions for loan commitments	138	147
Provisions for financial guarantee contracts	105	89
Other provisions for loans and advances	52	51
Provisions relating to building society operations	913	1,053
Residual provisions	420	455
Total	**3,235**	**3,248**

The underlying discount rate used to measure the defined benefit obligations fell from 3.70 percent as at December 31, 2022 to 3.20 percent as at December 31, 2023. The assumptions about salary and annuity trends were unchanged compared with December 31, 2022.

Other provisions

The following table shows the changes in other provisions in 2023:

€ million	Provisions for onerous contracts	Provisions for restruc-turing	Provisions for loan commit-ments	Provisions for financial guarantee contracts	Other provisions for loans and advances	Provisions relating to building society operations	Residual provisions	**Total**
Balance as at Jan. 1, 2023	30	16	147	89	51	1,053	455	1,841
Additions	8	29	266	102	17	223	311	**955**
Utilizations	-	-8	-	-	-	-360	-256	**-623**
Reversals	-29	-4	-275	-87	-19	-2	-92	**-509**
Interest expense/changes in discount rate	1	-	1	1	3	-	1	**7**
Other changes	-	-2	-1	-	1	-	1	**-2**
Balance as at Dec. 31, 2023	**10**	**31**	**138**	**105**	**52**	**913**	**420**	**1,669**

The provisions of €72 million for litigation risk that had been included in residual provisions as at December 31, 2022 were largely reversed in the year under review. An amount of €13 million was utilized. The residual provisions continue to include provisions of €111 million for pre-litigation risks in connection with the lending business and building society operations (December 31, 2022: €113 million). The other disclosures required under IAS 37 are not provided because it is likely that such disclosures would seriously harm the outcome of the legal disputes.

The expected maturities of other provisions are shown in the tables below.

AS AT DECEMBER 31, 2023

€ million	≤ 3 months	> 3 months – 1 year	> 1 year – 5 years	> 5 years	Indefinite
Provisions for onerous contracts	-	-	-	10	-
Provisions for restructuring	-	7	24	-	-
Provisions for loan commitments	19	16	57	41	5
Provisions for financial guarantee contracts	15	11	53	26	-
Other provisions for loans and advances	1	1	50	-	-
Provisions relating to building society operations	4	266	490	153	-
Residual provisions	84	181	52	94	9
Total	**123**	**482**	**726**	**324**	**14**

AS AT DECEMBER 31, 2022

€ million	≤ 3 months	> 3 months – 1 year	> 1 year – 5 years	> 5 years	Indefinite
Provisions for onerous contracts	-	-	-	30	-
Provisions for restructuring	2	14	1	-	-
Provisions for loan commitments	19	10	74	38	5
Provisions for financial guarantee contracts	17	12	37	23	-
Other provisions for loans and advances	-	44	5	1	-
Provisions relating to building society operations	5	280	482	286	-
Residual provisions	103	154	124	67	8
Total	**146**	**514**	**722**	**446**	**13**

The changes in loss allowances recognized under provisions for loan commitments and provisions for financial guarantee contracts were as follows:

	Loss allowances for loan commitments				**Loss allowances for financial guarantee contracts**			**Total**
€ million	Stage 1	Stage 2	Stage 3	POCI assets	Stage 1	Stage 2	Stage 3	
Balance as at Jan. 1, 2022	56	31	38	1	7	9	72	213
Additions	97	115	65	7	9	25	67	385
Reversals	-108	-71	-77	-8	-9	-11	-72	-356
Other changes	2	-1	1	-	-1	-1	-5	-5
Balance as at Dec. 31, 2022	46	74	27	-	6	21	62	236
Additions	90	123	51	2	12	28	61	367
Reversals	-113	-101	-59	-2	-11	-21	-55	-362
Other changes	23	-28	5	-	-	-11	12	1
Balance as at Dec. 31, 2023	**46**	**68**	**24**	**-**	**8**	**17**	**80**	**242**

» 68 Insurance contract liabilities

€ million	**Dec. 31, 2023**	Dec. 31, 2022
Insurance contract liabilities	**105,150**	98,328
Liability for remaining coverage	93,033	86,740
Liability for incurred claims	12,117	11,587
Reinsurance contract liabilities	**1**	-
Liability for remaining coverage	2	1
Total	**105,151**	**98,328**

» 69 Other liabilities

€ million	Dec. 31, 2023	Dec. 31, 2022
Other liabilities of insurance companies	5,620	5,534
Accruals	1,518	1,485
Other payables	250	221
Lease liabilities	576	637
Residual other liabilities	907	1,083
Total	**8,872**	**8,960**

Residual other liabilities included initial margins from client clearing of €489 million (December 31, 2022: €764 million).

The table below gives a breakdown of insurance companies' other liabilities.

€ million	Dec. 31, 2023	Dec. 31, 2022
Other provisions	**394**	**354**
Provisions for employee benefits	344	311
of which provisions for defined benefit plans	125	119
Provisions for share-based payment transactions	4	3
Other provisions	46	39
Payables and residual other liabilities	**5,226**	**5,180**
Subordinated capital	100	90
Deposits received from reinsurers	6	24
Payables arising out of direct insurance operations	340	305
Payables arising out of reinsurance operations	8	61
Debt certificates issued including bonds	39	36
Deposits from banks	431	413
Derivatives (negative fair values)	44	223
Liabilities from investment contracts	3,145	2,932
Insurance lease liabilities	75	80
Other payables	345	329
Residual other liabilities	694	686
Total	**5,620**	**5,534**

» 70 Subordinated capital

€ million	Dec. 31, 2023	Dec. 31, 2022
Subordinated liabilities	4,257	4,510
Share capital repayable on demand	5	12
Total	**4,261**	**4,521**

» 71 Equity

Subscribed capital

The subscribed capital of DZ BANK consists of 1,791,344,757 registered non-par-value shares each with an imputed value of €2.75. All shares in issue are fully paid-up.

For the 2022 financial year, DZ BANK paid a dividend of €0.20 per share in 2023 on the basis of a resolution of the Extraordinary General Meeting on October 19, 2023. In 2022, DZ BANK had paid a dividend of €0.20 per share on the basis of a resolution of the Annual General Meeting on May 25, 2022. A dividend of €0.25 per share for 2023 will be proposed to the Annual General Meeting.

Authorized capital

The Board of Managing Directors of DZ BANK is authorized, subject to the approval of the Supervisory Board, to increase the share capital by June 30, 2026 on one or more occasions by up to a total of €200 million by way of issuing new registered non-par-value shares in return for cash or non-cash contributions. The Board of Managing Directors is authorized, subject to the approval of the Supervisory Board, to exclude the subscription right of shareholders both in the case of capital increases in return for non-cash contributions and in the case of capital increases in return for cash contributions if the capital is increased for the purpose of
- issuing new shares to employees of the corporation (employee shares),
- acquiring companies, equity investments in companies or for granting equity investments in the corporation in order to back strategic partnerships.

The Board of Managing Directors is also authorized, subject to the approval of the Supervisory Board, to exclude fractions from the subscription right of shareholders (‘Authorized Capital I’).

The Board of Managing Directors is authorized, subject to the approval of the Supervisory Board, to increase the share capital by June 30, 2026 on one or more occasions by up to a total of €600 million by issuing new registered non-par-value shares in return for cash contributions. The Board of Managing Directors is authorized, subject to the approval of the Supervisory Board, to exclude fractions from the subscription right of shareholders (‘Authorized Capital II’).

The new shares issued on the basis of utilizing Authorized Capital I or Authorized Capital II can also be acquired by credit institutions determined by the Board of Managing Directors if aforesaid credit institutions agree to offer said shares to the shareholders (indirect subscription right).

The Board of Managing Directors did not make use of any of this authorized action in 2023.

Disclosures on shareholders

At the end of 2023, 99.5 percent of shares were held by cooperative enterprises (December 31, 2022: 99.5 percent). These cooperative enterprises include the cooperative banks and other legal entities and trading companies economically associated with the cooperative movement or cooperative housing sector.

Capital reserve

The capital reserve comprises the amounts from the issue of DZ BANK shares in excess of the imputed par value of the shares.

Retained earnings

Retained earnings comprise earned, undistributed consolidated profit together with gains and losses arising from remeasurement of defined benefit plans after taking into account deferred taxes. Cumulative gains and losses arising from remeasurement of defined benefit plans amounted to a loss of €537 million (December 31, 2022: loss of €443 million).

Reserve from other comprehensive income

Reserve from equity instruments for which the fair value OCI option has been exercised

The reserve from equity instruments for which the fair value OCI option has been applied is used to report the changes in the fair value of equity instruments measured at fair value through other comprehensive income after taking into account deferred taxes. If the equity instruments are sold, the related reserve is reclassified to retained earnings.

Reserve from gains and losses on financial liabilities for which the fair value option has been exercised, attributable to changes in own credit risk

The portion of the changes in fair value of financial liabilities designated as at fair value through profit or loss attributable to changes in the DZ BANK Group’s own credit risk is also recognized in the reserve from other comprehensive income. If the liabilities are derecognized, the cumulative gains and losses recognized through other comprehensive income are reclassified to retained earnings.

Reserve from debt instruments measured at fair value through other comprehensive income

The reserve from debt instruments measured at fair value through other comprehensive income is used to report the changes in fair value after taking into account deferred taxes. In the case of debt instruments, gains and losses are only recognized in profit or loss when the relevant asset is sold. Loss allowances are recognized for these assets in accordance with IFRS 9.

Currency translation reserve

The currency translation reserve is the result of the translation of financial statements of subsidiaries denominated in foreign currency into euros (the group reporting currency). It also includes the gains and losses on hedges of net investments in foreign operations and the change in the currency translation reserve for entities accounted for using the equity method. At the end of 2023, an amount of minus €19 million was attributable to the currency translation reserve for disposal groups not qualifying as discontinued operations that are classified as held for sale (December 31, 2022: no amount).

Reserve for insurance contracts measured at fair value through other comprehensive income

The reserve for insurance contracts measured at fair value through other comprehensive income contains the cumulative insurance finance income or expenses that are recognized in other comprehensive income taking deferred taxes into account.

Additional equity components

Additional Tier 1 notes

In 2023, DZ BANK issued a tranche of additional Tier 1 notes (AT1 bonds) with a total volume of €1,143 million.

The AT1 bonds are split into 3 types depending on their interest-rate arrangements (types A to C). Type A has a variable interest rate, whereas types B and C have fixed interest rates. At the end of the fixed-interest period, type B is aligned with the variable interest rate attaching to type A. In the case of type C, a new interest rate will be fixed every 5 years. Interest is payable annually. The date for the payment of interest has been specified as August 1 each year.

In previous years, DZ BANK had issued tranches of AT1 bonds in 2 placements with a total volume of €2,150 million. In both placements, the AT1 bonds are split into 4 types depending on their interest-rate arrangements (types A to D). All interest is payable annually; the date for the payment of interest has been specified as August 1 each year in both placements.

Under the terms and conditions of the bonds, interest payments are at the discretion of the issuer. However, the interest payments may be canceled, either wholly or in part, depending on the items eligible for distribution or by order of the competent supervisory authority. Interest payments are not cumulative; canceled or reduced payments will not be made up in subsequent periods.

The bonds do not have any maturity date and are subject to the terms and conditions set out in the relevant prospectus. Among other things, the terms and conditions specify that DZ BANK may only call the bonds in their entirety, and not in part, provided that there are certain regulatory or tax reasons for doing so. In all instances, DZ BANK must obtain the consent of the competent supervisory authority in order to call the bonds.

The tranches of AT1 bonds issued are shown in the 'Additional equity components' sub-item. According to the provisions of IAS 32, the AT1 bonds have characteristics of equity. The AT1 bonds are unsecured, subordinated bearer bonds of DZ BANK.

Non-controlling interests

Non-controlling interests comprise the equity of subsidiaries not attributable to DZ BANK.

Breakdown of changes in equity by component of other comprehensive income

2023

€ million	Equity earned by the group	Reserve from other compre-hensive income	Non-controlling interests
Gains and losses on debt instruments measured at fair value through other comprehensive income	-	2,900	319
Exchange differences on currency translation of foreign operations	-	-10	3
Insurance finance income or expenses included in other comprehensive income	-	-2,384	-254
Gains and losses on equity instruments for which the fair value OCI option has been exercised	-	-118	-
Gains and losses in relation to financial liabilities for which the fair value option has been exercised, attributable to changes in own credit risk	-	206	-
Gains and losses arising from remeasurement of defined benefit plans	-94	-	-4
Share of other comprehensive income/loss of joint ventures and associates accounted for using the equity method	-	-8	-
Other comprehensive income/loss	**-94**	**586**	**64**

2022

€ million	Equity earned by the group	Reserve from other compre-hensive income	Non-controlling interests
Gains and losses on debt instruments measured at fair value through other comprehensive income	-	-14,171	-1,477
Exchange differences on currency translation of foreign operations	-	17	-4
Insurance finance income or expenses included in other comprehensive income	-	11,539	1,200
Gains and losses on equity instruments for which the fair value OCI option has been exercised	-	-396	-49
Gains and losses in relation to financial liabilities for which the fair value option has been exercised, attributable to changes in own credit risk	-	119	-
Gains and losses arising from remeasurement of defined benefit plans	279	-	13
Share of other comprehensive income/loss of joint ventures and associates accounted for using the equity method	-	1	-
Other comprehensive income/loss	**279**	**-2,892**	**-316**

The table below shows a breakdown of the reserve from other comprehensive income:

	Items not reclassified to the income statement		Items reclassified to the income statement		
€ million	Reserve from equity instruments for which the fair value OCI option has been exercised	Reserve from gains and losses on financial liabilities for which the fair value option has been exercised, attributable to changes in own credit risk	Reserve from debt instruments measured at fair value through other compre-hensive income	Currency translation reserve	Reserve for insurance contracts measured at fair value through other compre-hensive income
Equity as at Jan. 1, 2022	621	-54	1,025	58	-
Restatements according to IAS 8	572	-	2,357	3	-2,754
Equity restated as at Jan. 1, 2022	1,193	-54	3,382	61	-2,754
Other comprehensive income/loss	-396	119	-14,171	18	11,539
Total comprehensive income/loss	**-396**	**119**	**-14,171**	**18**	**11,539**
Changes in scope of consolidation	4	-	-	1	-
Acquisition/disposal of non-controlling interests	-	-	3	-	-
Reclassifications within equity	-111	-6	-	-	-
Equity as at Dec. 31, 2022	**690**	**59**	**-10,786**	**80**	**8,785**
Other comprehensive income/loss	-118	206	2,900	-18	-2,384
Total comprehensive income/loss	**-118**	**206**	**2,900**	**-18**	**-2,384**
Acquisition/disposal of non-controlling interests	-	-	-4	-	4
Reclassifications within equity	-59	1	-	-	-
Equity as at Dec. 31, 2023	**514**	**267**	**-7,889**	**62**	**6,405**

The changes in loss allowances included in the reserve from other comprehensive income, broken down by individual balance sheet item, were as follows:

	Loans and advances to customers		Investments			Investments held by insurance companies			Total
€ million	Stage 1	Stage 2	Stage 1	Stage 2	Stage 3	Stage 1	Stage 2	Stage 3	
Balance as at Jan. 1, 2022	-	-	7	-	24	19	2	1	53
Restatements according to IAS 8	-	-	-	-	-	22	6	-	27
Balance restated as at Jan. 1, 2022	-	-	7	-	24	40	8	1	81
Additions	-	-	6	1	-	28	35	4	74
Utilizations	-	-	-	-	-	-	-	-4	-4
Reversals	-	-	-7	-	-	-40	-17	-	-65
Other changes	-	-	-	-	-	5	-9	-	-4
Balance as at Dec. 31, 2022	-	-	7	-	24	34	17	1	83
Additions	1	1	11	3	2	17	55	29	118
Utilizations	-	-	-	-	-	-	-	-6	-6
Reversals	-1	-1	-7	-1	-	-32	-8	-	-49
Other changes	-	-	-1	-	-1	13	-29	-10	-30
Balance as at Dec. 31, 2023	**-**	**-**	**9**	**2**	**25**	**31**	**35**	**13**	**115**

Information on regulatory capital

The information on regulatory capital and on capital management pursuant to IAS 1.134-136, which also forms part of these IFRS consolidated financial statements, can be found in chapter VII.7 ‘Capital adequacy’ of the risk report in the group management report.

E Financial instruments and fair value disclosures

» 72 Classes, categories, and fair values of financial instruments

The following tables show the breakdown of net carrying amounts and fair values of financial assets and financial liabilities by class (in accordance with IFRS 7) and by category of financial instrument (in accordance with IFRS 9):

€ million	Dec. 31, 2023 Carrying amount	Dec. 31, 2023 Fair value	Dec. 31, 2022 Carrying amount	Dec. 31, 2022 Fair value
FINANCIAL ASSETS MEASURED AT FAIR VALUE	**188,770**	**188,785**	**187,855**	**187,870**
Financial assets measured at fair value through profit or loss	**75,149**	**75,164**	**85,556**	**85,571**
Financial assets mandatorily measured at fair value through profit or loss	***70,134***	***70,149***	***80,128***	***80,142***
Loans and advances to customers	221	221	192	192
Hedging instruments (positive fair values)	923	923	1,568	1,568
Financial assets held for trading	34,961	34,975	48,909	48,923
Investments	3,385	3,385	2,489	2,489
Investments held by insurance companies	30,644	30,644	26,970	26,970
Financial assets designated as at fair value through profit or loss	***5,015***	***5,015***	***5,428***	***5,428***
Loans and advances to banks	1,202	1,202	1,340	1,340
Loans and advances to customers	613	613	753	753
Investments	3,200	3,200	3,336	3,336
Financial assets measured at fair value through other comprehensive income	**113,573**	**113,573**	**102,280**	**102,280**
Financial assets mandatorily measured at fair value through other comprehensive income	***108,080***	***108,080***	***95,861***	***95,861***
Loans and advances to banks	31	31	55	55
Loans and advances to customers	2,115	2,115	2,070	2,070
Investments	30,169	30,169	25,244	25,244
Investments held by insurance companies	75,765	75,765	68,492	68,492
Financial assets designated as at fair value through other comprehensive income	***5,493***	***5,493***	***6,419***	***6,419***
Investments	394	394	504	504
Investments held by insurance companies	5,099	5,099	5,916	5,916
Non-current assets and disposal groups classified as held for sale	**48**	**48**	**19**	**19**
FINANCIAL ASSETS MEASURED AT AMORTIZED COST	**440,080**	**428,109**	**422,802**	**401,048**
Cash and cash equivalents	101,463	101,462	93,405	93,400
Loans and advances to banks	127,591	122,965	121,994	111,969
Loans and advances to customers	199,175	189,565	198,125	182,465
Investments	10,362	10,288	11,354	11,129
Investments held by insurance companies	154	193	85	73
Other assets	2,043	2,043	2,011	2,011
Fair value changes of the hedged items in portfolio hedges of interest-rate risk	-2,389		-4,173	
Non-current assets and disposal groups classified as held for sale	1,680	1,592	-	-
FINANCE LEASES	**456**	**447**	**552**	**555**
Loans and advances to customers	456	447	552	555
Non-current assets and disposal groups classified as held for sale	1	1	-	-

€ million	Dec. 31, 2023 Carrying amount	Fair value	Dec. 31, 2022 Carrying amount	Fair value
FINANCIAL LIABILITIES MEASURED AT FAIR VALUE	**78,663**	**78,591**	**80,798**	**80,711**
Financial liabilities mandatorily measured at fair value through profit or loss	**50,554**	**50,515**	**55,185**	**55,111**
Hedging instruments (negative fair values)	624	624	442	442
Financial liabilities held for trading	47,675	47,636	52,478	52,404
Other liabilities	2,256	2,256	2,266	2,266
Financial liabilities designated as at fair value through profit or loss	**28,109**	**28,076**	**25,612**	**25,600**
Deposits from banks	3,804	3,804	3,888	3,887
Deposits from customers	7,420	7,399	6,089	6,081
Debt certificates issued including bonds	16,885	16,872	15,565	15,562
Subordinated capital	-	-	69	69
FINANCIAL LIABILITIES MEASURED AT AMORTIZED COST	**417,111**	**409,333**	**408,306**	**392,653**
Deposits from banks	170,776	167,289	182,899	173,934
Deposits from customers	152,222	150,921	153,339	151,400
Debt certificates issued including bonds	86,883	83,583	66,783	61,413
Other liabilities	2,098	2,098	1,979	1,979
Subordinated capital	4,261	3,933	4,452	3,928
Fair value changes of the hedged items in portfolio hedges of interest-rate risk	-634		-1,147	
Liabilities included in disposal groups classified as held for sale	1,505	1,509	-	-
LEASES	**664**	**664**	**717**	**717**
Other liabilities	652	652	717	717
Liabilities included in disposal groups classified as held for sale	12	12	-	-
FINANCIAL GUARANTEE CONTRACTS AND LOAN COMMITMENTS	**242**	**585**	**236**	**780**
Financial guarantee contracts	**105**	**105**	**89**	**89**
Provisions	105	105	89	89
Loan commitments	**138**	**480**	**147**	**691**
Provisions	138	480	147	691

There is no active market with quoted prices pursuant to IFRS 13.76 for home savings loans, home savings deposits, or similar assets and liabilities. The specific features of a home savings product also mean that there is currently no suitable method for calculating fair value in accordance with IFRS 13. The home savings contracts cannot be measured individually because the allocation of home savings loans depends on the overall performance of the collective building society operations (allocation assets) and thus, in particular, on the performance of the home savings deposits (link to the collective). Consequently, the financial assets and financial liabilities resulting from collective building society operations are shown only at their carrying amounts in the table above.

Building society simulation models are used to calculate risk-bearing capacity and for regulatory purposes. These models have been updated in line with the increased requirements imposed by the banking supervisor in recent years. Statistical parameters, empirical values, and current market assessments are used in the models. The present value of the expected future cash flows from the collective contracts in force, less cost components and risk margins, is compared with the balance of the carrying amounts from building society operations below. The balance of the carrying amounts from building society operations amounted to an excess of liabilities and stood at minus €60,338 million (December 31, 2022: minus €64,430 million), whereas the collective present value came to minus €52,854 million (December 31, 2022: minus €54,469 million).

The differences between the carrying amount and the fair value of financial assets held for trading, financial liabilities held for trading, deposits from banks, deposits from customers, and debt certificates issued including bonds in the 'financial assets measured at fair value' and 'financial liabilities measured at fair value' classes are due to the deferral of day-one profit or loss, which is based on unobservable valuation parameters.

» 73 Differences not recognized at the time of initial recognition

Differences that are not recognized at the time of initial recognition of financial instruments (day-one profit or loss) arise if the fair value of a financial instrument differs from its transaction price at the time of initial recognition and the calculation of the fair value is not substantiated by a price quoted in an active market for an identical asset or identical liability or is not based on a valuation technique that only uses data from observable markets. Such transactions are initially recognized at fair value on the balance sheet, plus the unrecognized day-one profit or loss. This unrecognized difference is amortized to profit or loss over the maturity period or at the time that all parameters factored into the valuation models are observable.

The following table shows the deferred day-one profit or loss that has not yet been amortized to profit or loss, broken down by class pursuant to IFRS 7.

	Measured at fair value	
€ million	Financial assets	Financial liabilities
Balance as at Jan. 1, 2022	57	14
Additions as a result of transactions	8	41
Differences amortized to profit or loss	-6	-12
Reclassifications	-44	44
Balance as at Dec. 31, 2022	14	87
Additions as a result of transactions	25	67
Differences amortized to profit or loss	-28	-79
Reclassifications	3	-3
Balance as at Dec. 31, 2023	**15**	**72**

» 74 Equity instruments designated as at fair value through other comprehensive income

Investments and investments held by insurance companies include shares and other variable-yield securities and investments in subsidiaries, joint ventures, and associates that the DZ BANK Group has elected to measure at fair value through other comprehensive income. These investments and investments held by insurance companies are not held for trading or to generate returns. The DZ BANK Group believes that it would be inappropriate to report gains and losses in profit or loss in this case.

€ million	**Dec. 31, 2023**	**Dec. 31, 2022**
Investments	**394**	**504**
Shares and other variable-yield securities	324	408
Investments in subsidiaries	65	89
Investments in joint ventures	-	2
Investments in associates	6	5
Investments held by insurance companies	**5,099**	**5,916**
Shares and other variable-yield securities	4,657	5,477
Investments in subsidiaries	425	419
Investments in joint ventures	16	19
Investments in associates	-	1
Total	**5,493**	**6,419**

In 2023, dividends of €46 million (2022: €69 million) were recognized in respect of equity instruments designated as at fair value through other comprehensive income that were held as at the balance sheet date.

Equity instruments designated as at fair value through other comprehensive income with a carrying amount of €2,152 million (December 31, 2022: €2,077 million) were derecognized in 2023. The derecognition of these investments was attributable to capital repayments, liquidations, and disposals. No further current gains or losses are expected from these assets. These derecognitions resulted in cumulative net gains of €235 million (2022: €53 million), which were reclassified to retained earnings. Dividends of €115 million (2022:

€149 million) were recognized in respect of equity instruments designated as at fair value through other comprehensive income that were sold in 2023.

» 75 Assets and liabilities measured at fair value on the balance sheet

Fair value hierarchy

The fair value measurements are assigned to the levels of the fair value hierarchy as follows:

€ million	Level 1		Level 2		Level 3	
	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022
Assets	**86,356**	69,475	**68,911**	94,824	**33,518**	23,570
Loans and advances to banks	-	-	1,232	1,395	-	-
Loans and advances to customers	-	-	2,309	2,419	641	596
Hedging instruments (positive fair values)	-	-	918	1,568	5	-
Financial assets held for trading	5,870	1,394	27,368	46,906	1,737	623
Investments	23,171	13,020	11,536	16,567	2,442	1,985
Investments held by insurance companies	57,267	55,061	25,549	25,951	28,692	20,366
Non-current assets and disposal groups classified as held for sale	48	-	-	19	-	-
Liabilities	**623**	3,059	**76,664**	77,080	**1,304**	572
Deposits from banks	-	-	3,804	3,887	-	-
Deposits from customers	-	-	7,109	6,081	290	-
Debt certificates issued including bonds	-	2,987	16,363	12,170	510	404
Hedging instruments (negative fair values)	-	-	624	442	-	-
Financial liabilities held for trading	617	51	46,514	52,255	505	98
Other liabilities	6	21	2,250	2,245	-	-
Subordinated capital	-	-	-	-	-	69

The investments held by insurance companies measured at fair value include assets related to unit-linked contracts. These are offset within insurance contract liabilities by financial liabilities that arise from unit-linked insurance products and are measured using the variable fee approach under IFRS 17, and within other liabilities by liabilities measured at fair value from investment contracts that are allocated to unit-linked life insurance.

Transfers

Assets and liabilities held at the balance sheet date and measured at fair value on a recurring basis were transferred as follows between Levels 1 and 2 of the fair value hierarchy:

€ million	Transfers from Level 1 to Level 2		Transfers from Level 2 to Level 1	
	2023	2022	2023	2022
Financial assets measured at fair value	**10,219**	2,220	**18,071**	760
Financial assets held for trading	2,117	516	6,629	-
Investments	2,670	22	10,041	35
Investments held by insurance companies	5,432	1,682	1,356	725
Non-current assets and disposal groups classified as held for sale	-	-	45	-
Financial liabilities measured at fair value	**2,526**	1,027	**237**	-
Debt certificates issued including bonds	2,520	-	-	-
Financial liabilities held for trading	6	1,027	237	-

Transfers from Level 1 to Level 2 were due to quoted prices no longer being obtainable in active markets for identical assets or liabilities. Transfers from Level 2 to Level 1 were due to the availability of quoted prices in active markets that had previously not existed.

In the DZ BANK Group, transfers between Levels 1 and 2 take place when there is a change in the inputs that is relevant to categorization in the fair value hierarchy.

Fair value measurements within Levels 2 and 3

Fair value measurements within Level 2 of the fair value hierarchy either use prices available in active markets for similar, but not identical, financial instruments or use valuation techniques largely based on observable market data. If valuation techniques are used that include a material valuation parameter that is not observable in the market, the relevant fair value measurements are categorized within Level 3 of the fair value hierarchy.

Generally, the discounted cash flow (DCF) method is used in the model-based measurement of the fair value of financial instruments without optionalities. Modeling of the yield curves is based on a multi-curve approach with collateral discounting. Simple products on which options exist are measured using customary standard models in which the inputs are quoted in active markets. For structured products on which options exist, a wide range of standard valuation techniques are used. Valuation models are calibrated to available market prices and validated regularly. The fair values of structured products can be measured by breaking these products into their constituent parts, which are then measured using the valuation methods described below.

The basis for measurement is the selection of an adequate yield curve for each specific instrument. The measurement is carried out by selecting appropriate tenor-specific forward curves for projecting variable cash flows. The nature and collateralization of the transactions determines how they are discounted using yield curves that can be adjusted on the basis of relevant spreads.

Prices in active markets are used (provided these prices are available) for the fair value measurement of loans and advances as well as unstructured bonds. Otherwise, the DCF method is mainly used. Discounting is based on yield curves that are adjusted for liquidity-related and credit rating-related costs using spreads. Product-dependent funding spreads are added to the yield curve for liabilities attributable to registered creditors, debt certificates issued including bonds, and subordinated capital. Debt instruments held are adjusted using issuer-specific spreads or spreads derived from the issuer's internal and external credit rating, sector, and risk category. Customer-appropriate spreads and collateralization rates are taken into account for the measurement of loans when the DCF method is used. If material unobservable inputs are used for measurement and there are no indications that the transaction price is not identical to the fair value at the time of first-time recognition on the balance sheet, the valuation method is calibrated in such a way that the model price at the time of acquisition corresponds to the transaction price. In exceptional cases, the nominal amount of the debt instrument in question provides the best evidence of fair value.

The fair value measurement of shares and other variable-yield securities and of other shareholdings is determined by applying income capitalization approaches and observing transaction prices. The best indicator of fair value is deemed to be the transaction prices for recent transactions involving the relevant financial instruments, provided there have been any such transactions. Otherwise, the fair value is measured using income capitalization approaches in which future income and dividends – calculated on the basis of forecasts and estimates – are discounted, taking risk parameters into account.

The fair value measurement of investment fund units is determined using the pro rata net asset value. This is adjusted for any outstanding performance-related remuneration entitlements of fund managers; risk adjustments are also taken into account. Some investments in real estate companies are also measured at net asset value. In this case, the liabilities are subtracted from the fair values of the real estate tied up in the company and the result is multiplied by the percentage of shareholding. The prices of units in real estate funds that are not managed by the DZ BANK Group are provided by the asset management company that manages these funds. These units are measured regularly at net asset value. Fair value measurement is also based on valuations, current values, and prices in recent transactions.

The fair value measurement of standardized derivatives traded in liquid markets is based on observable market prices and/or industry-standard models using observable inputs. To discount the cash flows of derivatives, a distinction is made between non-collateralized and collateralized transactions when using yield curves in order to take into account the specific funding costs. Moreover, calculation of the model prices for products on which options exist mostly requires the input of additional market data (e.g. volatilities, correlations, repo rates). As far as possible, this data is derived implicitly from quoted market prices that are available. If observable quoted market prices are not available, or only available to a limited extent, the DZ BANK Group uses customary interpolation and extrapolation mechanisms, historical time series analyses, and fundamentals analyses of economic variables to generate the required inputs. It also uses expert assessments on a small scale.

The fair value measurement of OTC financial derivatives applies the option in IFRS 13.48, which enables the total net amount to be measured. In the first step, credit risk is not taken into account. Next, counterparty-specific credit risk arising from derivatives is recognized after the total net amount has been determined. Credit valuation adjustments (CVAs) are recognized to take into account counterparty credit risk and debt valuation adjustments (DVAs) are recognized to take into account the group’s own credit risk. Their measurement also takes account of collateral and uses market-implied parameters with matching maturities or internal parameters with matching maturities for the probability of default and loss given default.

The measurement of financial instruments also involves carrying out measurement adjustments to a suitable degree. These include, among other things, model reserves that enable uncertainties regarding model selection, model parameters, and model configuration to be taken into account. The DZ BANK Group measures financial instruments at the price at which these financial instruments can be realized in the market. If this differs from the measurement of the individual instruments (e.g. measurement at middle rates), the bid/ask adjustments (close-out reserves) are determined on a net basis applying the option in IFRS 13.48. Measurement takes account of the group’s funding structure.

If the value of the financial instruments is based on unobservable inputs and they are thus assigned to Level 3 of the fair value hierarchy, the exact value of these inputs can be determined as at the balance sheet date from a range of appropriate possible alternatives. Determining the value for the inputs from a range has an impact on the fair value recognized. The following disclosures explain the material unobservable input categories (known as risk categories) for Level 3 financial instruments. These categories are factored into the significance analysis. Their areas of application are also shown below.

The method for assessing the observability of inputs was refined in 2023. In respect of financial instruments with unrecognized day-one profit or loss at the time of initial recognition, the resulting change of estimate led to the amortization to profit or loss of the day-one profit or loss previously deferred of €41 million. The resulting change of estimate also led to transfers between the levels of the fair value hierarchy. Furthermore, the fair value measurement of investment funds that are not traded in active markets has no longer factored in a liquidity markdown since the second half of 2023. This change of estimate resulted in income of €7 million. The method for determining the funding valuation adjustment for the fair value measurement of unsecured derivatives was refined as at December 31, 2023. The resulting change of estimate led to an expense of €44 million.

Risk categories

ABS spreads
ABS spreads encompass ABS spread curves derived from sector, rating, or expert assessments. These curves are used, for example, to measure ABSs and other structured bonds. The presentation of the sensitivities to ABS spreads relates to a shift of plus 1 basis point.

Probability of default
Probability of default describes a banking regulation-related risk parameter used to measure credit risk. The probability of default of a borrower, issuer, or counterparty is the probability that the borrower, issuer, or counterparty will not be able to meet its payment obligations or other contractual obligations in the future. The presentation of the sensitivities to probability of default relates to a shift of plus 1 basis point.

Bond spreads
Bond spreads contain both credit rating-related and issuer-related spread curves for corporates and governments. Also in this category are benchmark bond spread curves that, for example, are factored into the measurement of issues, bonds, promissory notes, bond futures, and bond options. The presentation of the sensitivities to bond spreads relates to a shift of plus 1 basis point.

Credit default swap spreads (CDS spreads)
CDS spreads encompass credit default swap spreads for corporates and governments. They are used to measure credit default swaps and are factored into the measurement of structured issues. The presentation of the sensitivities to CDS spreads relates to a shift of plus 1 basis point.

Discount rate for investments in companies
Both observable and unobservable inputs are factored into the discount rate for investments in companies. The risk-free basic interest rate is an observable input. The material unobservable inputs are the premium for market risk, the company-specific beta factor and, if applicable, a growth markdown. A sensitivity analysis is carried out at the level of the discount rate as a whole rather than at the level of the individual unobservable inputs factored into the discount rate. The presentation of the sensitivities to the discount rate for investments in companies relates to a shift of 50 basis points.

Dividend estimate
This category covers estimated future dividend yields as well as repo yields and convenience yields. The presentation of the sensitivities to dividends relates to a shift of plus 1 percent.

Duration
Duration is the unobservable, weighted average lifetime of mortgage-backed securities. The presentation of the sensitivities to duration relates to a shift of plus 1 year.

Equity prices
This category includes not only equity prices but also prices for equity indices. Equity prices are used to measure equities and derivative products based on equities, but they are also used to measure issues and profit-sharing rights. The presentation of the sensitivities to equity prices relates to a shift of plus 1 percent in relation to fair value.

Fair value adjustments

As a component of fair value, fair value adjustments must be taken into account in the significance analysis in their full absolute amount, provided they are unobservable. The absolute amount of the fair value adjustment must be disclosed as the sensitivity.

Fund prices

This category contains prices both for commodity funds and for equity funds. Fund prices are factored into the measurement of funds and issues. The presentation of the sensitivities to fund prices relates to a shift of plus 1 percent in relation to fair value.

Impairment

Impaired financial instruments are generally assigned to Level 3 of the fair value hierarchy. The absolute amount must be disclosed as the sensitivity.

Mean reversion

This category comprises the unobservable parameter 'mean reversion' in the Hull-White model, which is used to model short rates. The presentation of the sensitivities to mean reversion relates to a shift of plus 1 basis point.

Illiquid market prices

In some circumstances, depending on the liquidity of the bond spread curve, liquid market price information may not be available as at the valuation date for marked-to-market financial instruments such as bonds. Where this is the case, the financial instruments are assigned to Level 3 of the fair value hierarchy. The presentation of the sensitivities to illiquid market prices relates to a shift of plus 1 percent in relation to fair value (fair value changes by 1 percent of the current market price).

Volatilities

These include various volatilities for commodities, equities, and currencies as well as cap/floor volatilities and swaption volatilities. For the latter, particularly derivative products such as swaps and options, fly volatilities and risk reversal volatilities are also factored into the calculations. The presentation of the sensitivities to volatilities relates to a shift of plus 1 percentage point for volatilities with log-normal distribution and a shift of plus 1 basis point for volatilities with normal distribution.

Yield curves

In addition to standard yield curves, this category covers cross-currency spread curves and tenor basis spread curves as well as fixing, fund, and swap rates. Yield curves are factored into the measurement of most financial instruments. The presentation of the sensitivities to yield curves relates to a shift of plus 1 basis point.

Aggregate sensitivity

For each product type whose fair value is based on unobservable inputs and are therefore assigned to Level 3, the inputs used in the measurement of the assets and liabilities are used to determine and present an aggregate sensitivity. The aggregate sensitivity, presented in euros, provides information about the sensitivity of assets and liabilities in each class to a change in the unobservable inputs used in the measurement of this class, such inputs belonging to the risk category identified for this class. The aggregate sensitivity relates to a standardized change in the inputs in the risk category, for example relating to a change of plus 1 basis point.

For example, an aggregate sensitivity of €1 million for the ‘yield curves’ risk category means that a change of plus 10 basis points would result in an increase in fair value of €10 million for the line item.

Measurements of fair value at Level 3 as at December 31, 2023

The following table shows the valuation techniques, risk categories, sensitivity reference values, and the aggregate sensitivities used for the fair value measurements at Level 3 of the fair value hierarchy.

Class according to IFRS 13	Assets/liabilities	Fair value (€ million)	Valuation technique	Risk category	Sensitivity reference value	Aggregate sensitivity (€ million)
Loans and advances to customers	Other bank loans	18	Mark-to-model (DCF)	Probability of default	Shift of +1 basis point	-
	Other bank loans	14	Present value for which loss allowances have been recognized	Impairment	Absolute amount (impairment)	-
	Registered securities	14	Black model (simple option pricing model)	Bond spreads	Shift of +1 basis point	-
	Registered securities	405	Mark-to-model (DCF)	Fair value adjustments	Absolute amount (fair value adjustment)	4
	Other loans and advances	1	Mark-to-model (DCF)	Probability of default	Shift of +1 basis point	-
			Mark-to-model (DCF)	Yield curves	Shift of +1 basis point	-
	Other loans and advances	189	Mark-to-model (DCF)	Fair value adjustments	Absolute amount (fair value adjustment)	3
Derivatives used for hedging (positive fair values)	Derivatives	5	Mark-to-model (DCF)	Yield curves	Shift of +1 basis point	-
Financial assets held for trading	Shares	1	Mark-to-market	Equity prices	Shift of +1% in relation to fair value	-
	Bonds	35	Black model (simple option pricing model)	Bond spreads	Shift of +1 basis point	-
	Bonds	182	Mark-to-market	Illiquid market prices	Shift of +1 percentage point	1
	Bonds	74	Mark-to-model (DCF)	Fair value adjustments	Absolute amount (fair value adjustment)	-
			Black model (simple option pricing model)	Fair value adjustments	Absolute amount (fair value adjustment)	4
	Derivatives	83	Black model (simple option pricing model)	Volatilities (normal)	Shift of +1 basis point	-6
			Analytical yield curve model	Fair value adjustments	Absolute amount (fair value adjustment)	2
	Derivatives	22	Analytical yield curve model	Volatilities (normal)	Shift of +1 basis point	14
			Multi-factor yield curve model	Fair value adjustments	Absolute amount (fair value adjustment)	53
	Derivatives	508	Multi-factor yield curve model	Volatilities (normal)	Shift of +1 basis point	10
			Local volatility model	Dividend estimate	Shift of +1 basis point	-
	Derivatives	13	Local volatility model	Volatilities (log-normal)	Shift of +1 percentage point	-2
			One-factor yield curve model	Fair value adjustments	Absolute amount (fair value adjustment)	9
	Derivatives	58	One-factor yield curve model	Volatilities (normal)	Shift of +1 basis point	2
			Mark-to-model (DCF)	ABS spreads	Shift of +1 basis point	-
			Mark-to-model (DCF)	Fair value adjustments	Absolute amount (fair value adjustment)	27
	Derivatives	478	Mark-to-model (DCF)	Volatilities (log-normal)	Shift of +1 percentage point	4
	Promissory notes and registered bonds	1	Multi-factor yield curve model	Bond spreads	Shift of +1 basis point	-
	Promissory notes and registered bonds	282	Mark-to-model (DCF)	Bond spreads	Shift of +1 percentage point	-

Class according to IFRS 13	Assets/liabilities	Fair value (€ million)	Valuation technique	Risk category	Sensitivity reference value	Aggregate sensitivity (€ million)
Investments	Shares and other shareholdings	118	Income capitalization approach	Discount rate for investments in companies	Shift of +1 basis point	-
	Shares and other shareholdings	126	Mark-to-model (DCF)	Yield curves	Shift of +1 basis point	-
	Shares and other shareholdings	3	Simplified income capitalization approach			-
	Shares and other shareholdings	141	Mark-to-model (DCF)	Dividend estimate	Shift of +1 percentage point	1
	Bonds	1	Black model (simple option pricing model)	ABS spreads	Shift of +1 basis point	-
			Mark-to-market	Illiquid market prices	Shift of +1% in relation to fair value	5
	Bonds	553	Black model (simple option pricing model)	Fair value adjustments	Absolute amount (fair value adjustment)	1
			Mark-to-model (DCF)	Fair value adjustments	Absolute amount (fair value adjustment)	-
	Bonds	303	Mark-to-model (DCF)	Illiquid market prices	Shift of +1% in relation to fair value	4
	Bonds	6	Present value for which loss allowances have been recognized	Impairment	Absolute amount (impairment)	-
	Bonds	699	Mark-to-market	Illiquid market prices	Shift of +1% in relation to fair value	7
	Bonds	255	Mark-to-model (DCF)	Duration	Shift of +1 year	-7
	Bonds	12	Present value for which loss allowances have been recognized	Impairment	Absolute amount (impairment)	-
	Investments in associates	6	Income capitalization approach	Discount rate for investments in companies	Shift of +1 basis point	-
	Investments in subsidiaries	67	Income capitalization approach	Discount rate for investments in companies	Shift of +1 basis point	-
	Investments in subsidiaries	43	Simplified income capitalization approach			-
	Investments in subsidiaries	59	Mark-to-model (DCF)	Yield curves	Shift of +1 basis point	-
	Investments in subsidiaries	10	Net asset value			-
	Investment fund units	31	Mark-to-model (other)	Fund prices	Shift of +1% in relation to fair value	-
	Investment fund units	9	Net asset value			-

Class according to IFRS 13	Assets/liabilities	Fair value (€ million)	Valuation technique	Risk category	Sensitivity reference value	Aggregate sensitivity (€ million)
Investments held by insurance companies	Shares and other variable-yield securities	3	Income capitalization approach	Discount rate for investments in companies	Shift of +1 basis point	-
	Shares and other variable-yield securities	24	Valuation reports			-
	Shares and other variable-yield securities	11	Simplified income capitalization approach			-
	Shares and other variable-yield securities	5,194	Net asset value			-
	Investments in joint ventures	4	Income capitalization approach	Discount rate for investments in companies	Shift of +1 basis point	-
	Investments in joint ventures	58	Net asset value			-
	Investments in subsidiaries	276	Income capitalization approach	Discount rate for investments in companies	Shift of +1 basis point	-
	Investments in subsidiaries	1	Simplified income capitalization approach			-
	Investments in subsidiaries	418	Net asset value			-
	Fixed-income securities	1,962	Mark-to-model (DCF)	Bond spreads	Shift of +1 basis point	-2
	Fixed-income securities	485	Multi-factor yield curve model	Bond spreads	Shift of +1 basis point	-1
	Fixed-income securities	1,194	Mark-to-model (DCF)	ABS spreads	Shift of +1 basis point	-
	Fixed-income securities	3	Mark-to-market	Illiquid market prices	Shift of +1% in relation to fair value	-
	Mortgage loans	12,004	Mark-to-model (DCF)	Bond spreads	Shift of +1 basis point	-11
	Registered bonds	2,058	Mark-to-model (DCF)	Bond spreads	Shift of +1 basis point	-3
	Registered bonds	1,353	Multi-factor yield curve model	Bond spreads	Shift of +1 basis point	-3
	Promissory notes and loans	3,125	Mark-to-model (DCF)	Bond spreads	Shift of +1 basis point	-3
	Promissory notes and loans	310	Multi-factor yield curve model	Bond spreads	Shift of +1 basis point	-
	Other loans and receivables	105	Amortized cost			-
	Other loans and receivables	102	Mark-to-model (DCF)	Probability of default	Shift of +1 basis point	-
	Assets managed for third parties	1	Net asset value			-

Class according to IFRS 13	Assets/liabilities	Fair value (€ million)	Valuation technique	Risk category	Sensitivity reference value	Aggregate sensitivity (€ million)
Deposits from customers			Multi-factor yield curve model	Fair value adjustments	Absolute amount (fair value adjustment)	5
	Other deposits	180	Multi-factor yield curve model	Volatilities (normal)	Shift of +1 basis point	3
			Analytical yield curve model	Fair value adjustments	Absolute amount (fair value adjustment)	1
	Other deposits	110	Analytical yield curve model	Volatilities (normal)	Shift of +1 basis point	-6
Debt certificates issued including bonds	Other bonds	310	Mark-to-model (DCF)	Illiquid market prices	Shift of +1 percentage point	-4
	Other bonds	26	Analytical yield curve model	Fair value adjustments	Absolute amount (fair value adjustment)	-
	Other bonds	173	Multi-factor yield curve model	Fair value adjustments	Absolute amount (fair value adjustment)	4
Financial liabilities held for trading			Local volatility model	Dividend estimate	Shift of +1 basis point	-
			Local volatility model	Fair value adjustments	Absolute amount (fair value adjustment)	3
	Bonds issued, share certificates and index-linked certificates, and other debt certificates issued	116	Local volatility model	Volatilities (log-normal)	Shift of +1 percentage point	1
	Derivatives	5	Analytical yield curve model	Fair value adjustments	Absolute amount (fair value adjustment)	2
			Black model (simple option pricing model)	Fair value adjustments	Absolute amount (fair value adjustment)	6
	Derivatives	71	Black model (simple option pricing model)	Volatilities (normal)	Shift of +1 basis point	-5
			One-factor yield curve model	Fair value adjustments	Absolute amount (fair value adjustment)	2
	Derivatives	28	One-factor yield curve model	Volatilities (normal)	Shift of +1 basis point	-1
			Local volatility model	Dividend estimate	Shift of +1 basis point	-
			Local volatility model	Fair value adjustments	Absolute amount (fair value adjustment)	6
	Derivatives	131	Local volatility model	Volatilities (log-normal)	Shift of +1 percentage point	-16
			Mark-to-model (DCF)	CDS spreads	Shift of +1 basis point	-
	Derivatives	94	Mark-to-model (DCF)	Fair value adjustments	Absolute amount (fair value adjustment)	14
	Derivatives	58	Multi-factor yield curve model	Fair value adjustments	Absolute amount (fair value adjustment)	5
	Derivatives	1	One-factor yield curve model	Mean reversion	Shift of +1 basis point	-

Measurements of fair value at Level 3 as at December 31, 2022

The following table shows the valuation techniques, the unobservable inputs, and their spreads used for the fair value measurements at Level 3 of the fair value hierarchy. Due to the change in the method used to determine observability for each individual input used in the calculation of fair value, the disclosures as at December 31, 2022 are not comparable with those as at December 31, 2023.

Class according to IFRS 13	Assets/liabilities	Fair value (€ million)	Valuation technique	Unobservable inputs	Spread of unobservable inputs (%)
Loans and advances to customers	Loans	404	DCF method	BVAL price adjustment	-4.0 to 5.3
	Profit-participation certificates	25	DCF method	Credit spread	7.4 to 8.2
	Shareholders' loans	91	DCF method	Credit spread	3.6 to 12.1
	Initial fund loans	16	DCF method	Probability of default	0.4
	Receivables arising from silent partnerships	54	DCF method	Credit spread	6.1 to 12.2
	Loans and advances to issuers in default	6	DCF method	Recovery rate	-
Financial assets held for trading	ABSs	2	DCF method	Credit spread	7.9
	Loans and advances to issuers in default	17	DCF method	Recovery rate	-
	Collateralized loan obligations	133	Gaussian copula model	Liquidity spread	2.0 to 6.5
	Bearer securities	127	DCF method	BVAL price adjustment	-0.3 to 1.5
	Registered securities	343	DCF method	BVAL price adjustment	-4.0 to 5.3
	Option in connection with acquisition of long-term equity investments	1	Black-Scholes model	Earnings indicators	-
Investments	ABSs	61	DCF method	Credit spread	0.6 to 13.1
	Investments in associates	4	Income capitalization approach	Future income	-
	Investments in joint ventures	2	Income capitalization approach	Future income	-
	Investments in subsidiaries	57	DCF method	Credit spread	0 to 11.5
		172	Income capitalization approach, net asset value method	Future income	-
		7	Net asset value	-	-
	Collateralized loan obligations	1	Gaussian copula model	Liquidity spread	1.8 to 2.6
	Loans and advances to issuers in default	6	DCF method	Recovery rate	-
	Bearer securities	567	DCF method	BVAL price adjustment	-0.3 to 107.5
	Investment fund units	23	Net asset value	-	-
	Mortgage-backed securities	195	DCF method	Duration	-
		15	DCF method	Recovery rate	0.0 to 71.4
	Other shareholdings	245	DCF method	Capitalization rate, growth factor	1.0 to 11.0
		22	DCF method	Credit spread	0.0
		203	Income capitalization approach, net asset value method	Future income	-
	VR Circle	405	DCF method	Multiple-year default probabilities	0.0 to 100.0

Class according to IFRS 13	Assets/liabilities	Fair value (€ million)	Valuation technique	Unobservable inputs	Spread of unobservable inputs (%)
Investments held by insurance companies	ABSs	1,547	Third-party pricing information	-	-
	Investments in subsidiaries, associates, and joint ventures, real estate funds, profit-participation certificates, and other long-term equity investments	5,038	Net asset value	-	-
	Investments in subsidiaries, associates, and joint ventures, other long-term equity investments, and shares in cooperatives	287	Income capitalization approach	Future income	7.0 to 9.0
	Fixed-income securities, convertible bonds, shares, investment fund units, and shares in cooperatives	754	Third-party pricing information	-	-
	Profit-participation certificates, mortgage loans, and promissory notes	12,674	DCF method	Credit spread	0.6 to 10.0
	Initial fund loans	56	DCF method	Probability of default	0.4
	Other shareholdings	10	Approximation	-	-
Debt certificates issued including bonds	VR Circle	404	DCF method	Multiple-year default probabilities	0.0 to 100.0
Financial liabilities held for trading	Equity/commodity basket products	95	Local volatility model	Correlation of the risk factors considered	10.1 to 80.7
	Products with commodity volatility derived from comparable instruments	3	Local volatility model	Volatility	12.2 to 86.8
Subordinated capital	Loans	69	DCF method	Credit spread	0.5

Fair value measurements within Level 3 of the fair value hierarchy

The table below shows the changes in the fair value measurements of assets within Level 3 of the fair value hierarchy:

€ million	Loans and advances to customers	Derivatives used for hedging (positive fair values)	Financial assets held for trading	Investments	Investments held by insurance companies	Non-current assets and disposal groups classified as held for sale
Balance as at Jan. 1, 2022	679	-	645	1,900	21,365	163
Additions (purchases)	97	-	587	161	4,465	1
Transfers	-	-	436	663	280	-
from Level 3 to Levels 1 and 2	-	-	-416	-591	-51	-
from Levels 1 and 2 to Level 3	-	-	852	1,254	331	-
Disposals (sales)	-113	-	-1,026	-603	-1,974	-161
Changes resulting from measurement at fair value	-67	-	-22	-100	-3,799	-
through profit or loss	-38	-	-22	-41	67	-
through other comprehensive income	-29	-	-	-59	-3,866	-
Other changes	1	-	2	-36	30	-2
Balance as at Dec. 31, 2022	596	-	623	1,985	20,366	-
Additions (purchases)	9	-	1,333	737	3,557	-
Transfers	44	-1	1,408	1,532	6,819	-
from Level 3 to Levels 1 and 2	-12	-1	-389	-1,675	-607	-
from Levels 1 and 2 to Level 3	56	-	1,797	3,207	7,426	-
Disposals (sales)	-20	-	-1,535	-1,692	-2,001	-
Changes resulting from measurement at fair value	5	1	-85	-119	-12	-
through profit or loss	-5	1	-81	23	-413	-
through other comprehensive income	10	-	-4	-142	401	-
Other changes	7	5	-6	-2	-38	-
Balance as at Dec. 31, 2023	**641**	**5**	**1,737**	**2,442**	**28,692**	**-**

The table below shows the changes in the fair value measurements of liabilities within Level 3 of the fair value hierarchy:

€ million	Deposits from customers	Debt certificates issued including bonds	Financial liabilities held for trading	Subordinated capital
Balance as at Jan. 1, 2022	-	427	148	20
Additions (issues)	-	-	42	-
Transfers	-	-	-39	50
from Level 3 to Level 2	-	-	-251	-
from Level 2 to Level 3	-	-	212	50
Disposals (settlements)	-	-25	-40	-
Changes resulting from measurement at fair value	-	2	-14	-1
through profit or loss	-	2	-14	-
Other changes	-	1	-	-
Balance as at Dec. 31, 2022	-	404	98	69
Additions (issues)	200	193	1,213	-
Transfers	282	18	206	-
from Level 3 to Level 2	-	-	-2,082	-
from Level 2 to Level 3	282	18	2,287	-
Disposals (settlements)	-201	-100	-842	-68
Changes resulting from measurement at fair value	7	-6	-173	-
through profit or loss	9	-2	-158	1
through other comprehensive income	-2	-4	-16	-1
Other changes	2	-	4	-1
Balance as at Dec. 31, 2023	**290**	**510**	**505**	**-**

As part of the processes for fair value measurement, the DZ BANK Group reviews whether the valuation methods used for the measurement are typical. This review takes place at every balance sheet date, i.e. at least every 6 months. For the valuation parameters used in the valuation methods, a review is carried out as part of a significance analysis to examine whether unobservable inputs have a significant influence on the fair value.

For each input used in the calculation of fair value, a liquidity score is determined on an ongoing basis that provides information on whether the underlying market is active and the input is observable. Various parameters are used to determine the liquidity score, irrespective of the market data group. In respect of equity prices, for example, a check is carried out of whether the equity was traded in a specified period and whether the trading volume has exceeded a certain threshold. For bonds, the bid-ask spread and the number of price contributors are taken into account. The rules on determining the liquidity score are set centrally by DZ BANK AG and apply to all group entities. On the basis of the liquidity scores determined, the fair value measurements are assigned to the levels of the fair value hierarchy, provided that the group entities use the centralized market database. In the DZ BANK Group, transfers between the levels generally take place as soon as there is a change in the inputs that is relevant to categorization in the fair value hierarchy.

In each step of these processes, both the distinctive features of the particular product type and the distinctive features of the business models of the group entities are taken into consideration.

Transfers of fair values from Levels 1 and 2 to Level 3 of the fair value hierarchy are largely attributable to a revised estimate of the market observability of the valuation parameters used in the valuation methods. Transfers from Level 3 to Levels 1 or 2 are essentially due to the availability of a price listed in an active market and to the inclusion in the valuation method of material valuation parameters observable in the market.

The amount of gains or losses recognized in profit or loss resulting from the recurring fair value measurements within Level 3 of assets and liabilities held at the balance sheet date constituted a net loss of €538 million during the year under review (2022: net gain of €82 million). The gains or losses are predominantly included in the line items net interest income, gains and losses on trading activities, other gains and losses on valuation of financial instruments, and gains and losses on investments held by insurance companies and other insurance company gains and losses.

Exercise of option pursuant to IFRS 13.48

The option offered by IFRS 13.48 of measuring a net risk position for financial assets and financial liabilities is used for portfolios whose components are recognized under the balance sheet items loans and advances to banks, loans and advances to customers, financial assets held for trading, investments, and financial liabilities held for trading. If allocation of the portfolio-based valuation adjustments to the assets and liabilities is required, it is generally carried out in proportion to the nominal amounts of the financial instruments in question.

Sensitivity analysis

In the DZ BANK Group, financial instruments are generally assigned to Level 2 and Level 3 of the fair value hierarchy using a sensitivity-based significance analysis of unobservable inputs. Taking a prudent valuation approach pursuant to article 105 of the Capital Requirements Regulation (CRR), an uncertainty spread is formed for the unobservable inputs that, as a rule, equates to the 90 percent quantile and the 10 percent quantile for the distribution of the input; the change in fair value at the ends of the spread is also examined.

The following table shows the changes in the fair values of financial instruments assigned to Level 3 of the fair value hierarchy that would occur if all inputs in each risk category were factored into the measurement with the ends of each uncertainty spread. Changes in fair value at the lower and upper end of the uncertainty spread are shown separately. In practice, however, it is unlikely that all unobservable inputs would be at the extreme end of their uncertainty spread at the same time. Correlations between inputs are disregarded when determining the uncertainty spreads.

	Dec. 31, 2023	
€ million	Alternative assumptions at the lower end of the uncertainty spread	Alternative assumptions at the upper end of the uncertainty spread
Loans and advances to customers		
Other loans and advances	2	-2
Financial assets held for trading		
Derivatives	-1	1
Investments		
Shares and other shareholdings	6	-2
Bonds	-8	7
Investments in subsidiaries	1	-1
Investment fund units	-3	1
Investments held by insurance companies		
Investments in subsidiaries	19	-16
Fixed-income securities	33	-31
Mortgage loans	2	-2
Registered bonds	163	-163
Promissory notes and loans	65	-36
Other loans	2	-2
Debt certificates issued including bonds		
Other bonds	-1	1
Financial liabilities held for trading		
Bonds issued, share certificates and index-linked certificates, and other debt certificates issued	-1	1
Derivatives	4	-4

The sensitivity analysis was adjusted in the reporting year, so there are no direct comparative figures for the reporting date of December 31, 2022. Based on the sensitivity analysis used in 2022, the values as at December 31, 2022 were as follows:

For the fair values of investments held by insurance companies reported within Level 3, a rise in the interest rate of 1 percent would have led to the recognition of a €22 million loss in the income statement and a loss of €1,089 million under other comprehensive income/loss. For the fair values of investments held by insurance companies, a worsening in the credit rating of 1 percent would have led to the recognition of a €29 million loss in the income statement and a loss of €1,083 million under other comprehensive income/loss.

In the case of the fair values of loans and advances to customers, a worsening in the credit rating or a rise in the interest rate of 1 percent would have led to the recognition of a €9 million loss in the income statement. For the fair values of investments, there would have been a €47 million loss under other comprehensive income/loss and a €16 million loss in the income statement.

The fair values of bonds without liquid markets that are reported within financial assets held for trading, investments, and loans and advances to customers were given an individual adjustment spread or were measured using Bloomberg Valuation Service prices, which are observable in the market. All other things being equal, an increase in the pertinent measurement assumptions of 1 percent would have led to the recognition of a €14 million loss in the income statement and a loss of €3 million under other comprehensive income/loss.

An alternative assumption about the credit spreads used could have led to a significant change in the fair values of some of the ABSs reported under financial assets held for trading and under investments. All other things being equal, an increase of 1 percent in these spreads would have led to the recognition of a €1 million loss under other comprehensive income/loss.

An alternative assumption about the liquidity spreads used could have led to a significant change in respect of collateralized loan obligations reported under investments and under financial assets held for trading. All other things being equal, a rise in the liquidity spread assumptions by 1 percent would have led to a €4 million decrease in the fair values of these financial assets that would be recognized in the income statement.

Non-performing exposures, strategically held investments in subsidiaries and other shareholdings, and investments in real estate funds whose fair values are calculated using an income capitalization approach or the net asset value were not included in the sensitivity analysis as at December 31, 2022.

» 76 Assets and liabilities not measured at fair value on the balance sheet

Fair value hierarchy

Fair value measurements of assets and liabilities that are not recognized at fair value on the balance sheet, but whose fair value must be disclosed, are assigned to the levels of the fair value hierarchy as follows:

	Level 1		Level 2		Level 3	
€ million	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022
Assets	**4,070**	168	**251,052**	248,661	**178,983**	158,484
Cash and cash equivalents	-	-	101,462	93,400	-	-
Loans and advances to banks	-	-	119,326	108,805	3,639	3,164
Loans and advances to customers	-	-	23,376	35,210	166,189	147,255
Investments	3,850	167	6,224	10,615	215	346
Investments held by insurance companies	37	-	2	-	5,797	5,977
Property, plant and equipment, investment property, and right-of-use assets	-	-	-	168	345	192
Other assets	-	-	526	462	1,518	1,549
Non-current assets and disposal groups classified as held for sale	184	-	137	-	1,280	-
Liabilities	**19,368**	22,256	**318,593**	297,355	**71,957**	73,822
Deposits from banks	-	-	166,324	172,525	965	1,410
Deposits from customers	-	-	86,817	84,877	64,103	66,523
Debt certificates issued including bonds	19,368	22,256	64,215	39,157	-	-
Provisions	-	-	359	513	226	268
Other liabilities	-	-	830	277	1,268	1,702
Subordinated capital	-	-	1	7	3,933	3,920
Liabilities included in disposal groups classified as held for sale	-	-	47	-	1,462	-

Fair value measurements within Levels 2 and 3

The fair value measurements of assets and liabilities that are not recognized at fair value on the balance sheet largely correspond to the fair value measurements of assets and liabilities that are recognized at fair value on the balance sheet.

The following table shows the risk categories and valuation techniques used for the fair value measurements at Level 3 of the fair value hierarchy as at December 31, 2023.

Class according to IFRS 13	Assets/liabilities	Fair value (€ million)	Valuation technique	Unobservable inputs
Loans and advances to banks	Home savings loans advanced by building society	103	Amortized cost	
	Mortgage loans	4	Mark-to-model (DCF)	Probability of default
	Current account debit balances	8	Mark-to-model (DCF)	Probability of default
	Registered securities	110	Black model (simple option pricing model)	Bond spreads, fair value adjustments, subordinated spreads
	Registered securities	46	Mark-to-model (DCF)	Bond spreads
	Other bank loans	3,367	Mark-to-model (DCF)	Probability of default
	Other bank loans	1	Present value for which loss allowances have been recognized	Impairment
Loans and advances to customers	Home savings loans advanced by building society	4,848	Amortized cost	
	Home savings loans advanced by building society	56,179	Mark-to-model (DCF)	Probability of default
	Pass-through loans	1,462	Mark-to-model (DCF)	Probability of default
	Pass-through loans	2	Present value for which loss allowances have been recognized	Impairment
	Mortgage loans	51,924	Mark-to-model (DCF)	Probability of default
	Mortgage loans	333	Present value for which loss allowances have been recognized	Impairment
	Current account debit balances	1,565	Mark-to-model (DCF)	Probability of default
	Current account debit balances	16	Present value for which loss allowances have been recognized	Impairment
	Registered securities	1,394	Black model (simple option pricing model)	Bond spreads, fair value adjustments, volatilities
	Registered securities	1,105	Mark-to-model (DCF)	Bond spreads, fair value adjustments
	Other bank loans	46,228	Mark-to-model (DCF)	Probability of default
	Other bank loans	4	Present value for which loss allowances have been recognized	Impairment
	Other loans and advances	1,127	Mark-to-model (DCF)	Probability of default
Investments	Bonds	5	Black model (simple option pricing model)	ABS spreads
	Bonds	24	Black model (simple option pricing model)	Illiquid market prices, fair value adjustments
	Bonds	68	Mark-to-market	Illiquid market prices, fair value adjustments
	Bonds	116	Mark-to-model (DCF)	Bond spreads, fair value adjustments
	Bonds	3	Multi-factor yield curve model	Illiquid market prices, fair value adjustments
Investments held by insurance companies	Investment property	25	Amortized cost	
	Investment property	3,945	Income capitalization approach	Future rent, reference prices in the market, and similar
	Investment property	1,673	Valuation reports	
	Registered bonds	100	Mark-to-model (DCF)	Bond spreads
	Registered bonds	33	Multi-factor yield curve model	Bond spreads
	Promissory notes and loans	10	Amortized cost	
	Other loans and receivables	11	Amortized cost	

Class according to IFRS 13	Assets/liabilities	Fair value (€ million)	Valuation technique	Unobservable inputs
Property, plant and equipment	Investment property	345	Valuation reports	
Other assets	Credit balances with banks (insurance)	647	Amortized cost	
	Other receivables	871	Amortized cost	
Non-current assets and disposal groups classified as held for sale	Loans and advances to customers	170	Amortized cost	
	Loans and advances to customers	1,101	Mark-to-model (DCF)	Probability of default
	Other assets	9	Income capitalization approach	Future rent, reference prices in the market, and similar
Deposits from banks	Home savings deposits	433	Cost	
	Other deposits	533	Mark-to-model (DCF)	Probability of default
Deposits from customers	Home savings deposits	63,564	Cost	
	Other deposits	32	Cost	
	Other deposits	508	Mark-to-model (DCF)	Probability of default
Provisions	Provisions for financial guarantee contracts	2	Mark-to-model (DCF)	Probability of default
	Provisions for loan commitments	6	Cost	
	Provisions for loan commitments	216	Mark-to-model (DCF)	Probability of default
	Provisions for loan commitments	1	Present value for which loss allowances have been recognized	Impairment
Other liabilities	Subordinated liabilities (insurance)	15	Cost	
	Subordinated liabilities (insurance)	26	Net asset value	
	Other payables	282	Cost	
	Liabilities from investment contracts	608	Cost	
	Liabilities to banks (insurance)	312	Cost	
	Debt certificates issued including bonds (insurance)	25	Cost	
Subordinated capital	Subordinated liabilities	1,030	Black model (simple option pricing model)	Bond spreads, fair value adjustments, subordinated spreads
	Subordinated liabilities	2,904	Mark-to-model (DCF)	Subordinated spreads
Liabilities included in disposal groups classified as held for sale	Deposits from customers	1,462	Cost	

The following table shows the valuation techniques and the unobservable inputs used for the fair value measurements at Level 3 of the fair value hierarchy as at December 31, 2022. Due to the change in the method used to determine observability for each individual input used in the calculation of fair value, the disclosures as at December 31, 2022 are not comparable with those as at December 31, 2023.

Class according to IFRS 13	Assets/liabilities	Fair value (€ million)	Valuation technique	Unobservable inputs
Loans and advances to banks	Loans	3,164	DCF method	Credit spread, recovery rate
Loans and advances to customers	Home savings loans	3,013	Amortized cost	
	Building loans	53,722	DCF method	Credit spread
	Loans	90,520	DCF method	Credit spread, recovery rate
Investments	ABSs	34	DCF method	Credit spread
	Bonds with adjustment spread	310	DCF method	BVAL price adjustment
	Loans and advances to issuers in default	2	DCF method	Recovery rate
Investments held by insurance companies		88	Cost	Nominal amounts
	Investment property	5,816	DCF method	Future rent, reference prices in the market
	Loans and bank accounts	73	Cost	Nominal amounts
Property, plant and equipment	Investment property	192	Valuation reports	
Other assets	Credit balances with banks	702	Cost	Nominal amounts
	Other receivables	847	Cost	Nominal amounts
Deposits from banks	Home savings deposits	1,275	Cost	
	Loans	135	DCF method	Credit spread
Deposits from customers	Home savings deposits	66,087	Cost	
	Loans	409	DCF method	Credit spread
	Overpayments on consumer finance loans	27	Cost	
Provisions	Provisions for loan commitments	268	Settlement amount	
Other liabilities	Loans	576	Cost	Nominal amounts
	Non-controlling interests in special funds	156	Cost	Nominal amounts
	Subordinated liabilities	16	Cost	Nominal amounts
	Subordinated liabilities	18	Net asset value	
	Registered securities	36	Cost	Nominal amounts
	Other payables	10	Cost	Nominal amounts
	Liabilities arising from rented software	1	Cost	Assumptions regarding the exercise of extension or termination options
	Liabilities from capitalization transactions	889	Cost	Nominal amounts
Deposits from customers	Bonds with adjustment spread	3,920	DCF method	Credit spread

» 77 Financial liabilities designated as at fair value through profit or loss

A residual value method is used to determine changes in fair value attributable to changes in the DZ BANK Group's own credit risk. In this method, the measurement effect caused by changes in own credit risk is determined by deducting the measurement effect caused by factors other than the change in own credit risk from the overall change in fair value. The cumulative changes in fair value resulting from changes in own credit risk amounted to a gain of €389 million in 2023 (2022: gain of €87 million). The use of this method ensures that the changes in fair value attributable to changes in own credit risk are not distorted by other effects caused by changes in market risk.

The following overview compares carrying amounts with the amounts contractually required to be paid at maturity to the creditors concerned for liabilities designated as at fair value through profit or loss, but whose changes in fair value attributable to own credit risk are reported in other comprehensive income:

€ million	Carrying amount Dec. 31, 2023	Carrying amount Dec. 31, 2022	Repayment amount Dec. 31, 2023	Repayment amount Dec. 31, 2022
Deposits from banks	3,804	3,888	4,138	4,366
Deposits from customers	7,420	6,089	8,318	7,249
Debt certificates issued including bonds	16,885	15,565	18,538	17,956
Subordinated capital	-	69	-	68
Total	**28,109**	**25,612**	**30,993**	**29,639**

In the course of the year under review, a loss of €1 million – previously reported in other comprehensive income/loss – was realized upon derecognition of financial liabilities as a result of measurement effects in connection with changes in the DZ BANK Group’s own credit risk (2022: gain of €6 million). This amount was reclassified to retained earnings within equity once the financial liabilities had been derecognized.

» 78 Reclassification

On January 1, 2021, financial assets had been reclassified prospectively due to a change to the business model that was attributable to the R+V-wide strategic program known as ‘Wachstum durch Wandel’ (growth through change).

Financial assets of €15,606 million categorized as ‘financial assets measured at amortized cost’ had been reclassified as ‘financial assets measured at fair value through other comprehensive income’ in 2021.

Financial assets of €3,139 million categorized as ‘financial assets measured at fair value through profit or loss’ had been reclassified as ‘financial assets measured at fair value through other comprehensive income’ in 2021. At the time of reclassification, the reclassified assets had an average effective interest rate of 2.25 percent. During the reporting period, these assets generated interest income of €59 million (2022: €69 million).

» 79 Offsetting of financial assets and financial liabilities

Financial assets and financial liabilities reference standard master agreements, such as ISDA Master Agreements and German Master Agreements for Financial Futures. However, these standard master agreements do not generally satisfy the offsetting criteria in IAS 32.42 because the legal right to set off the amounts under these agreements is contingent on the occurrence of a future event.

The following tables show financial assets that were offset or that were subject to a legally enforceable global netting agreement or a similar arrangement:

AS AT DECEMBER 31, 2023

€ million	Gross amount of financial assets before offsetting	Gross amount of offset financial liabilities	Net amount of financial assets (carrying amount)	Associated amounts not offset on the balance sheet: Financial instruments	Associated amounts not offset on the balance sheet: Cash collateral received	Net amount
Derivatives	60,015	43,024	16,991	9,840	6,232	919
Reverse repos/securities borrowing	8,686	-	8,686	8,656	-	30
Total	**68,701**	**43,024**	**25,677**	**18,497**	**6,232**	**949**

AS AT DECEMBER 31, 2022

€ million	Gross amount of financial assets before offsetting	Gross amount of offset financial liabilities	Net amount of financial assets (carrying amount)	Associated amounts not offset on the balance sheet		Net amount
				Financial instruments	Cash collateral received	
Derivatives	79,486	58,113	21,373	12,289	8,269	815
Reverse repos/securities borrowing	18,911	-	18,911	18,565	-	345
Total	**98,396**	**58,113**	**40,283**	**30,854**	**8,269**	**1,160**

The following tables show financial liabilities that were offset or that were subject to a legally enforceable global netting agreement or a similar arrangement:

AS AT DECEMBER 31, 2023

€ million	Gross amount of financial liabilities before offsetting	Gross amount of offset financial assets	Net amount of financial liabilities (carrying amount)	Associated amounts not offset on the balance sheet		Net amount
				Financial instruments	Cash collateral furnished	
Derivatives	59,669	41,584	18,086	10,122	4,414	3,550
Repos/securities lending	889	-	889	889	-	-
Other financial instruments	214	214	-	-	-	-
Total	**60,772**	**41,798**	**18,974**	**11,010**	**4,414**	**3,550**

AS AT DECEMBER 31, 2022

€ million	Gross amount of financial liabilities before offsetting	Gross amount of offset financial assets	Net amount of financial liabilities (carrying amount)	Associated amounts not offset on the balance sheet		Net amount
				Financial instruments	Cash collateral furnished	
Derivatives	79,447	53,573	25,874	12,860	6,799	6,216
Repos/securities lending	1,034	-	1,034	920	-	114
Other financial instruments	219	219	-	-	-	-
Total	**80,700**	**53,792**	**26,908**	**13,780**	**6,799**	**6,330**

» 80 Sale and repurchase agreements, securities lending

Transfers of financial assets

In 2023, the only transfers carried out by the DZ BANK Group in which the transferred assets remained on the balance sheet in their entirety were transfers under sale and repurchase agreements (repos), in which the DZ BANK Group was the original seller, and transfers as part of securities lending transactions.

Sale and repurchase agreements

The entities in the DZ BANK Group enter into sale and repurchase agreements using standard banking industry master agreements, notably the Global Master Repurchase Agreement (GMRA) and the master agreement provided by the International Securities Market Association (ISMA). Under these agreements, the buyer of the securities is permitted to make use of the securities without restriction (with no requirement for a prior counterparty default) and return securities of the same type. If the fair value of the securities received or transferred in such transactions increases or decreases, the entity concerned may be required to furnish additional collateral or may demand additional collateral.

As at the balance sheet date, the sale and repurchase agreements entered into by companies in the DZ BANK Group were exclusively genuine sale and repurchase agreements, i.e. the buyer is obliged to sell back the securities.

Sale and repurchase agreements in which DZ BANK acts as a seller (repos)

Under sale and repurchase agreements, bonds and other fixed-income securities classified as financial assets measured at fair value and financial assets measured at amortized cost are temporarily transferred to another party.

As at the balance sheet date, the carrying amounts of securities subject to such sale and repurchase agreements were:

€ million	Dec. 31, 2023	Dec. 31, 2022
FINANCIAL ASSETS MEASURED AT FAIR VALUE	**300**	**100**
Financial assets measured at fair value through profit or loss	**300**	100
Financial assets mandatorily measured at fair value through profit or loss	***300***	*100*
Financial assets held for trading	300	100
FINANCIAL ASSETS MEASURED AT AMORTIZED COST	**599**	**608**
Investments	599	608
Total	**899**	**708**

As at the balance sheet date, additional collateral with a carrying amount of €160 million had been furnished in connection with repos (December 31, 2022: €146 million). This collateral is recognized under financial assets held for trading and may be sold or repledged by the recipient even if the provider is not in default.

The carrying amounts of liabilities arising from sale and repurchase agreements were as follows:

€ million	Dec. 31, 2023	Dec. 31, 2022
LIABILITIES ASSOCIATED WITH FINANCIAL ASSETS MEASURED AT FAIR VALUE	**300**	**100**
Liabilities associated with financial assets measured at fair value through profit or loss	**300**	100
Liabilities associated with financial assets mandatorily measured at fair value through profit or loss	***300***	*100*
Liabilities associated with financial assets held for trading	300	100
LIABILITIES ASSOCIATED WITH FINANCIAL ASSETS MEASURED AT AMORTIZED COST	**589**	**623**
Liabilities associated with investments	589	623
Total	**889**	**723**

Sale and repurchase agreements in which DZ BANK acts as the buyer (reverse repos)

In reverse repo transactions, bonds and other fixed-income securities are bought on a temporary basis. As at December 31, 2023, the fair value of securities involved in such transactions was €8,718 million (December 31, 2022: €18,634 million).

The receivables arising from these reverse repo transactions and reported under financial assets held for trading and under loans and advances to banks amounted to €8,680 million as at the balance sheet date (December 31, 2022: €18,674 million). As part of the collateral management requirements, the original seller provides the DZ BANK Group with additional collateral for reverse repo transactions in which the fair value of the securities purchased is less than the amounts receivable from the seller.

Securities lending

Securities lending transactions are undertaken on the basis of the Global Master Securities Lending Agreement (GMSLA) or on the basis of individual contractual arrangements. Under these agreements, the borrower of the securities is permitted to make use of the securities without restriction and return securities of the same type. If the fair value of the securities received or transferred in such transactions increases or decreases, the entity concerned may be required to furnish additional collateral or may demand additional collateral.

Securities lending

In securities lending transactions, shares and other variable-yield securities and/or bonds and other fixed-income securities classified as financial assets measured at fair value and financial assets measured at amortized cost are temporarily transferred to another party.

As at the balance sheet date, the carrying amounts of securities lent under securities lending arrangements were as follows:

€ million	Dec. 31, 2023	Dec. 31, 2022
FINANCIAL ASSETS MEASURED AT FAIR VALUE	**4,866**	4,055
Financial assets measured at fair value through profit or loss	**883**	1,228
Financial assets mandatorily measured at fair value through profit or loss	***883***	*1,228*
Financial assets held for trading	883	1,228
Financial assets measured at fair value through other comprehensive income	**3,982**	2,827
Financial assets mandatorily measured at fair value through other comprehensive income	***3,982***	*2,827*
Investments held by insurance companies	3,982	2,827
FINANCIAL ASSETS MEASURED AT AMORTIZED COST	**52**	33
Investments held by insurance companies	52	33
Total	**4,918**	4,089

Collateral is provided or received as part of collateral management arrangements in connection with financial assets held for trading and investments held by insurance companies that are lent under securities lending agreements. In this process, all positions with the counterparty concerned are netted to determine the collateral to be provided or received.

As at the balance sheet date, additional collateral with a carrying amount of €34 million had been furnished in connection with securities lending (December 31, 2022: €19 million). This collateral is recognized under financial assets held for trading and may be sold or repledged by the recipient even if the provider is not in default.

Securities borrowing

The fair value of borrowed securities as at the balance sheet date was as follows:

€ million	Dec. 31, 2023	Dec. 31, 2022
Bonds and other fixed-income securities	737	1,078
Shares and other variable-yield securities	34	23
Total	**770**	**1,101**

In addition to securities subject to sale and repurchase agreements or that have been borrowed, bonds and other fixed-income securities and shares and other variable-yield securities are accepted as additional collateral. These may be sold or repledged as collateral by the recipient, even if there is no default. As at December 31, 2023, the fair value of the additional collateral received was €22 million (December 31, 2022: €56 million).

Securities subject to a sale and repurchase or lending agreement that the recipient may sell or repledge as collateral with no requirement for a prior counterparty default

All securities transferred to another party by entities in the DZ BANK Group under sale and repurchase agreements or securities lending agreements may be sold or repledged as collateral by the recipient without restriction.

The carrying amounts of the individual balance sheet items concerned are as follows:

€ million	Dec. 31, 2023	Dec. 31, 2022
Financial assets held for trading	1,183	1,328
Investments	599	608
Investments held by insurance companies	4,034	2,861
Total	**5,817**	**4,797**

Securities subject to a sale and repurchase and borrowed securities that the collateral provider may sell or repledge as collateral with no requirement for a prior counterparty default

The fair value of the sold or repledged securities amounted to €4 billion as at the balance sheet date. The DZ BANK Group is obliged to return collateral of equal value to the collateral provider.

» 81 Collateral

The breakdown of the carrying amount of financial assets pledged as collateral for liabilities is as follows:

€ million	Dec. 31, 2023	Dec. 31, 2022
Loans and advances to banks	76,807	75,686
Loans and advances to customers	179	313
Financial assets held for trading	8,810	13,427
Investments	504	10,887
Investments held by insurance companies	1,591	1,640
Total	**87,891**	**101,954**

Of the total financial assets pledged as collateral for liabilities, financial assets held for trading and investments with a carrying amount of €4,187 million (December 31, 2022: €6,673 million) may be sold or repledged as collateral by the recipient, even if the relevant entity in the DZ BANK Group is not in default.

Funds received from German federal and state development banks that are to be specifically used for the purposes of development program loans are mainly passed on to affiliated banks. The corresponding loans and advances to affiliated banks serve as collateral with the German federal and state development banks.

The pledged loans and advances to customers predominantly consist of building loans issued as part of KfW development program loans. The amounts due to Germany's KfW development bank are secured by assigning to KfW the receivables arising from the forwarding of the development loans together with the collateral furnished by the borrowers. The loans and advances to customers pledged as collateral also comprise collateral in the form of cash as part of collateral management. This is arranged under standard industry collateral agreements.

Securities and money market placements recognized as financial assets held for trading are pledged as collateral for exchange-traded forward transactions, non-exchange-traded derivatives and for forward forex transactions. These arrangements are governed by standard industry collateral agreements.

The investments pledged as collateral comprise securities furnished as collateral for open-market operations with Deutsche Bundesbank.

The investments held by insurance companies are predominantly securities pledged as collateral as part of the reinsurance business; this collateral may only be sold or pledged by the recipient in the event of default by the provider.

» 82 Items of income, expense, gains, and losses

Net gains and losses

The breakdown of net gains or net losses on financial instruments by IFRS 9 category for financial assets and financial liabilities is as follows:

€ million	2023	2022
Financial instruments measured at fair value through profit or loss	**326**	-1,876
Financial instruments mandatorily measured at fair value through profit or loss	1,794	-5,114
Financial instruments designated as at fair value through profit or loss	-1,467	3,238
Financial assets measured at fair value through other comprehensive income	**5,954**	-23,064
Financial assets mandatorily measured at fair value through other comprehensive income	5,840	-22,659
of which gains and losses recognized in profit or loss	1,843	1,188
of which gains and losses recognized in other comprehensive income	4,338	-23,312
of which gains and losses reclassified on derecognition from cumulative other comprehensive income to profit or loss	-341	-535
Financial assets designated as at fair value through other comprehensive income	114	-405
Financial assets measured at amortized cost	**10,899**	4,891
Financial liabilities measured at amortized cost	**-8,653**	-2,316

Net gains or net losses comprise gains and losses on fair value measurement, impairment losses and reversals of impairment losses, and gains and losses on the sale or early repayment of the financial instruments concerned. These items also include interest income and interest expense, current income, income from profit-pooling, profit-transfer agreements, partial profit-transfer agreements, and expenses from the transfer of losses.

In connection with financial liabilities designated as at fair value through profit or loss, a gain of €300 million (2022: gain of €170 million) was recognized in other comprehensive income/loss and a loss of €1,712 million (2022: gain of €4,409 million) in profit or loss.

Interest income and expense

The following total interest income and expense arose in connection with financial assets and financial liabilities that are not measured at fair value through profit or loss:

€ million	2023	2022
Interest income	**13,532**	6,913
From financial assets measured at amortized cost including finance leases	11,277	5,183
From financial assets measured at fair value through other comprehensive income	2,256	1,729
Interest expense	**-8,662**	-2,322

Fee and commission income and expenses

The table below shows the changes in fee and commission income and expenses:

€ million	2023	2022
Fee and commission income		
From financial assets and financial liabilities not at fair value through profit or loss	170	194
From trust and other fiduciary activities	4,359	4,478
Fee and commission expenses		
For financial assets and financial liabilities not at fair value through profit or loss	-202	-198
For trust and other fiduciary activities	-1,856	-1,960

» 83 Derivatives

Derivatives are used primarily to hedge against market risk as well as for trading purposes. As at the balance sheet date, the breakdown of the portfolio of derivatives was as follows:

	Nominal amount					Fair value			
	Time to maturity			Total amount		Positive		Negative	
€ million	≤ 1 year	> 1 year – 5 years	> 5 years	**Dec. 31, 2023**	Dec. 31, 2022	**Dec. 31, 2023**	Dec. 31, 2022	**Dec. 31, 2023**	Dec. 31, 2022
INTEREST-LINKED CONTRACTS	**268,862**	**550,990**	**736,073**	**1,555,925**	**1,413,140**	**14,735**	**19,362**	**14,311**	**21,815**
OTC products									
Forward rate agreements	38,583	-	-	38,583	20,266	-	7	-	1
Interest-rate swaps	184,847	507,038	712,468	1,404,353	1,289,824	13,632	18,027	11,982	18,921
Interest-rate options – bought	18,314	19,135	9,221	46,670	41,708	790	1,074	132	118
Interest-rate options – written	19,372	23,653	14,384	57,410	55,330	303	248	2,195	2,624
Other interest-rate contracts	43	14	-	57	213	-	-	-	150
Exchange-traded products									
Interest-rate futures	7,702	1,150	-	8,853	5,799	8	7	2	2
CURRENCY-LINKED CONTRACTS	**105,584**	**28,729**	**7,668**	**141,981**	**186,663**	**1,884**	**3,168**	**1,935**	**3,193**
OTC products									
Cross-currency swaps (excl. portfolio hedging)	5,815	17,772	7,287	30,873	33,235	640	1,064	595	867
Forward forex transactions	89,602	9,671	356	99,629	126,574	1,168	1,909	1,280	2,156
Forex options – bought	5,347	243	-	5,589	11,733	10	52	39	65
Forex options – written	4,695	1,043	-	5,738	14,843	66	142	18	104
Exchange-traded products									
Forex futures	49	-	-	49	204	-	-	-	-
Forex options	77	-	26	103	74	-	-	2	1
SHARE-/INDEX-LINKED CONTRACTS	**17,483**	**13,512**	**1,648**	**32,643**	**33,299**	**709**	**599**	**1,368**	**1,920**
OTC products									
Share/index options – bought	2,219	52	106	2,377	2,396	21	8	-	-
Share/index options – written	595	356	-	951	653	-	-	21	52
Other share/index contracts	542	4,587	1,343	6,472	6,192	89	21	331	703
Exchange-traded products									
Share/index futures	1,431	138	-	1,569	1,711	-	1	1	10
Share/index options	12,698	8,378	199	21,274	22,348	598	570	1,015	1,154
OTHER CONTRACTS	**4,297**	**3,424**	**12,206**	**19,927**	**18,719**	**11**	**6**	**112**	**270**
OTC products									
Precious metal contracts (excl. gold derivatives)	-	-	-	-	1	-	-	-	-
Commodities contracts	1	62	47	110	33	10	2	-	-
Other contracts	3,952	3,356	12,125	19,434	18,400	-	1	103	262
Exchange-traded products									
Futures	36	1	-	38	101	-	1	-	-
Options	308	4	34	346	185	1	1	8	8
CREDIT DERIVATIVES	**2,901**	**8,256**	**3,242**	**14,398**	**16,521**	**225**	**187**	**73**	**107**
Protection buyer									
Credit default swaps	633	1,883	643	3,159	3,442	3	12	60	42
Protection seller									
Credit default swaps	2,258	6,362	2,592	11,212	13,046	222	174	12	64
Total return swaps	10	10	7	27	32	-	-	1	1
Total	**399,126**	**604,910**	**760,837**	**1,764,874**	**1,668,343**	**17,564**	**23,321**	**17,798**	**27,305**

The derivatives held at the balance sheet date involved the following counterparties:

€ million	Fair value			
	Positive		Negative	
	Dec. 31, 2023	Dec. 31, 2022	**Dec. 31, 2023**	Dec. 31, 2022
OECD central governments	**11**	11	**36**	29
OECD banks	**11,644**	15,887	**14,669**	22,650
OECD financial services institutions	**135**	196	**171**	345
Other companies, private individuals	**5,613**	7,007	**2,853**	4,248
Non-OECD banks	**162**	219	**68**	33
Total	**17,564**	**23,321**	**17,798**	**27,305**

The Union Investment Group has capital preservation commitments under section 1 (1) no. 3 of the German Personal Pension Plan Certification Act (AltZertG) amounting to €19,144 million (December 31, 2022: €18,067 million). These commitments are the total amount of the pension contributions paid by investors into the individual variants of the *UniProfiRente* and *UniProfiRente Select* products, which represent the minimum amount that must be made available at the start of the payout phase under statutory provisions, and the guaranteed payout amounts for existing contracts that are already in the portfolio payout phase. The group also has minimum payment commitments of €290 million (December 31, 2022: €332 million) in connection with genuine guarantee funds launched by fund management companies in the group.

» 84 Hedge accounting

Risk management strategy

Fair value hedges are used as part of the risk management strategy to eliminate or reduce accounting mismatches.

Hedged items

Fair value hedges are used in the hedging of interest-rate risk. In this context, interest-rate risk refers to the risk of an adverse change in the fair value of fixed-income financial instruments caused by a change in market interest rates. The hedged financial assets are loans and advances to banks, loans and advances to customers, and investments that are categorized as ‘financial assets measured at amortized cost’ or ‘financial assets measured at fair value through other comprehensive income’. Hedged financial liabilities are deposits from banks and customers and debt certificates issued including bonds, all of which are measured at amortized cost. Interest-rate risk portfolios under both assets and liabilities are identified and designated as hedged items in portfolio hedges.

Hedging instruments

Swaps are designated as hedging instruments in fair value hedges of financial assets and financial liabilities. The swaps are predominantly plain vanilla interest-rate swaps, but occasionally interest-rate swaps with termination options are used. In the DZ BANK Group, hedging instruments are reported under hedging instruments (positive fair values) and hedging instruments (negative fair values).

Assessment of hedge effectiveness

The prerequisite for recognizing a hedge is that the hedge must be highly effective on both a prospective and retrospective basis. Highly effective in this case means that the changes in fair value of the hedged items must be almost fully offset by the changes in fair value of the hedging instruments. In the case of the individual hedges entered into by the DZ BANK Group, this is achieved by ensuring that the main features of hedged items that influence their value match those of the hedging instruments and that there is a hedging ratio of 100 percent (1:1 hedging). In portfolio hedges, there is no direct economic relationship between hedged item and hedging instrument. An individual hedging ratio based on the sensitivities of the hedged items and hedging instruments is used to ensure that the respective changes in fair value more or less balance each other out. Hedge effectiveness must be assessed and documented at every balance sheet date as a minimum.

For individual hedges accounted for in application of the rules under IFRS 9, any hedge ineffectiveness is quantified retrospectively and recognized in profit or loss. IFRS 9 does not define effectiveness in terms of a mandatory range of values. If a hedge no longer satisfies the effectiveness criterion in relation to the hedge ratio, the hedge ratio must be adjusted (recalibration). If it is no longer possible to adjust the hedge ratio or if the risk management objective for the hedge has changed, the hedge must be de-designated.

Portfolio hedges that continue to be accounted for in application of the rules under IAS 39 are deemed to be highly effective if the changes in the fair value of the hedged items are offset by the changes in the fair value of the hedging instruments within the range of 80 percent to 125 percent specified by IAS 39. If this assessment identifies that a hedge has not achieved the required effectiveness, the hedge must be reversed retrospectively to the balance sheet date of the last assessment in which the hedge was found to be effective.

In the case of fair value hedges, prospective effectiveness is assessed by using sensitivity analyses (based on the basis point value method) and linear regression analysis; it is also assessed qualitatively with the critical-terms-match method. Retrospective effectiveness is assessed primarily by using the dollar offset method, a noise threshold value, and regression analysis. In these methods, the cumulative changes in the fair value of the hedged items attributable to the hedged risk are compared with the changes in the fair value of the hedging instruments.

Gains and losses and hedge ineffectiveness from hedge accounting

In hedge accounting, hedge ineffectiveness arises when the changes in the fair value of hedging instruments do not fully offset the changes in the fair value of the hedged items. The ineffective portions of hedges are recognized in profit or loss under other gains and losses on valuation of financial instruments.

Hedge ineffectiveness can arise in fair value hedges of interest-rate risk. Some of the ways in which this can occur are where the changes in the fair values of hedged items and hedging instruments do not balance each other out in full because of differences in maturities, cash flows, and/or discount rates. Unexpected causes of hedge ineffectiveness may arise, primarily in the event of early (partial) termination of derivatives used for hedging or the unexpected sale or repayment of hedged items.

Extent of risks managed by the use of hedges

The table below presents information on the volume of hedged items and hedging instruments designated as hedges for the purposes of hedging interest-rate risk:

AS AT DECEMBER 31, 2023

€ million	Carrying amount	Nominal amount of hedging instruments	Fair value hedge adjustments included in carrying amount of hedged items		Fair value changes as basis for measuring hedge ineffective-ness for the period
			Existing hedges	Terminated hedges	
Assets	**63,369**	**48,556**	**-2,361**	**-945**	**888**
Loans and advances to banks	4		-	-	-
Loans and advances to customers	1,112		-199	58	74
Investments	3,319		-82	10	132
Portfolio hedges of interest-rate risk	58,011		-2,081	-1,013	1,427
Hedging instruments (positive fair values)	923	48,556			-744
Liabilities	**21,032**	**32,671**	**-233**	**-420**	**-932**
Deposits from banks	90		-14	7	-6
Deposits from customers	72		-15	7	-5
Debt certificates issued including bonds	33		-8	3	-2
Portfolio hedges of interest-rate risk	20,214		-197	-437	-101
Hedging instruments (negative fair values)	624	32,671			-818

AS AT DECEMBER 31, 2022

€ million	Carrying amount	Nominal amount of hedging instruments	Fair value hedge adjustments included in carrying amount of hedged items		Fair value changes as basis for measuring hedge ineffective-ness for the period
			Existing hedges	Terminated hedges	
Assets	**59,004**	**57,799**	**-5,196**	**-1,151**	**-1,416**
Loans and advances to banks	1		-	-	-
Loans and advances to customers	1,086		-279	66	-347
Investments	2,710		-215	11	-225
Portfolio hedges of interest-rate risk	53,637		-4,703	-1,228	-7,691
Hedging instruments (positive fair values)	1,568	57,799			6,848
Liabilities	**16,847**	**16,382**	**-587**	**-588**	**1,371**
Deposits from banks	83		-20	8	40
Deposits from customers	77		-20	11	147
Debt certificates issued including bonds	31		-10	4	18
Portfolio hedges of interest-rate risk	16,215		-537	-610	1,425
Hedging instruments (negative fair values)	442	16,382			-260

Effects of hedging instruments on cash flows

The residual maturities of the hedging instruments entered into by the DZ BANK Group to hedge interest-rate risk are as follows:

AS AT DECEMBER 31, 2023

	≤ 1 month	> 1 month – 3 months	> 3 months – 1 year	> 1 year – 5 years	> 5 years
Nominal amount (€ million)	82	940	7,932	43,428	28,844
Average hedged interest rate (%)	0.22	-0.06	2.07	1.5	1.84

AS AT DECEMBER 31, 2022

	≤ 1 month	> 1 month – 3 months	> 3 months – 1 year	> 1 year – 5 years	> 5 years
Nominal amount (€ million)	318	1,427	4,940	38,254	29,242
Average hedged interest rate (%)	0.55	0.26	1.58	0.91	1.22

» 85 Reform of interest-rate benchmarks

The publication of USD Libor was discontinued by the administrator with effect from June 30, 2023. A synthetic (non-representative) USD Libor will be published until September 30, 2024, which can be used in exceptional cases for existing business that is difficult to amend ('tough legacy').

In 2022, the DZ BANK Group applied the temporary exceptions provided for hedge accounting resulting from the provisions in phase 1 of the reform of interest-rate benchmarks. The remaining hedging instruments that were pegged to USD Libor were switched over in 2023. As a result, the exceptions for phase 1 were no longer in use as at the balance sheet date.

The 3-month USD Libor-related risk attaching to the hedges as at December 31, 2022 could be seen from the nominal amount of the hedging instruments of €3,117 million. The weighted average maturity was 8.6 years.

In 2023, most of the transactions and contracts referencing USD Libor as well as measurement and risk calculation methods were amended as planned and in keeping with relevant deadlines so that they use SOFR-based interest rates and yield curves instead. Certain individual contracts were switched over after June 30, 2023 but before the end of the current interest period in which the interest rate is still based on USD Libor, or alternatively with the help of the synthetic USD Libor. These steps have been implemented, thereby completing the replacement of USD Libor in the DZ BANK Group.

As at the balance sheet date, derivatives continued to be held that predominantly reference the Canadian Dollar Offered Rate (CDOR). The publication of CDOR will be discontinued by the administrator with effect from June 28, 2024. It is planned to switch over all transactions referencing CDOR by the relevant deadlines. A specialist team in the DZ BANK Group will ensure the correct technical switchover of these transactions and resolve any outstanding issues.

The table below shows the carrying amounts of the non-derivative financial instruments and the nominal amounts of the derivatives for which the switch to alternative interest-rate benchmarks had not yet taken place as at the reporting date. Financial instruments that will expire before any potential transition are not included.

AS AT DECEMBER 31, 2023

€ million	Non-derivative financial assets	Non-derivative financial liabilities	Derivatives
USD Libor	301	-	48
Other	-	-	1,265

AS AT DECEMBER 31, 2022

€ million	Non-derivative financial assets	Non-derivative financial liabilities	Derivatives
USD Libor	3,420	438	93,523
Other	76	-	1,648

» 86 Nature and extent of risks arising from financial instruments

Disclosures pursuant to IFRS 7.35F(a)-36(b) can be found in this note in the notes to the consolidated financial statements. With the exception of the qualitative and quantitative disclosures pursuant to IFRS 7.35F(a)-36(b), further disclosures on the nature and extent of risks arising from financial instruments (IFRS 7.31-42) are included in the group management report in chapter VII ‘Risk report’, sections 6 ‘Liquidity adequacy’ and 8 ‘Credit risk’ and for the Bank sector in section 10 ‘Market risk’.

The disclosures published in the risk report form part of the content of these notes to the consolidated financial statements.

Credit risk management practices

The rules for recognizing loss allowances are based on the calculation of expected losses in the lending business, on investments, on investments held by insurance companies, and on other assets. The impairment rules are applied only to those financial assets that are not measured at fair value through profit or loss. These are:

– financial assets measured at amortized cost; and
– financial assets mandatorily measured at fair value through other comprehensive income.

The impairment rules are also applied to:

– financial guarantee contracts and loan commitments that fall within the scope of IFRS 9 and are not recognized at fair value through profit or loss;
– lease receivables; and
– trade receivables and contract assets pursuant to IFRS 15.

In accordance with IFRS 9, the three-stage approach is used, additionally taking POCI assets into account, to determine the expected losses:

- Stage 1: For financial assets whose credit risk has not increased significantly since initial recognition that were not credit-impaired upon initial recognition, the 12-month credit loss is recognized. Interest is recognized on the basis of the gross carrying amount.
- Stage 2: For financial assets whose credit risk has increased significantly since initial recognition but are not considered credit-impaired, the loss allowances are determined in the amount of the assets' lifetime expected credit losses. Interest is recognized on the basis of the gross carrying amount.
- Stage 3: Financial assets are classified as credit-impaired and thus assigned to stage 3 if they are deemed to be in default pursuant to article 178 CRR as operationalized in the DZ BANK Group's definition of default. Because the indicators and events deemed to be stage 3 criteria under IFRS 9 cover the same scope and, at the same time, lead to default pursuant to article 178 CRR, there is a correlation between these two classifications. Therefore, if the financial assets are in default, they are also classified as credit-impaired and assigned to stage 3. Here too, loss allowances are recognized in the amount of the lifetime expected credit losses. Interest income on credit-impaired financial assets is calculated on the amortized cost after loss allowances using the effective interest method.
- POCI assets: Financial assets that are already deemed credit-impaired upon initial recognition are not assigned to the 3-stage model and are reported separately. Credit-impaired financial assets are initially recognized at fair value rather than at their gross carrying amount. Consequently, interest is recognized for these assets using a risk-adjusted effective interest rate.

The review of whether the credit risk of financial assets, financial guarantee contracts, and loan commitments has increased significantly since initial recognition is carried out on an ongoing basis. The assessment is conducted both for individual financial assets and for portfolios of assets using quantitative and qualitative analysis. As a rule, quantitative analysis looks at the expected credit risk over the entire residual life of the financial instruments in question. Macroeconomic information is also taken into account in the form of shift factors. The model-driven default probability profiles used in economic and regulatory risk management are adjusted on the basis of these shift factors (see the section 'Impact of macroeconomic conditions'). For the quantitative transfer criterion, the credit risk as at the balance sheet date for the residual life is compared with the assets' credit risk over the same maturity period estimated at the time of initial recognition. The thresholds that indicate a significant increase in credit risk are determined for each portfolio separately as the ratio of the latest changes in the lifetime probability of default (lifetime PD) to the portfolio's past lifetime PD. Internal risk measurement systems, external credit ratings, and risk forecasts are also used to assess the credit risk of financial assets. The maximum value for these transfer thresholds is 200 percent.

There are also 3 qualitative transfer criteria: assets for which forbearance measures have been agreed, assets where the counterparty has been put on the watchlist for the early identification of risk, and assets where payments are more than 30 days past due. These also have significantly increased credit risk and are assigned to stage 2, unless they need to be assigned to stage 3. Payments being more than 30 days past due is deemed a backstop criterion because, as a rule, the other transfer criteria mean that financial assets are allocated to stage 2 well before payments become more than 30 days past due.

Assets with low credit risk and/or an investment-grade credit rating are also monitored for increases in credit risk and for credit rating changes. If the quantitative transfer threshold is exceeded, however, the low credit risk exemption means that these assets are transferred to stage 2 only if a qualitative transfer criterion applies or if a non-investment-grade credit rating is awarded. The low credit risk exemption applies to securities.

If, on the balance sheet date, it is found that there is no longer a significant increase in credit risk compared with previous balance sheet dates, the financial assets in question are transferred back to stage 1 and the loss allowances are brought back down to the level of the 12-month expected credit loss. If a financial instrument in stage 3 recovers, the difference between the interest income determined for the period of credit impairment on the basis of amortized cost and the actual interest income recognized in respect of the financial instrument for the period concerned is reported as a reversal of an impairment loss or a reversal of loss allowances. A transfer back from stage 3 is carried out if there are no longer indicators of credit impairment. As there is assumed to be a methodological correlation between stage 3 and default status, the transfer back from stage 3 always takes place when the default status ceases to apply due to recovery of the financial instrument.

Expected losses are calculated as the probability-weighted present value of the expected outstanding payments. In the case of transactions assigned to stage 1 of the impairment model, the analysis period is the next 12 months. For stage 2 transactions, the residual life is used. The expected losses are discounted with the original effective interest rate for the transaction and variable-rate assets with the current interest rate. The calculation uses the regulatory model (probability of default, loss given default, and expected loan amount at the time of default), with adjustments to satisfy the requirements of IFRS 9. The estimated parameters incorporate historical, current, and forward-looking default information. This is applied when loss allowances are determined, in the form of shifts in the default probabilities calculated using statistical methods (known as shift factors). Depending on the portfolio and exposure amount, the calculation of the expected loss for specific exposures in stage 3 also uses this type of parameter-based approach or draws on individual expert appraisals of the expected cash flows and probability-weighted scenarios at individual transaction level.

For the purpose of calculating loss allowances for portfolios, the portfolios are grouped according to shared credit risk characteristics, e.g. credit rating, date of origination, residual life, industry and origin of the borrower, and type of asset.

Directly recognized impairment losses reduce the carrying amounts of assets directly. Unlike loss allowances, which are estimates, directly recognized impairment losses are specified in an exact amount if this is justified because the receivable is not collectible (e.g. as a result of the notification of an insolvency ratio). Impairment losses can be recognized directly by writing down the asset value and/or by using existing loss allowances. As a rule, asset values are written down directly after all recovery and enforcement measures have been completed. Directly recognized impairment losses are also applied to immaterial amounts.

Post-model adjustments are carried out in the retail consumer finance business because, for various input parameters in the loss allowance model, it is assumed that developments observable in the past are no longer fully representative of future developments. The evaluation for 2023 shows that the impact of insolvency law reforms and the previously anticipated increase in insolvency rates were overestimated, which meant that the post-model adjustments made in this context have been reduced. The amount for the Austria portfolio has also been reduced as a new sales scorecard has been used for new business in this portfolio since March 2023 and provides a better picture of credit risk in the portfolio. It is also evident that the uncertainties arising from the short observation period for group contagion in the definition of default have an only immaterial impact on credit risk. Consequently, the associated contribution to the post-model adjustment was fully reversed in the year under review. Conversely, a new post-model adjustment of €9 million was recognized in 2023 because the 12-month probability of default for loans issued in the sales segment is underestimated by the sales scorecard in Germany. Taking account of portfolio growth and an increase in risk, the updating of the post-model adjustments resulted in an overall reduction in loss allowances of €21 million recognized in profit or loss in 2023 and thus led to a post-model adjustment volume of €46 million as at the reporting date (December 31, 2022: €67 million).

Impact of macroeconomic conditions

The established models and processes for calculating expected losses on specific exposures or at portfolio level in line with IFRS 9 have generally been retained. The impact of geopolitical risks is also examined at specific exposure level. Primary effects due to customer or supplier relationships and secondary effects such as rising energy prices are considered as part of impact analyses. These effects are factored into the calculation of specific loan loss allowances and, in a more nuanced manner, in the credit assessment and in decisions concerning inclusion in watchlists for the early identification of risk. At portfolio level, the forecast macroeconomic conditions are taken into account by adjusting the model-driven default probability profiles used in economic and regulatory risk management on the basis of shift factors.

The macroeconomic scenarios specifically look at future trends in the labor market, interest rates in the money market, changes in gross domestic product, inflation, real estate prices, and energy prices and are primarily based on economic forecasts provided by the Economic Roundtable, which is made up of representatives from the entities in the DZ BANK Group. The Economic Roundtable considers various scenarios when deciding on its macroeconomic forecasts. At a minimum, these scenarios must include a baseline scenario and a risk scenario that have a significant probability of occurrence in a relevant macroeconomic environment. The Economic Roundtable participants determine the probability of occurrence of the scenarios relative to each other.

The shift factors used as at December 31, 2023 are based on 2 macroeconomic scenarios developed by the Economic Roundtable of the DZ BANK Group in November 2023 (baseline scenario 80 percent and risk scenario 20 percent). The shift factors are then derived from macroeconomic inputs for various levels of default probability using stress test models that already existed or that were developed for IFRS 9.

The risk parameters adjusted on the basis of the macroeconomic scenarios are then factored into the calculation of loss allowances.

The methods and assumptions, including the forecasts, are validated regularly.

The main macroeconomic forecasts for 2024 to 2027 used to calculate the expected loss as at December 31, 2023 were as follows:

		2024		2025		2026		2027	
		Baseline	Risk	Baseline	Risk	Baseline	Risk	Baseline	Risk
DAX 40, Germany	Index	16,500	11,300	17,500	14,125	18,600	14,980	19,700	15,880
EURO STOXX 50, European Monetary Union (EMU)	Index	4,400	3,080	4,600	3,850	4,900	4,080	5,200	4,330
Unemployment rate, Germany	%	3.30	3.40	3.10	3.20	3.10	3.10	3.00	3.00
Harmonized unemployment rates, EU	%	6.10	6.20	5.90	6.00	5.90	5.90	5.80	5.80
Real GDP growth, Germany (seasonally and calendar-adjusted)	Compared with prior year (%)	0.80	-1.00	1.30	1.30	1.00	1.30	0.80	0.80
Real GDP growth, EU (seasonally and calendar-adjusted)	Compared with prior year (%)	1.20	-0.50	1.80	1.80	1.50	1.80	1.30	1.30
Consumer price index, Germany	Compared with prior year (%)	3.30	6.00	2.50	5.00	2.30	3.50	2.30	2.30
Oil price (Brent), USD/bbl	At year-end	95	110	90	100	85	90	80	90
Natural gas price, USD/MMBtu	At year-end	3.50	8.00	3.00	7.50	2.60	6.00	2.60	5.00
Commercial real estate price index, Germany	Compared with prior year (%)	-6.00	-7.50	-2.00	-7.50	0.00	-4.00	0.00	0.00
3m Euribor, EMU	%	3.40	4.80	2.60	4.15	2.50	3.30	2.50	3.30
10-year government bonds, Germany	%	2.75	3.50	2.75	3.75	2.75	3.50	2.75	3.25

On the basis of consultation with relevant experts, the shift factors determined using statistical methods were overridden again in 2023 in order to better represent the currently critical market situation. This ensures that the shift factors used are in line both with experts' expectations and with the forecast changes in macroeconomic factors for the calculation of expected losses. The methodology for the process of overriding the model shift factors at group level was virtually unchanged compared with December 31, 2022. Because the Economic Roundtable forecasts dated November 7, 2023 do not take account of the German Federal Constitutional Court's ruling in mid-November 2023 that the reallocation of unused COVID-19 funding to the climate fund is unconstitutional, all of the model's shift factors for 2024 were adjusted by a factor of 1.1. This is intended to account for a potential deterioration in the market situation given the current budget deficit of €60 billion. Plausibility of the shift factors at sector level was then tested by examining the degree to which sectors are affected. This aspect includes all identifiable material increases in risk resulting from current developments and factors influencing the economy that have yet to be included in the credit rating. These factors specifically include the war in Ukraine, other geopolitical risks, commodity shortages, supply chain difficulties, high inflation coupled with soaring energy prices, and the consideration of climate-related and environmental risks. Overall, additional loss allowances of €360 million were recognized as at December 31, 2023 due to the expert-led override of the shift factors determined using statistical methods.

The shifted lifetime PDs are then factored into the decision on stage assignment. An increase in the lifetime PDs resulting from the shift factors being overridden does not necessarily lead to a transfer to stage 2. Consequently, a second override was carried out for portfolios that were particularly affected. Unlike the first override component, this second override component resulted in a general stage 2 classification for all unimpaired exposures in certain sectors. Alongside the automotive supplier sector and the asset classes hotels, department stores, shopping malls, inner-city commercial properties, building contractors, project developers, and office real estate, which were classified as stage 2 as at December 31, 2022, the construction, home improvement store, and textile/clothing sectors were all added to stage 2 as at December 31, 2023. This decision reflects current macroeconomic developments, such as supply chain disruptions, high inflation (primarily persistently high energy prices and increased construction costs), unavailability of materials, the shortage of skilled workers, the rise in interest rates, the gloomy economic outlook, and a changed competitor structure. The fixed staging that had been in place at the end of 2022 was reviewed again in the fourth quarter of 2023 and, given the continued high level of uncertainty, was retained.

Climate and environmental parameters are included in the Economic Roundtable's scenario analysis. In the first instance, the focus is on carbon pricing, which is a factor in assessing macroeconomic variables. The scenarios devised by the Network for Greening the Financial System (NGFS), which show how climate change and action can affect key economic variables, are used in this context. In terms of the impact on macroeconomic variables, the Economic Roundtable's forecast table is based on the legal situation in Germany and the technical assumptions of the European Central Bank (ECB). The impact on macroeconomic variables has been minimal to date. The introduction of a carbon price should only have a minor to moderate increasing effect on the annual average rate of inflation in Germany and the eurozone. This price effect is already included in inflation rates. As the carbon price is not expected to rise significantly in either Germany or the eurozone in the next few years, the pressure on prices from climate parameters is expected to remain immaterial over the forecast period. The climate and environmental parameters currently have an only immaterial impact on loss allowances. The effects on loss allowances will be examined more closely in the context of planned sustainability initiatives.

Loss allowances and gross carrying amounts

In the DZ BANK Group, loss allowances are recognized for the classes 'financial assets measured at fair value', 'financial assets measured at amortized cost', 'finance leases', and 'financial guarantee contracts and loan commitments' in the amount of the expected credit losses. Trade receivables and contract assets that fall within the scope of IFRS 15 are assigned to the 'financial assets measured at amortized cost' class.

Financial assets measured at fair value

€ million	Stage 1 Loss allowances	Stage 1 Fair value	Stage 2 Loss allowances	Stage 2 Fair value	Stage 3 Loss allowances	Stage 3 Fair value
Balance as at Jan. 1, 2022	26	121,359	3	674	25	34
Restatements according to IAS 8	22	-	6	-	-	-
Balance restated as at Jan. 1, 2022	48	121,359	9	674	25	34
Addition/increase in loan drawdowns	11	22,807	1	166	-	-
Change to financial assets due to transfer between stages	4	-381	-4	372	-	9
Transfer from stage 1	-7	-1,877	7	1,873	-	5
Transfer from stage 2	12	1,496	-12	-1,500	-	5
Use of loss allowances/directly recognized impairment losses	-	-	-	-	-4	-4
Derecognitions and repayments	-25	-23,454	-15	-250	-	-8
Changes to models/risk parameters	1	-	32	-	4	-
Additions	23	-	35	-	4	-
Reversals	-22	-	-3	-	-	-
Modifications	-	2	-	-	-	-
Modification gains	-	2	-	-	-	-
Amortization, fair value changes, and other changes in measurement	-	-25,381	-	-172	-	-
Exchange differences and other changes	-	81	-	4	-	1
Deferred taxes	1	-	-5	-	-	-
Balance as at Dec. 31, 2022	41	95,034	17	795	25	32
Addition/increase in loan drawdowns	11	20,851	1	52	-	2
Change to financial assets due to transfer between stages	10	-1,191	-12	1,068	2	122
Transfer from stage 1	-4	-1,586	4	1,578	-	8
Transfer from stage 2	15	388	-16	-510	2	122
Transfer from stage 3	-	8	-	-	-	-8
Use of loss allowances/directly recognized impairment losses	-	-	-	-	-6	-6
Derecognitions and repayments	-10	-14,222	-1	-132	-	-9
Changes to models/risk parameters	-13	-	50	-	31	-
Additions	17	-	57	-	31	-
Reversals	-30	-	-8	-	-	-
Modifications	-	-1	-	-1	-	-
Modification losses	-	-1	-	-1	-	-
Amortization, fair value changes, and other changes in measurement	-	5,112	-	67	-	4
Exchange differences and other changes	-	-94	-	-1	-	-1
Changes in scope of consolidation	-	599	-	-	-	-
Addition of subsidiaries	-	599	-	-	-	-
Deferred taxes	1	-	-18	-	-13	-
Balance as at Dec. 31, 2023	**40**	**106,087**	**37**	**1,849**	**38**	**144**

Financial assets measured at amortized cost

	Stage 1		Stage 2		Stage 3		POCI assets	
€ million	Loss allowances	Gross carrying amount	Loss allowances	Gross carrying amount	Loss allowances	Gross carrying amount	Loss allowances	Gross carrying amount
Balance as at Jan. 1, 2022	282	376,209	374	17,187	1,267	2,870	13	90
Addition/increase in loan drawdowns	205	22,742,157	113	31,746	650	1,798	1	134
Change to financial assets due to transfer between stages	182	-23,064	-307	22,335	128	729	-	-
Transfer from stage 1	-69	-31,696	68	31,640	1	56	-	-
Transfer from stage 2	243	8,573	-397	-9,520	154	948	-	-
Transfer from stage 3	7	60	21	215	-27	-274	-	-
Use of loss allowances/directly recognized impairment losses	-	-1	-3	-	-318	-24	-4	-5
Derecognitions and repayments	-143	-22,707,324	-140	-33,280	-653	-2,694	-9	-111
Changes to models/risk parameters	-259	-	510	-	63	-	17	-
Additions	110	-	804	-	393	-	27	-
Reversals	-369	-	-294	-	-330	-	-10	-
Modifications	-	1	-	3	1	1	-	-
Modification gains	-	1	-	3	1	1	-	-
Amortization, fair value changes, and other changes in measurement	-	-639	-	-24	-	-34	-	-
Positive change in fair value of POCI assets	-	-	-	-	-	-	-	30
Exchange differences and other changes	-1	686	2	-16	46	70	1	5
Changes in the scope of consolidation	-	15	-	143	-	-	-	-
Addition of subsidiaries	-	15	-	143	-	-	-	-
Balance as at Dec. 31, 2022	266	388,040	548	38,094	1,185	2,716	18	142
Addition/increase in loan drawdowns	173	28,172,045	125	39,817	788	2,626	2	159
Change to financial assets due to transfer between stages	214	-8,095	-363	6,506	148	1,588	-	-
Transfer from stage 1	-56	-14,384	55	14,250	2	134	-	-
Transfer from stage 2	265	6,250	-444	-7,982	179	1,732	-	-
Transfer from stage 3	5	40	27	238	-32	-278	-	-
Use of loss allowances/directly recognized impairment losses	-	-	-2	-	-199	-47	-5	-8
Reclassifications to non-current assets and disposal groups classified as held for sale	-8	-1,560	-2	-115	-15	-30	-	-
Derecognitions and repayments	-147	-28,152,706	-170	-42,427	-775	-3,544	-10	-199
Changes to models/risk parameters	-234	-	370	-	306	-	18	-
Additions	130	-	796	-	534	-	29	-
Reversals	-364	-	-426	-	-228	-	-11	-
Modifications	-	-1	-	2	1	1	-	-
Modification gains	-	2	-	2	2	2	-	-
Modification losses	-	-3	-	-1	-	-	-	-
Amortization, fair value changes, and other changes in measurement	-	-68	-	-9	-	-10	-	-
Positive change in fair value of POCI assets	-	-	-	-	-	-	-	34
Exchange differences and other changes	-3	-55	-1	-8	17	24	-5	5
Changes in the scope of consolidation	-	7	-	107	-	-	-	-
Addition of subsidiaries	-	7	-	107	-	-	-	-
Balance as at Dec. 31, 2023	**263**	**397,607**	**506**	**41,967**	**1,457**	**3,325**	**18**	**133**

The undiscounted expected credit losses on purchased or originated credit-impaired assets that were recognized for the first time during the reporting period totaled €163 million (2022: €181 million).

Finance leases

€ million	Stage 1 Loss allowances	Stage 1 Gross carrying amount	Stage 2 Loss allowances	Stage 2 Gross carrying amount	Stage 3 Loss allowances	Stage 3 Gross carrying amount
Balance as at Jan. 1, 2022	2	548	6	176	14	29
Addition/increase in loan drawdowns	3	151	5	7	14	2
Change to finance leases due to transfer between stages	-	-6	-1	6	-1	-
Transfer from stage 1	-1	-101	1	100	-	1
Transfer from stage 2	1	95	-2	-102	2	7
Transfer from stage 3	-	1	1	7	-3	-8
Derecognitions and repayments	-3	-258	-7	-77	-18	-11
Balance as at Dec. 31, 2022	1	435	3	111	9	19
Addition/increase in loan drawdowns	2	154	3	6	3	1
Change to finance leases due to transfer between stages	-	15	1	-8	-1	-6
Transfer from stage 1	-	-76	-	75	-	-
Transfer from stage 2	1	90	-1	-97	1	7
Transfer from stage 3	-	-	2	13	-2	-13
Reclassifications to non-current assets and disposal groups classified as held for sale	-	-1	-	-	-	-
Derecognitions and repayments	-2	-209	-4	-45	-8	-8
Balance as at Dec. 31, 2023	**1**	**394**	**3**	**63**	**3**	**6**

Financial guarantee contracts and loan commitments

€ million	Stage 1 Loss allowances	Stage 1 Nominal amount	Stage 2 Loss allowances	Stage 2 Nominal amount	Stage 3 Loss allowances	Stage 3 Nominal amount	POCI assets Loss allowances	POCI assets Nominal amount
Balance as at Jan. 1, 2022	63	79,176	39	3,155	110	271	1	2
Addition/increase in loan drawdowns	83	105,380	69	7,101	68	342	5	8
Change to financial guarantee contracts and loan commitments due to transfer between stages	1	-3,947	-2	3,866	1	81	-	-
Transfer from stage 1	-9	-4,764	8	4,736	-	28	-	-
Transfer from stage 2	9	811	-11	-874	1	64	-	-
Transfer from stage 3	-	6	-	4	-1	-10	-	-
Derecognitions and repayments	-80	-100,024	-49	-6,466	-106	-450	-5	-9
Changes to models/risk parameters	-14	-	37	-	22	-	-1	-
Additions	23	-	70	-	64	-	2	-
Reversals	-37	-	-34	-	-42	-	-3	-
Amortization, fair value changes, and other changes in measurement	-	101	-	8	-	-3	-	-
Exchange differences and other changes	-	-214	-	240	-5	1	-	-
Balance as at Dec. 31, 2022	53	80,472	95	7,903	89	242	-	2
Addition/increase in loan drawdowns	68	90,750	78	9,601	63	262	2	11
Change to financial guarantee contracts and loan commitments due to transfer between stages	23	-4,909	-39	4,723	16	186	-	-
Transfer from stage 1	-12	-5,943	12	5,914	-	28	-	-
Transfer from stage 2	35	1,031	-51	-1,194	16	163	-	-
Transfer from stage 3	-	2	-	3	-1	-5	-	-
Reclassifications to liabilities included in disposal groups classified as held for sale	-	-14	-	-	-	-	-	-
Derecognitions and repayments	-83	-85,459	-51	-10,176	-81	-356	-2	-5
Changes to models/risk parameters	-8	-	3	-	16	-	-	-
Additions	34	-	74	-	49	-	-	-
Reversals	-42	-	-71	-	-33	-	-	-
Amortization, fair value changes, and other changes in measurement	-	-69	-	-5	-	-2	-	-
Exchange differences and other changes	-	160	-1	12	2	-	-	-
Balance as at Dec. 31, 2023	**54**	**80,932**	**85**	**12,056**	**104**	**332**	**-**	**7**

Contractual modifications and derecognitions

The negotiation or modification of contractually agreed cash flows relating to a financial asset leads to a modified asset.

In the case of modifications that do not lead to the derecognition of the financial asset (non-substantial contractual modifications), the modifications of the contractually agreed cash flows are recognized in profit or loss as a modification gain or loss in the amount of the difference between the original gross carrying amount (taking account of any amortization or impairment) and the modified present value, calculated on the basis of the modified cash flows discounted with the original effective interest rate. If contractual modifications are credit-risk-related non-substantial contractual modifications, previously recognized loss allowances are used in the first instance. Any remaining difference is recognized under gains/losses from loss allowances. Gains/losses from market-related non-substantial contractual modifications are recognized as a modification gain or loss within net interest income.

If substantial modifications are made to the contract for a financial asset, the existing financial asset is derecognized and a new financial asset is recognized. These modifications are recognized in gains/losses from loss allowances. When the financial asset is derecognized, the previously recognized loss allowance is then used. The derecognition may potentially result in gains or losses on derecognition.

In 2023, contractually agreed cash flows from financial assets allocated to stage 2 or stage 3 of the impairment model were modified. The amortized costs of these financial assets amounted to €633 million (2022: €341 million). The modifications resulted in a modification loss of €1 million (2022: modification gain of €2 million).

The gross carrying amount of financial assets whose contractually agreed cash flows were modified and that had been allocated to stage 2 or stage 3 in the impairment model since initial recognition but were transferred to stage 1 during the reporting period amounted to €15 million (December 31, 2022: €124 million). Across all classes, the outstanding contractually agreed amount for financial assets on which impairment was recognized in the reporting year and that are still subject to enforcement measures stood at €97 million as at the reporting date (December 31, 2022: €78 million).

Maximum exposure to credit risk

The DZ BANK Group is exposed to credit risk from financial instruments. The maximum exposure to credit risk is represented by the fair value, amortized cost, or nominal amount of financial instruments. The following collateral is held to reduce the exposure to this maximum credit risk:

AS AT DECEMBER 31, 2023

€ million	Maximum exposure to credit risk	
FINANCIAL ASSETS MEASURED AT FAIR VALUE	**160,614**	
Financial assets measured at fair value through profit or loss	**52,534**	
Financial assets mandatorily measured at fair value through profit or loss	47,519	
Financial assets designated as at fair value through profit or loss	5,015	
Financial assets measured at fair value through other comprehensive income	**108,080**	
Financial assets mandatorily measured at fair value through other comprehensive income	108,080	
of which credit-impaired		
FINANCIAL ASSETS MEASURED AT AMORTIZED COST	**438,399**	
of which credit-impaired		
FINANCE LEASES	**456**	
of which credit-impaired		
FINANCIAL GUARANTEE CONTRACTS AND LOAN COMMITMENTS	**93,873**	
of which credit-impaired		

AS AT DECEMBER 31, 2023

€ million	Maximum exposure to credit risk	
Non-current assets and disposal groups classified as held for sale from financial assets measured at fair value	48	
Non-current assets and disposal groups classified as held for sale from financial assets measured at amortized cost	1,680	
Non-current assets and disposal groups classified as held for sale from finance leases	1	
Liabilities included in disposal groups classified as held for sale from financial guarantee contracts and loan commitments	14	

	of which secured with:					
	Guarantees, indemnities, risk subparticipations	Credit insurance	Land charges, mortgages, registered ship and aircraft mortgages	Pledged loans and advances, assignments, other pledged assets	Financial collateral	Other collateral
	1,749	**-**	**13,368**	**428**	**4,528**	**1,455**
	304	**-**	**1**	**7**	**382**	**1**
	29	-	1	7	382	-
	275	-	-	-	-	1
	1,445	**-**	**13,367**	**421**	**4,146**	**1,454**
	1,445	-	13,367	421	4,146	1,454
	-	-	50	-	-	-
	7,105	**3,895**	**112,041**	**1,375**	**9,490**	**1,792**
	106	276	758	112	67	1
	1	**-**	**-**	**9**	**-**	**-**
	1	-	-	2	-	-
	220	**2,063**	**2,385**	**515**	**32**	**8**
	39	69	33	18	-	-

	of which secured with:					
	Guarantees, indemnities, risk subparticipations	Credit insurance	Land charges, mortgages, registered ship and aircraft mortgages	Pledged loans and advances, assignments, other pledged assets	Financial collateral	Other collateral
	-	-	-	-	-	-
	-	-	1,218	-	24	-
	-	-	-	-	-	-
	-	-	11	-	-	-

AS AT DECEMBER 31, 2022

€ million	Maximum exposure to credit risk	
FINANCIAL ASSETS MEASURED AT FAIR VALUE	162,547	
Financial assets measured at fair value through profit or loss	66,686	
Financial assets mandatorily measured at fair value through profit or loss	61,258	
Financial assets designated as at fair value through profit or loss	5,428	
Financial assets measured at fair value through other comprehensive income	95,861	
Financial assets mandatorily measured at fair value through other comprehensive income	95,861	
of which credit-impaired		
FINANCIAL ASSETS MEASURED AT AMORTIZED COST	422,802	
of which credit-impaired		
FINANCE LEASES	552	
of which credit-impaired		
FINANCIAL GUARANTEE CONTRACTS AND LOAN COMMITMENTS	89,246	
of which credit-impaired		

AS AT DECEMBER 31, 2022

€ million	Maximum exposure to credit risk	
Non-current assets and disposal groups classified as held for sale from financial assets measured at fair value	19	

	of which secured with:					
	Guarantees, indemnities, risk subparticipations	Credit insurance	Land charges, mortgages, registered ship and aircraft mortgages	Pledged loans and advances, assignments, other pledged assets	Financial collateral	Other collateral
	1,490	**-**	**12,372**	**372**	**3,356**	**932**
	311	**-**	**1**	**11**	**686**	**-**
	17	-	1	11	686	-
	294	-	-	-	-	-
	1,179	**-**	**12,371**	**361**	**2,670**	**932**
	1,179	-	12,371	361	2,670	932
	-	-	30	-	-	-
	7,720	**3,698**	**112,480**	**1,632**	**9,143**	**2,551**
	142	219	479	136	61	1
	5	**-**	**-**	**20**	**-**	**-**
	5	-	-	4	-	-
	178	**1,846**	**4,382**	**662**	**8**	**4**
	8	-	17	16	-	-

	of which secured with:					
	Guarantees, indemnities, risk subparticipations	Credit insurance	Land charges, mortgages, registered ship and aircraft mortgages	Pledged loans and advances, assignments, other pledged assets	Financial collateral	Other collateral
	-	-	-	-	-	-

A range of different collateral is held in the traditional lending business to reduce the exposure to the maximum credit risk. Specifically, this collateral includes mortgages on residential and commercial real estate, guarantees (including indemnities and credit insurance), financial security (e.g. certain fixed-income securities, shares, and investment fund units), blanket and individual assignments of trade receivables, and various types of physical collateral. Generally, cash collateral, high-quality government bonds, and Pfandbriefe are held in the trading business in accordance with the collateral policy to reduce the risk attaching to OTC derivatives. Some financial instruments in stage 3 are not written down because they are fully covered by collateral.

A residual value method is used to determine changes in fair value attributable to changes in credit risk. As a result of changes in credit risk, the fair value of financial assets designated as at fair value through profit or loss had fallen by €43 million at the end of 2023 (December 31, 2022: increase of €40 million). The cumulative gains/losses resulting from the change in fair values attributable to changes in credit risk amounted to a net loss of €78 million (December 31, 2022: net loss of €24 million).

The credit risk associated with financial assets designated as at fair value through profit or loss was mitigated as at the reporting date by financial guarantee contracts with a value of €90 million (December 31, 2022: €101 million) furnished by affiliated banks.

Credit risk concentrations

The credit risk from financial instruments to which the DZ BANK Group is exposed is broken down by sector using the Deutsche Bundesbank industry codes and by geographic region using the annually updated country groups published by the International Monetary Fund (IMF). Volumes, measured on the basis of fair values and gross carrying amounts of financial assets and the credit risk from financial guarantee contracts and loan commitments, are broken down using the following credit rating classes:

- Investment grade: equates to internal rating classes 1A–3A
- Non-investment grade: equates to internal rating classes 3B–4E
- Default: equates to internal rating classes 5A–5E
- Not rated: no rating necessary or not classified

‘Not rated’ comprises counterparties for which a rating classification is not required.

AS AT DECEMBER 31, 2023

€ million		Financial sector	Public sector	Corporates	Retail	Industry conglomerates	Other
Investment grade							
Fair value	Stage 1	48,931	26,779	14,711	11,002	1,587	15
	Stage 2	-	-	1,349	-	-	112
Gross carrying amount	Stage 1	234,515	13,512	46,854	61,493	6,272	-
	Stage 2	1,977	4	23,350	1,075	3,978	-
	POCI assets	-	-	4	-	-	-
Nominal amount	Stage 1	35,541	246	25,286	4,039	3,884	43
	Stage 2	17	-	7,474	4	83	-
Non-investment grade							
Fair value	Stage 1	-	763	668	-	-	-
	Stage 2	14	77	267	16	-	-
	Stage 3	-	-	13	-	-	-
Gross carrying amount	Stage 1	956	169	8,008	12,674	9	-
	Stage 2	362	-	5,201	2,828	16	-
	Stage 3	-	-	40	-	-	-
	POCI assets	-	-	3	-	-	-
Nominal amount	Stage 1	378	389	4,297	837	-	-
	Stage 2	227	-	3,581	49	51	-
	Stage 3	-	-	2	-	-	-

AS AT DECEMBER 31, 2022

€ million		Financial sector	Public sector	Corporates	Retail	Industry conglomerates	Other
Investment grade							
Fair value	Stage 1	43,547	23,122	12,770	10,045	2,013	115
	Stage 2	210	-	177	-	-	-
Gross carrying amount	Stage 1	221,793	14,823	48,128	59,847	6,019	-
	Stage 2	1,407	-	19,660	1,315	5,163	-
	POCI assets	-	-	5	-	-	-
Nominal amount	Stage 1	31,919	171	24,761	5,984	3,646	51
	Stage 2	30	-	4,082	6	60	-
Non-investment grade							
Fair value	Stage 1	-	789	557	874	-	-
	Stage 2	42	144	196	26	-	-
Gross carrying amount	Stage 1	1,705	134	9,504	13,270	20	-
	Stage 2	389	230	4,635	2,771	26	-
	Stage 3	-	-	-	9	-	-
Nominal amount	Stage 1	539	159	5,574	1,466	-	-
	Stage 2	161	336	2,770	72	57	-

AS AT DECEMBER 31, 2023

€ million		Financial sector	Public sector	Corporates	Retail	Industry conglomerates	Other
Default							
Fair value	Stage 3	12	-	105	14	-	-
Gross carrying amount	Stage 3	268	33	1,948	536	87	-
	POCI assets	1	-	57	-	-	-
Nominal amount	Stage 3	2	72	247	8	-	-
	POCI assets	-	-	7	-	-	-
Not rated							
Fair value	Stage 1	906	362	67	-	298	-
	Stage 2	15	-	-	-	-	-
Gross carrying amount	Stage 1	2,856	121	2,104	8,211	246	-
	Stage 2	1,008	3	861	1,112	224	31
	Stage 3	1	-	11	407	-	-
	POCI assets	-	-	-	68	-	-
Nominal amount	Stage 1	933	-	1,550	3,511	-	-
	Stage 2	308	-	166	94	-	-
	Stage 3	-	-	-	1	-	-

AS AT DECEMBER 31, 2022

€ million		Financial sector	Public sector	Corporates	Retail	Industry conglomerates	Other
Default							
Fair value	Stage 3	15	-	8	9	-	-
Gross carrying amount	Stage 3	344	7	1,345	595	97	-
	POCI assets	-	-	77	-	-	-
Nominal amount	Stage 3	23	-	202	13	-	-
	POCI assets	-	-	2	-	-	-
Not rated							
Fair value	Stage 1	929	70	50	-	152	-
Gross carrying amount	Stage 1	2,047	181	2,625	8,274	106	-
	Stage 2	989	43	308	1,021	220	27
	Stage 3	-	-	6	333	-	-
	POCI assets	-	-	-	61	-	-
Nominal amount	Stage 1	1,301	-	1,871	3,011	20	-
	Stage 2	34	-	196	98	-	-
	Stage 3	-	-	3	1	-	-

AS AT DECEMBER 31, 2023

€ million		Germany	Other industrialized countries	Advanced economies	Emerging markets	Supranational institutions
Investment grade						
Fair value	Stage 1	37,453	54,483	1,658	3,496	5,934
	Stage 2	609	829	-	23	-
Gross carrying amount	Stage 1	325,199	33,006	1,198	2,472	772
	Stage 2	27,338	2,931	66	50	-
	POCI assets	4	-	-	-	-
Nominal amount	Stage 1	59,800	8,421	163	654	-
	Stage 2	6,877	682	12	8	-
Non-investment grade						
Fair value	Stage 1	124	497	12	798	-
	Stage 2	154	118	-	102	-
	Stage 3	-	13	-	-	-
Gross carrying amount	Stage 1	18,214	1,032	126	2,445	-
	Stage 2	6,854	796	29	727	-
	Stage 3	40	-	-	-	-
	POCI assets	3	-	-	-	-
Nominal amount	Stage 1	3,458	1,074	172	1,196	-
	Stage 2	2,146	1,336	7	420	-
	Stage 3	2	-	-	-	-

AS AT DECEMBER 31, 2022

€ million		Germany	Other industrialized countries	Advanced economies	Emerging markets	Supranational institutions
Investment grade						
Fair value	Stage 1	34,327	48,375	1,535	2,991	4,382
	Stage 2	229	158	-	-	-
Gross carrying amount	Stage 1	311,896	35,625	1,119	1,304	665
	Stage 2	25,774	1,701	70	-	-
	POCI assets	5	-	-	-	-
Nominal amount	Stage 1	57,751	8,101	177	501	-
	Stage 2	4,006	172	-	-	-
Non-investment grade						
Fair value	Stage 1	540	791	13	877	-
	Stage 2	145	164	-	100	-
Gross carrying amount	Stage 1	19,925	1,484	82	3,142	-
	Stage 2	6,349	701	95	906	-
	Stage 3	-	10	-	-	-
Nominal amount	Stage 1	5,899	576	179	1,084	-
	Stage 2	1,824	873	22	677	-

AS AT DECEMBER 31, 2023

€ million		Germany	Other industrialized countries	Advanced economies	Emerging markets	Supranational institutions
Default						
Fair value	Stage 3	118	12	-	-	-
Gross carrying amount	Stage 3	2,244	173	56	399	-
	POCI assets	58	-	-	-	-
Nominal amount	Stage 3	210	-	21	99	-
	POCI assets	7	-	-	-	-
Not rated						
Fair value	Stage 1	127	1,198	23	-	285
	Stage 2	-	15	-	-	-
Gross carrying amount	Stage 1	10,213	2,887	19	385	35
	Stage 2	2,295	774	1	168	-
	Stage 3	339	78	-	2	-
	POCI assets	60	7	-	-	-
Nominal amount	Stage 1	4,858	1,056	-	79	-
	Stage 2	417	77	-	76	-
	Stage 3	1	-	-	-	-

AS AT DECEMBER 31, 2022

€ million		Germany	Other industrialized countries	Advanced economies	Emerging markets	Supranational institutions
Default						
Fair value	Stage 3	9	23	-	-	-
Gross carrying amount	Stage 3	1,723	274	66	324	-
	POCI assets	52	14	7	4	-
Nominal amount	Stage 3	201	-	2	35	-
	POCI assets	2	-	-	-	-
Not rated						
Fair value	Stage 1	76	1,125	-	-	-
Gross carrying amount	Stage 1	10,539	2,209	3	447	35
	Stage 2	1,754	772	7	77	-
	Stage 3	285	53	-	-	-
	POCI assets	56	5	-	-	-
Nominal amount	Stage 1	5,168	814	-	221	-
	Stage 2	317	11	-	-	-
	Stage 3	4	-	-	-	-

» 87 Maturity analysis

AS AT DECEMBER 31, 2023

€ million	≤ 1 month	> 1 month – 3 months	> 3 months – 1 year	> 1 year – 5 years	> 5 years	Indefinite
Financial assets	**141,216**	**18,463**	**45,238**	**191,409**	**258,230**	**24,743**
Cash and cash equivalents	101,463	-	-	-	-	-
Loans and advances to banks	11,640	5,138	14,931	53,244	51,440	-
Loans and advances to customers	21,192	7,608	21,404	84,468	94,855	19
Derivatives used for hedging (positive fair values)	19	30	135	386	403	-
Financial assets held for trading	3,696	3,195	3,018	9,882	13,842	1,718
of which non-derivative financial assets held for trading	3,342	2,749	1,860	4,613	4,531	1,718
of which derivatives (positive fair values)	354	446	1,157	5,269	9,311	-
Investments	713	1,285	2,481	22,589	22,440	3,293
Investments held by insurance companies	522	1,157	3,149	20,839	75,249	19,636
of which non-derivative investments held by insurance companies	497	1,081	3,056	20,787	75,147	19,636
of which derivatives (positive fair values)	25	76	93	52	102	-
Other assets	1,971	50	120	2	-	75
Financial liabilities	**-137,970**	**-19,037**	**-55,465**	**-116,325**	**-113,417**	**-67,824**
Deposits from banks	-64,904	-6,518	-18,554	-45,644	-41,947	-433
Deposits from customers	-62,872	-4,743	-8,200	-6,251	-17,391	-63,821
Debt certificates issued including bonds	-5,062	-5,464	-22,868	-43,306	-32,728	-
Derivatives used for hedging (negative fair values)	-8	-28	-101	-253	-260	-
Financial liabilities held for trading	-4,629	-1,829	-5,266	-18,751	-16,288	-1,152
of which non-derivative financial liabilities held for trading	-4,204	-1,009	-3,326	-14,563	-6,290	-1,152
of which derivatives (negative fair values)	-425	-820	-1,940	-4,188	-9,998	-
Other liabilities	-489	-447	-227	-764	-1,091	-2,394
of which non-derivative other liabilities	-317	-436	-217	-740	-1,037	-2,392
of which derivatives (negative fair values)	-172	-11	-10	-24	-54	-2
Subordinated capital	-6	-9	-249	-1,355	-3,711	-25
Financial guarantee contracts and loan commitments	**-86,755**	**-316**	**-449**	**-1,330**	**-124**	**-4,353**
Financial guarantee contracts	-11,278	-42	-77	-21	-4	-18
Loan commitments	-75,476	-274	-372	-1,309	-120	-4,335

AS AT DECEMBER 31, 2022

€ million	≤ 1 month	> 1 month – 3 months	> 3 months – 1 year	> 1 year – 5 years	> 5 years	Indefinite
Financial assets	**150,564**	**17,399**	**44,667**	**173,268**	**257,421**	**23,969**
Cash and cash equivalents	93,405	-	-	-	-	-
Loans and advances to banks	17,129	5,566	14,031	43,786	48,092	-
Loans and advances to customers	22,276	7,210	19,375	80,322	97,506	20
Derivatives used for hedging (positive fair values)	-	6	150	880	666	-
Financial assets held for trading	13,550	2,840	4,685	9,631	17,602	1,179
of which non-derivative financial assets held for trading	13,195	1,815	2,854	3,049	5,343	1,179
of which derivatives (positive fair values)	355	1,025	1,831	6,582	12,260	-
Investments	1,466	987	3,663	20,504	19,673	2,670
Investments held by insurance companies	710	783	2,647	18,145	73,881	20,041
of which non-derivative investments held by insurance companies	680	705	2,453	17,983	73,719	20,039
of which derivatives (positive fair values)	31	78	193	162	161	2
Other assets	2,027	8	116	-	1	60
Financial liabilities	**-131,223**	**-24,555**	**-39,929**	**-121,259**	**-113,853**	**-70,685**
Deposits from banks	-64,436	-7,980	-16,613	-58,412	-40,475	-1,275
Deposits from customers	-59,912	-6,884	-6,778	-7,379	-15,525	-66,751
Debt certificates issued including bonds	-4,570	-7,773	-10,057	-31,879	-30,400	-
Derivatives used for hedging (negative fair values)	-5	-7	-81	-242	-134	-
Financial liabilities held for trading	-1,635	-1,615	-5,452	-21,437	-22,685	-425
of which non-derivative financial liabilities held for trading	-584	-754	-3,219	-13,912	-6,943	-425
of which derivatives (negative fair values)	-1,052	-861	-2,233	-7,525	-15,741	-
Other liabilities	-665	-259	-326	-669	-984	-2,208
of which non-derivative other liabilities	-381	-249	-306	-643	-893	-2,207
of which derivatives (negative fair values)	-284	-10	-20	-26	-91	-1
Subordinated capital	-1	-37	-622	-1,241	-3,651	-25
Financial guarantee contracts and loan commitments	**-81,837**	**-504**	**-432**	**-2,012**	**-12**	**-3,821**
Financial guarantee contracts	-10,402	-60	-3	-108	-4	-28
Loan commitments	-71,435	-444	-429	-1,904	-8	-3,793

The maturity analysis shows contractually agreed cash inflows with a plus sign and contractually agreed cash outflows with a minus sign. In the case of financial guarantee contracts and loan commitments, the potential cash outflows are shown.

The contractual maturities do not match the estimated actual cash inflows and cash outflows, especially in the case of financial guarantee contracts and loan commitments. The management of liquidity risk based on expected and unexpected cash flows is described in chapter VII.6.2.5 ‘Risk management’ of the risk report in the group management report.

The maturity analysis for lease liabilities in accordance with IFRS 16.58 is presented in note 102.

» 88 Issuance activity

The following table shows the new issues, early repurchases, and repayments upon maturity in connection with issuance activity for unregistered paper, broken down by line item.

	2023			2022		
€ million	New issues	Repur-chases	Repayments	New issues	Repur-chases	Repayments
DEBT CERTIFICATES ISSUED INCLUDING BONDS	**108,948**	**-2,085**	**-86,464**	43,753	-2,250	-36,388
Bonds issued	**29,321**	**-2,075**	**-8,532**	12,243	-2,235	-6,409
Mortgage Pfandbriefe	4,408	-57	-1,806	3,808	-67	-2,119
Public-sector Pfandbriefe	590	-	-223	-	-	-461
Other bonds	24,322	-2,019	-6,502	8,435	-2,169	-3,830
Other debt certificates issued	**79,627**	**-10**	**-77,933**	31,510	-14	-29,978
FINANCIAL LIABILITIES HELD FOR TRADING	**10,129**	**-552**	**-9,048**	6,679	-1,961	-6,238
SUBORDINATED CAPITAL	**253**	**-4**	**-263**	1,320	-3	-143
Total	**119,330**	**-2,642**	**-95,775**	51,752	-4,214	-42,768

The transactions shown under other debt certificates issued all relate to commercial paper. The transactions presented under financial liabilities held for trading are carried out using bonds issued, including share certificates, index-linked certificates, and other debt certificates. The transactions under subordinated capital are mainly carried out using subordinated bearer bonds.

F Insurance business disclosures

» 89 Insurance revenue

€ million	2023	2022
INSURANCE REVENUE NOT UNDER THE PREMIUM ALLOCATION APPROACH	**4,061**	**4,670**
Changes to the liability for remaining coverage that are recognized in profit or loss	**3,662**	**4,239**
Reversal of expected incurred claims and other insurance service expenses through profit or loss	2,293	2,347
Release of the risk adjustment through profit or loss	103	87
Recognition of the CSM in profit or loss based on provision of service	521	436
Experience adjustment for premium receipts	745	1,369
Amortization of insurance acquisition cash flows	**398**	**431**
INSURANCE REVENUE UNDER THE PREMIUM ALLOCATION APPROACH	**8,256**	**7,754**
Total	**12,317**	**12,424**

» 90 Presentation of income and expense in the insurance business

Insurance finance income or expenses, recognized in profit or loss and in other comprehensive income, from insurance contracts and reinsurance contracts

€ million	2023	2022
Insurance finance income or expenses from insurance contracts	**-7,845**	**20,453**
Changes in the fair value of underlying items relating to insurance contracts with direct participation features	-5,480	18,620
Interest accretion effects	-1,994	492
Effects of changes in the discount rate	-393	1,297
Foreign exchange gains and losses, net	22	43
Insurance finance income or expenses from reinsurance contracts held	**12**	**-**
Interest accretion effects	12	-
Total	**-7,832**	**20,453**
of which recognized in profit or loss	-4,087	2,001
of which recognized in other comprehensive income	-3,745	18,452

The portion of the net foreign exchange gains and losses recognized in profit or loss, which amounted to a net gain of €20 million (2022: net gain of €50 million), is included in other non-insurance gains and losses within gains and losses on investments held by insurance companies and other insurance company gains and losses in the income statement.

For insurance contracts with direct participation features, the option pursuant to IFRS 17.89(b) is exercised in order to minimize volatilities recognized in profit or loss by recognizing the pro rata insurance finance income or expenses in other comprehensive income. This is in line with the classification of investments held by insurance companies in accordance with IFRS 9, which are predominantly assigned to the category ‘financial assets measured at fair value through other comprehensive income’. Subsequent measurement of the underlying items provides the basis of calculation for recognition in other comprehensive income. With the gains and losses on the underlying items amounting to a net gain of €3,497 million (2022: net loss of €3,646 million), the amount recognized came to an expense of €2,951 million (2022: income of €3,307 million).

Measurement in other comprehensive income in accordance with IFRS 17.C19(b)(i) for insurance contracts without direct participation features comprises the change in the interest-rate structure of the locked-in yield curve compared with the yield curve as at the reporting date. Exercising the option of recognition in the reserve from other comprehensive income reduces the impact of the measurement-related volatilities of equity and liabilities on the income statement.

The effects recognized in profit or loss include, firstly, the effect of the time value of money resulting from discounting with the locked-in yield curve for insurance contracts without direct participation features and, secondly, the effect of changes in the time value of money resulting from insurance contracts with direct participation features whose underlying items are assigned to the category 'financial assets measured at fair value through profit or loss'. Insurance finance income or expenses also include the difference between the expected future payments covered by the liability for remaining coverage and the payments made in the financial year from business involving contracts with direct participation features.

Investment income recognized in other comprehensive income in connection with insurance contracts measured under the modified retrospective approach or the fair value approach

The reserve from other comprehensive income changed as a result of investment income in connection with insurance contracts measured under the modified retrospective approach or the fair value approach as follows:

€ million	**2023**	2022
Balance as at Jan. 1	-7,442	3,506
Net change in fair value recognized in other comprehensive income	2,750	-16,282
Reclassified to the income statement in the reporting period	241	355
Deferred taxes for the reporting period	-935	4,979
Balance as at Dec. 31	**-5,385**	**-7,442**

» 91 Change in the carrying amounts of insurance contract liabilities

The following tables show the change in the carrying amounts of the liability for remaining coverage and the liability for incurred claims:

€ million	Liability for remaining coverage		Liability for incurred claims			Total
	Excluding the loss component	Loss component	No premium allocation approach	Premium allocation approach: present value of expected cash flows	Premium allocation approach: risk adjustment	
Carrying amount of insurance contract assets as at Jan. 1, 2023	-3	-	2	-	-	-2
Carrying amount of insurance contract liabilities as at Jan. 1, 2023	86,353	387	3,842	7,655	90	98,328
Balance as at Jan. 1, 2023	86,350	387	3,843	7,655	90	98,326
OVERALL CHANGE RECOGNIZED IN PROFIT OR LOSS AND IN OTHER COMPREHENSIVE INCOME	**-4,551**	**77**	**2,820**	**7,342**	**2**	**5,691**
Insurance service result from insurance contracts	**-11,138**	**77**	**2,128**	**6,871**	**-12**	**-2,072**
Insurance revenue	***-12,317***	-	-	-	-	***-12,317***
Insurance contracts measured using the modified retrospective approach at the transition date	-4,041	-	-	-	-	-4,041
Insurance contracts measured using the fair value approach at the transition date	-259	-	-	-	-	-259
All other insurance contracts	-8,018	-	-	-	-	-8,018
Insurance service expenses	***1,179***	***77***	***2,128***	***6,871***	***-12***	***10,245***
Incurred claims and other insurance service expenses	-72	-	2,013	6,204	-16	8,129
Amortization of insurance acquisition cash flows	1,251	-	-	-	-	1,251
Changes in the fulfillment cash flows relating to the liability for incurred claims	-	-	116	668	4	787
Changes that relate to future service under onerous contracts	-	77	-	-	-	77
Expenses for/income from investment components	**499**	-	**440**	**80**	-	**1,019**
Insurance finance income or expenses	**6,233**	**1**	**201**	**399**	**15**	**6,848**
Other	**-145**	**-1**	**51**	**-9**	**-1**	**-104**
CONSOLIDATION EFFECTS	**22**	-	-	-	-	**22**
CHANGES RESULTING FROM CASH FLOWS	**10,747**	-	**-2,809**	**-6,827**	-	**1,110**
Premium income	18,116	-	-	-	-	18,116
Insurance acquisition cash flows	-1,407	-	-	-	-	-1,407
Incurred claims paid and other insurance service expenses paid	-5,962	-	-2,809	-6,827	-	-15,599
Balance as at Dec. 31, 2023	**92,568**	**464**	**3,854**	**8,170**	**92**	**105,149**
Carrying amount of insurance contract assets as at Dec. 31, 2023	-1	-	-	-	-	-1
Carrying amount of insurance contract liabilities as at Dec. 31, 2023	92,568	464	3,854	8,170	92	105,150

€ million	Liability for remaining coverage		Liability for incurred claims			Total
	Excluding the loss component	Loss component	No premium allocation approach	Premium allocation approach: present value of expected cash flows	Premium allocation approach: risk adjustment	
Carrying amount of insurance contract assets as at Jan. 1, 2022	-2	-	2	-	-	-
Carrying amount of insurance contract liabilities as at Jan. 1, 2022	105,257	436	4,201	8,122	97	118,113
Balance as at Jan. 1, 2022	105,255	436	4,202	8,122	97	118,112
OVERALL CHANGE RECOGNIZED IN PROFIT OR LOSS AND IN OTHER COMPREHENSIVE INCOME	**-31,083**	**-49**	**2,626**	**5,938**	**-7**	**-22,574**
Insurance service result from insurance contracts	-11,263	-51	2,697	6,415	3	**-2,199**
Insurance revenue	*-12,424*	-	-	-	-	***-12,424***
Insurance contracts measured using the modified retrospective approach at the transition date	-9,554	-	-	-	-	-9,554
Insurance contracts measured using the fair value approach at the transition date	-62	-	-	-	-	-62
All other insurance contracts	-2,808	-	-	-	-	-2,808
Insurance service expenses	*1,161*	*-51*	*2,697*	*6,415*	*3*	***10,225***
Incurred claims and other insurance service expenses	-10	-	2,396	5,727	-1	8,113
Amortization of insurance acquisition cash flows	1,170	-	-	-	-	1,170
Changes in the fulfillment cash flows relating to the liability for incurred claims	-	-	301	688	4	992
Changes that relate to future service under onerous contracts	-	-51	-	-	-	-51
Expenses for/income from investment components	-539	-	432	94	-	**-14**
Insurance finance income or expenses	-19,359	1	-424	-604	-9	**-20,395**
Other	79	1	-79	33	-	**34**
CONSOLIDATION EFFECTS	**96**	-	-	-	-	**96**
CHANGES RESULTING FROM CASH FLOWS	**12,082**	-	**-2,985**	**-6,406**	-	**2,692**
Premium income	18,039	-	-	-	-	18,039
Insurance acquisition cash flows	-1,439	-	-	-	-	-1,439
Incurred claims paid and other insurance service expenses paid	-4,518	-	-2,985	-6,406	-	-13,909
Balance as at Dec. 31, 2022	**86,350**	**387**	**3,843**	**7,655**	**90**	**98,326**
Carrying amount of insurance contract assets as at Dec. 31, 2022	-3	-	2	-	-	-2
Carrying amount of insurance contract liabilities as at Dec. 31, 2022	86,353	387	3,842	7,655	90	98,328

The following tables show the change in the carrying amounts of the reinsurance contract assets relating to the liability for remaining coverage and the liability for incurred claims:

	Liability for remaining coverage		Liability for incurred claims			Total
€ million	Excluding the loss component	Loss component	No premium allocation approach	Premium allocation approach: present value of expected cash flows	Premium allocation approach: risk adjustment	
Carrying amount of reinsurance contract assets as at Jan. 1, 2023	36	-	3	507	15	560
Carrying amount of reinsurance contract liabilities as at Jan. 1, 2023	-1	-	-	-	-	-
Balance as at Jan. 1, 2023	35	-	3	507	15	559
Overall change recognized in profit or loss and in other comprehensive income	**-285**	**-**	**24**	**195**	**-8**	**-73**
Net income/expenses from reinsurance contracts held	-284	-	24	190	-8	-78
Change in reinsurers' credit risk	-	-	-	-8	-	-8
Insurance finance income or expenses from reinsurance contracts held	-1	-	-	13	-	12
Changes resulting from cash flows	**282**	**-**	**-24**	**-378**	**-**	**-120**
Premiums paid for reinsurance contracts held	282	-	-	-	-	282
Incurred claims recovered and other insurance service expenses recovered under reinsurance contracts held	-	-	-24	-378	-	-402
Balance as at Dec. 31, 2023	**32**	**-**	**3**	**324**	**8**	**366**
Carrying amount of reinsurance contract assets as at Dec. 31, 2023	34	-	3	324	8	368
Carrying amount of reinsurance contract liabilities as at Dec. 31, 2023	-2	-	-	-	-	-1

	Liability for remaining coverage		Liability for incurred claims			Total
€ million	Excluding the loss component	Loss component	No premium allocation approach	Premium allocation approach: present value of expected cash flows	Premium allocation approach: risk adjustment	
Carrying amount of reinsurance contract assets as at Jan. 1, 2022	30	-	1	791	16	838
Carrying amount of reinsurance contract liabilities as at Jan. 1, 2022	-6	-	-	-	-	-6
Balance as at Jan. 1, 2022	23	-	1	791	16	832
Overall change recognized in profit or loss and in other comprehensive income	**-214**	**-**	**18**	**74**	**-1**	**-123**
Net income/expenses from reinsurance contracts held	-235	-	18	94	-	-123
Insurance finance income or expenses from reinsurance contracts held	21	-	-	-20	-1	-
Changes resulting from cash flows	**226**	**-**	**-17**	**-359**	**-**	**-150**
Premiums paid for reinsurance contracts held	226	-	-	-	-	226
Incurred claims recovered and other insurance service expenses recovered under reinsurance contracts held	-	-	-17	-359	-	-376
Balance as at Dec. 31, 2022	**35**	**-**	**3**	**507**	**15**	**559**
Carrying amount of reinsurance contract assets as at Dec. 31, 2022	36	-	3	507	15	560
Carrying amount of reinsurance contract liabilities as at Dec. 31, 2022	-1	-	-	-	-	-

The following tables show the change in the insurance contracts for which the premium allocation approach is not applied:

€ million	Present value of expected cash flows	Risk adjustment	CSM	**Total**
Carrying amount of insurance contract assets as at Jan. 1, 2023	-1	-	1	-
Carrying amount of insurance contract liabilities as at Jan. 1, 2023	84,472	955	4,788	90,214
Balance as at Jan. 1, 2023	84,471	955	4,788	90,214
OVERALL CHANGE RECOGNIZED IN PROFIT OR LOSS AND IN OTHER COMPREHENSIVE INCOME	**5,045**	**-145**	**633**	**5,533**
Insurance service result	**1,606**	**-193**	**-3,040**	**-1,626**
Changes that relate to current service	***-1,070***	***-125***	***-521***	***-1,717***
Amortization of the CSM in profit or loss based on provision of service	-	-	-521	-521
Release of the risk adjustment through profit or loss	-	-125	-	-125
Deviation from budgeted figures	-1,070	-	-	-1,070
Changes that relate to future service	***2,547***	***-54***	***-2,519***	***-25***
New business	-603	114	584	96
Changes in estimates that adjust the CSM	3,272	-169	-3,103	-
Changes in estimates that result in losses on onerous contracts or reversals of such losses	-122	1	-	-121
Changes that relate to past service	***129***	***-14***	***-***	***116***
Change in the liability for incurred claims	129	-14	-	116
Insurance finance income or expenses	**3,748**	**36**	**3,676**	**7,460**
Other	**-309**	**12**	**-4**	**-301**
CHANGES RESULTING FROM CASH FLOWS	**647**	**-**	**-**	**647**
Premium income	10,042	-	-	10,042
Insurance acquisition cash flows	-624	-	-	-624
Incurred claims paid and other insurance service expenses paid	-8,772	-	-	-8,772
Balance as at Dec. 31, 2023	**90,163**	**810**	**5,421**	**96,394**
Carrying amount of insurance contract assets as at Dec. 31, 2023	-	-	-	-
Carrying amount of insurance contract liabilities as at Dec. 31, 2023	90,163	810	5,421	96,394

Of the amortization of the CSM, an approximated amount of €146 million was attributable to contracts measured on a modified retrospective basis on the date of transition to IFRS 17 and €12 million to contracts measured using the fair value approach.

€ million	Present value of expected cash flows	Risk adjustment	CSM	**Total**
Carrying amount of insurance contract assets as at Jan. 1, 2022	-1	-	-	-
Carrying amount of insurance contract liabilities as at Jan. 1, 2022	103,615	674	5,147	109,437
Balance as at Jan. 1, 2022	103,614	674	5,148	109,436
OVERALL CHANGE RECOGNIZED IN PROFIT OR LOSS AND IN OTHER COMPREHENSIVE INCOME	**-21,403**	**281**	**-360**	**-21,482**
Insurance service result	**-16,583**	**301**	**14,821**	**-1,462**
Changes that relate to current service	***-1,332***	***-85***	***-436***	***-1,853***
Amortization of the CSM in profit or loss based on provision of service	-	-	-436	-436
Release of the risk adjustment through profit or loss	-	-85	-	-85
Deviation from budgeted figures	-1,332	-	-	-1,332
Changes that relate to future service	***-15,551***	***385***	***15,257***	***90***
New business	-784	113	774	103
Changes in estimates that adjust the CSM	-14,752	269	14,482	-
Changes in estimates that result in losses on onerous contracts or reversals of such losses	-15	2	-	-13
Changes that relate to past service	***299***	***1***	***-***	***301***
Change in the liability for incurred claims	299	1	-	301
Insurance finance income or expenses	**-4,584**	**-18**	**-15,178**	**-19,780**
Other	**-235**	**-2**	**-3**	**-240**
CHANGES RESULTING FROM CASH FLOWS	**2,260**	**-**	**-**	**2,260**
Premium income	10,454	-	-	10,454
Insurance acquisition cash flows	-691	-	-	-691
Incurred claims paid and other insurance service expenses paid	-7,503	-	-	-7,503
Balance as at Dec. 31, 2022	**84,471**	**955**	**4,788**	**90,214**
Carrying amount of insurance contract assets as at Dec. 31, 2022	-1	-	1	-
Carrying amount of insurance contract liabilities as at Dec. 31, 2022	84,472	955	4,788	90,214

Of the amortization of the CSM, an approximated amount of €140 million was attributable to contracts measured on a modified retrospective basis on the date of transition to IFRS 17 and €20 million to contracts measured using the fair value approach.

The following tables show the change in the reinsurance contracts for which the premium allocation approach is not applied:

€ million	Present value of expected cash flows	Risk adjustment	CSM	**Total**
Carrying amount of reinsurance contract assets as at Jan. 1, 2023	-41	4	65	29
Balance as at Jan. 1, 2023	-41	4	65	29
OVERALL CHANGE RECOGNIZED IN PROFIT OR LOSS AND IN OTHER COMPREHENSIVE INCOME	**-3**	**-**	**17**	**15**
Insurance service result	**1**	**-**	**15**	**16**
Changes that relate to current service	***18***	*-*	***-2***	***16***
CSM recognized in profit or loss	-	-	-2	-2
Deviation from budgeted figures	18	-	-	18
Changes that relate to future service	***-17***	***1***	***17***	*-*
Changes in estimates that adjust the CSM	-14	-	14	-
New business	-3	1	2	-
Insurance finance income or expenses	**-4**	**-**	**3**	**-2**
CHANGES RESULTING FROM CASH FLOWS	**-11**	**-**	**-**	**-11**
Premiums paid for reinsurance contracts held	13	-	-	13
Incurred claims recovered and other insurance service expenses recovered under reinsurance contracts held	-24	-	-	-24
Balance as at Dec. 31, 2023	**-55**	**5**	**83**	**33**
Carrying amount of reinsurance contract assets as at Dec. 31, 2023	-55	5	83	33

Of the reversal of the gains and losses on reinsurance contracts, an approximated amount of €2 million was attributable to contracts measured on a modified retrospective basis on the date of transition to IFRS 17 and €0 million to contracts measured using the fair value approach.

€ million	Present value of expected cash flows	Risk adjustment	CSM	**Total**
Carrying amount of reinsurance contract assets as at Jan. 1, 2022	-4	6	11	13
Carrying amount of reinsurance contract liabilities as at Jan. 1, 2022	-59	-	55	-5
Balance as at Jan. 1, 2022	-64	6	66	8
OVERALL CHANGE RECOGNIZED IN PROFIT OR LOSS AND IN OTHER COMPREHENSIVE INCOME	**7**	**-2**	**-**	**5**
Insurance service result	**-9**	**-2**	**-3**	**-13**
Changes that relate to current service	***-7***	*-*	***-4***	***-11***
CSM recognized in profit or loss	-	-	-4	-4
Deviation from budgeted figures	-7	-	-	-7
Changes that relate to future service	*-*	***-1***	***1***	*-*
Changes in estimates that adjust the CSM	3	-2	-1	-
New business	-3	1	2	-
Changes that relate to past service	***-2***	*-*	*-*	***-2***
Change in the liability for incurred claims	-2	-	-	-2
Insurance finance income or expenses	**17**	**-**	**3**	**19**
Other	**-1**	**-**	**-**	**-1**
CHANGES RESULTING FROM CASH FLOWS	**16**	**-**	**-**	**16**
Premiums paid for reinsurance contracts held	33	-	-	33
Incurred claims recovered and other insurance service expenses recovered under reinsurance contracts held	-17	-	-	-17
Balance as at Dec. 31, 2022	**-41**	**4**	**65**	**29**
Carrying amount of reinsurance contract assets as at Dec. 31, 2022	-41	4	65	29

Of the reversal of the gains and losses on reinsurance contracts, an approximated amount of €1 million was attributable to contracts measured on a modified retrospective basis on the date of transition to IFRS 17 and €4 million to contracts measured using the fair value approach.

» 92 Fair values of underlying items relating to contracts with direct participation features

The following table shows the fair values of the underlying items:

€ million	Dec. 31, 2023 Contracts with direct participation features	Other contracts	Total	Dec. 31, 2022 Contracts with direct participation features	Other contracts	Total
Investments	**89,969**	**944**	**90,913**	**83,000**	**784**	**83,784**
Investment property	3,078	-	3,078	3,287	-	3,287
Investments in subsidiaries	420	1	421	425	-	425
Investments in joint ventures	55	-	55	59	-	59
Mortgage loans	10,309	-	10,310	9,485	-	9,485
Promissory notes and loans	4,863	-	4,863	4,846	-	4,846
Registered bonds	4,692	-	4,692	4,372	-	4,372
Other loans	169	21	190	178	6	184
Variable-yield securities	9,664	413	10,077	10,585	398	10,983
Fixed-income securities	38,585	509	39,095	34,359	379	34,738
Derivatives (positive fair values)	157	-	157	219	-	219
Other investments	32	-	32	50	-	50
Assets related to unit-linked contracts	17,944	-	17,944	15,135	-	15,135
Income tax assets	**9**	**-**	**9**	**12**	**-**	**12**
Other assets held by insurance companies	**668**	**4**	**672**	**888**	**4**	**892**
Intangible assets (excluding goodwill)	15	-	15	16	-	16
Other receivables of insurance companies	87	-	87	107	-	107
Credit balances with banks, checks and cash on hand	140	-	140	363	-	363
Property, plant and equipment and right-of-use assets	7	-	7	9	-	9
Residual other assets held by insurance companies	418	4	421	393	4	397
Income tax liabilities	**25**	**-**	**25**	**23**	**-**	**23**
Other liabilities of insurance companies	**342**	**-**	**342**	**446**	**-**	**446**
Provisions of insurance companies	29	-	29	32	-	32
Payables and residual other liabilities of insurance companies	313	-	313	414	-	414

As at the reporting date, the underlying items relating to investment contracts with direct participation features mainly consisted of a share of the total investment portfolio of each insurance company. An exact assignment of the investments to the insurance contract liabilities for the total portfolio or individual subportfolios is neither possible nor envisaged in the German insurance market, with the exception of unit-linked insurance contracts. Consequently, the amounts of the underlying items in life insurance are determined using the insurance cash flows pursuant to IFRS 17, i.e. the fulfillment cash flows less the risk adjustment, and the present value of the companies' future share of gross profit plus costs that cannot be attributed directly. In health insurance, equity calculated in accordance with commercial law is also taken into account owing to the rules on policyholder participation. These components thus contain all future payments from the underlying items.

The 'Other contracts' column shows investments for which the underlying contracts do not have direct participation features.

» 93 Effects of initial measurement

The following table shows the effects on the measurement components of the insurance and reinsurance contracts recognized for the first time in the financial year for which the premium allocation approach is not applied:

	2023		2022	
€ million	Non-onerous contracts	Onerous contracts	Non-onerous contracts	Onerous contracts
LOSSES RECOGNIZED AT INITIAL MEASUREMENT OF INSURANCE CONTRACTS	**-**	**96**	**-**	**103**
Present value of claims/costs/insurance acquisition cash flows	**5,563**	**2,024**	**6,392**	**3,429**
Insurance acquisition cash flows	412	208	434	120
Incurred claims and other insurance service expenses	5,151	1,816	5,958	3,309
Present value of premiums	**-6,234**	**-1,955**	**-7,249**	**-3,357**
Risk adjustment	**87**	**27**	**82**	**31**
CSM	**584**	**-**	**774**	**-**
LOSSES RECOGNIZED AT INITIAL MEASUREMENT OF REINSURANCE CONTRACTS	**-**	**-**	**-**	**-**
Present value of claims/costs/insurance acquisition cash flows	-6	-	-7	-
Present value of premiums	9	-	10	-
Risk adjustment	-1	-	-1	-
CSM	-2	-	-2	-

» 94 Expected recognition of the contractual service margin in profit or loss

The following table shows when the remaining CSM recognized as at the reporting date is likely to be recognized in profit or loss:

	Dec. 31, 2023		Dec. 31, 2022	
€ million	Insurance contracts	Reinsurance contracts	Insurance contracts	Reinsurance contracts
≤ 1 year	360	-5	305	-3
> 1 year – 2 years	289	-5	248	-4
> 2 years – 3 years	271	-5	235	-4
> 3 years – 4 years	255	-5	223	-3
> 4 years – 5 years	242	-5	212	-3
> 5 years – 10 years	1,033	-17	911	-13
> 10 years – 20 years	1,433	-22	1,264	-18
> 20 years – 30 years	817	-11	725	-10
> 30 years – 40 years	417	-5	374	-4
> 40 years – 50 years	200	-2	185	-2
> 50 years	106	-1	107	-1

» 95 Claims rate trend

Claims rate trend for direct non-life insurance business including claim settlement costs

The following table shows the change in the gross liability for incurred claims in direct business and payments made against the original liability:

€ million	Total	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Gross liability for incurred claims											
At the end of the year		5,237	4,779	5,067							
1 year later			4,882	5,152	3,930						
2 years later				5,196	3,885	4,074					
3 years later					3,865	4,057	3,927				
4 years later						4,027	3,904	3,583			
5 years later							3,896	3,574	3,574		
6 years later								3,559	3,559	3,240	
7 years later									3,531	3,231	3,059
8 years later										3,220	3,044
9 years later											3,038
Total claim payments made	**34,172**	**2,531**	**3,853**	**4,468**	**3,430**	**3,681**	**3,579**	**3,332**	**3,322**	**3,072**	**2,904**
Liability for incurred claims in respect of claims that occurred in 2014 to 2023	**6,279**	**2,706**	**1,029**	**728**	**435**	**346**	**317**	**227**	**209**	**148**	**134**
Liability for incurred claims in respect of claims that occurred before 2014	1,031										
Effect of discounting	-953										
Risk adjustment	82										
Gross liability for incurred claims	**6,439**										

The following table shows the change in the net liability for incurred claims in direct business and payments made against the original liability:

€ million	Total	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Net liability for incurred claims											
At the end of the year		5,099	4,762	5,057							
1 year later			4,864	5,142	3,948						
2 years later				5,072	3,900	4,078					
3 years later					3,882	4,061	3,946				
4 years later						4,029	3,922	3,588			
5 years later							3,914	3,578	3,604		
6 years later								3,562	3,589	3,247	
7 years later									3,561	3,238	3,061
8 years later										3,227	3,048
9 years later											3,043
Total claim payments made	**34,184**	**2,462**	**3,843**	**4,465**	**3,449**	**3,686**	**3,599**	**3,339**	**3,354**	**3,079**	**2,908**
Liability for incurred claims in respect of claims that occurred in 2014 to 2023	**6,069**	**2,637**	**1,021**	**607**	**433**	**343**	**315**	**223**	**207**	**148**	**135**
Liability for incurred claims in respect of claims that occurred before 2014	1,008										
Effect of discounting	-943										
Risk adjustment	78										
Net liability for incurred claims	**6,212**										

Claims rate trend for inward reinsurance business

The following table shows the change in the gross liability for incurred claims in inward reinsurance business and payments made against the original liability:

€ million	Total	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Gross liability for incurred claims											
At the end of the year		1,937	1,989	2,079							
1 year later			2,385	2,512	2,944						
2 years later				2,543	2,974	2,688					
3 years later					2,922	2,749	2,352				
4 years later						2,748	2,364	2,355			
5 years later							2,363	2,379	1,631		
6 years later								2,367	1,637	1,391	
7 years later									1,616	1,380	1,225
8 years later										1,364	1,237
9 years later											1,218
Total claim payments made	**15,591**	**325**	**1,253**	**1,695**	**2,250**	**2,284**	**2,001**	**2,050**	**1,404**	**1,208**	**1,121**
Liability for incurred claims in respect of claims that occurred in 2014 to 2023	**5,872**	**1,612**	**1,132**	**848**	**672**	**464**	**362**	**317**	**212**	**156**	**97**
Liability for incurred claims in respect of claims that occurred before 2014	360										
Effect of discounting	-959										
Risk adjustment	72										
Gross liability for incurred claims	**5,345**										

The following table shows the change in the net liability for incurred claims in inward reinsurance business and payments made against the original liability:

€ million	Total	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Net liability for incurred claims											
At the end of the year		1,893	1,978	1,942							
1 year later			2,374	2,369	2,947						
2 years later				2,391	2,974	2,686					
3 years later					2,924	2,747	2,350				
4 years later						2,745	2,362	2,353			
5 years later							2,361	2,377	1,632		
6 years later								2,366	1,639	1,389	
7 years later									1,618	1,378	1,225
8 years later										1,362	1,237
9 years later											1,218
Total claim payments made	**15,489**	**324**	**1,248**	**1,601**	**2,253**	**2,282**	**1,999**	**2,049**	**1,406**	**1,207**	**1,120**
Liability for incurred claims in respect of claims that occurred in 2014 to 2023	**5,763**	**1,569**	**1,126**	**790**	**671**	**463**	**362**	**317**	**212**	**155**	**98**
Liability for incurred claims in respect of claims that occurred before 2014	358										
Effect of discounting	-954										
Risk adjustment	71										
Net liability for incurred claims	**5,238**										

» 96 Yield curves

The following table shows the yield curves as at the latest measurement date used to measure the cash flows for insurance contracts and for reinsurance contracts held:

	1 year		5 years		10 years		15 years		20 years	
Percent	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022	Dec. 31, 2023	Dec. 31, 2022
EUR	4.02	4.12	3.26	4.02	3.28	3.94	3.36	3.87	3.29	3.61
GBP	5.29	5.28	4.19	4.87	4.06	4.46	4.17	4.37	4.21	4.28
JPY	0.63	0.93	1.30	1.36	1.65	1.64	1.96	1.86	2.19	2.03
USD	5.33	5.96	4.34	4.78	4.23	4.54	4.27	4.52	4.24	4.43
ZAR	8.68	8.54	8.91	9.11	10.26	10.23	11.01	10.50	11.01	10.36

» 97 Risk and capital management

Disclosures pursuant to IFRS 17.132(b) and IFRS 17.132(c) can be found in this note in the notes to the consolidated financial statements. With the exception of the disclosures on maturity analysis pursuant to IFRS 17.132(b) and IFRS 17.132(c), further disclosures on the nature and extent of risks arising from insurance contracts (IFRS 17.121-132) are included in the group management report in chapter VII 'Risk report', sections 6 'Liquidity adequacy' and 8 'Credit risk' and for the Insurance sector in sections 16 'Actuarial risk' and 17 'Market risk'.

The disclosures published in the risk report form part of the content of these notes to the consolidated financial statements.

Maturity analysis

The following table contains an analysis of the remaining undiscounted contractual net cash flows for insurance contracts, by estimated maturity. Liabilities for remaining coverage measured under the premium allocation approach are excluded from this analysis.

€ million	Dec. 31, 2023	Dec. 31, 2022
≤ 1 year	5,768	5,913
> 1 year – 2 years	3,517	3,461
> 2 years – 3 years	3,145	2,817
> 3 years – 4 years	2,549	2,972
> 4 years – 5 years	2,727	2,610
> 5 years – 10 years	17,808	17,618
> 10 years – 20 years	32,449	32,892
> 20 years – 30 years	34,501	36,269
> 30 years – 40 years	26,134	27,845
> 40 years – 50 years	18,805	19,202
> 50 years	24,604	27,350

The insurance contract liabilities repayable on demand amounted to €61,991 million (December 31, 2022: €56,083 million).

Sensitivity analysis

For internal and external reporting purposes, sensitivity analyses are carried out in accordance with IFRS 17.125 in conjunction with IFRS 17.128 in order to quantify the impact on equity and on profit or loss. This sensitivity analysis contains 4 scenarios that simulate the potential impact on insurance assets and liabilities measured in accordance with IFRS 17.

Interest-rate scenario

Expert appraisals from the Economic Roundtable dated November 7, 2023 are used as the basis for determining the ranges to be examined in the interest-rate scenario. The information from the Economic Roundtable is analyzed on an ongoing basis to ascertain whether any adjustments are needed for future reporting-date-related sensitivity analyses.

For 10-year government bonds of the Federal Republic of Germany, an interest rate of 3.00 percent is expected in the main scenario and an interest rate of 2.50 percent in the risk scenario for 2023. Based on the analyses and findings of the Economic Roundtable, sensitivity analyses with a shift in interest rates of plus or minus 50 basis points are calculated.

Currency scenario

The basis for determining the ranges to be examined in the currency scenario is the assumption that the exchange rate for the US dollar – which acts as a reserve currency, especially in international reinsurance business – will change by plus or minus 10 percent.

Equity scenario

The basis for determining the ranges to be examined in the equity scenario is the assumption that the prices of the equities held as at the reporting date will change by plus or minus 10 percent. This scenario is mainly relevant to personal insurance, in which the variable fee approach is used for the stochastic modeling of future policyholder participation and any changes in share prices affect both the measurement of liabilities under IFRS 17 and the amount of other comprehensive income/loss.

Claims scenario

The claims scenario is based on the assumption that direct insurance business and inward reinsurance business in the non-life segment are affected, in particular, by a change in the cash flows of the liability for incurred claims of plus or minus 1 percent. For the liability for remaining coverage and the fulfilment cash flows for the loss component, the claims rate is adjusted by plus or minus 1 percent. This results in, for example, an increase or decrease in claim payments, leading to measurement effects on the insurance contract assets and liabilities measured using the premium allocation approach or under the general measurement model in profit or loss and in other comprehensive income.

The following table shows the sensitivity of profit or loss before taxes and equity before taxes to a change in the underlying parameters. Correlation effects between individual parameters are not considered.

	Dec. 31, 2023	
€ million	Change in profit or loss before taxes	Change in equity before taxes
Increase in interest-rate risk of 50 basis points	-13	37
Decrease in interest-rate risk of 50 basis points	4	-53
Increase in equity risk of 10 percent	-3	6
Decrease in equity risk of 10 percent	-	-8
Increase in currency risk of 10 percent	-110	-112
Decrease in currency risk of 10 percent	110	112
Increase in claims risk of 1 percent	-142	-147
Decrease in claims risk of 1 percent	144	148

G Other disclosures

» 98 Contingent liabilities

€ million	Dec. 31, 2023	Dec. 31, 2022
Contingent liabilities arising from contributions to the resolution fund for CRR credit institutions	169	137
Contingent liabilities in respect of litigation risk	10	4
Total	**179**	**141**

The contingent liabilities arising from contributions to the resolution fund for CRR credit institutions consist of irrevocable payment commitments (IPCs) that the Single Resolution Board (SRB) approved in response to applications that were made to furnish collateral in partial settlement of the contribution to the European bank levy. The DZ BANK Group has pledged cash collateral of the same amount. The pledged collateral is included within other loans and advances under other assets on the balance sheet. In light of a non-binding judgment of the European General Court (EGC) dated October 25, 2023 in a legal dispute between the SRB and a French bank, there is legal uncertainty as to whether the irrevocable payment commitments are annulled if a bank leaves the Single Resolution Mechanism (in particular if a banking license is handed back) and whether the cash collateral provided by the bank is returned to the bank without it having to pay the irrevocably committed amount. The case is pending a decision by the EGC.

In addition, the contingent liabilities in respect of litigation risk comprise a small number of court proceedings relating to different cases. Where provisions have been recognized for particular claims, no contingent liabilities have to be recognized.

» 99 Financial guarantee contracts and loan commitments

€ million	Dec. 31, 2023	Dec. 31, 2022
Financial guarantee contracts	**11,441**	**10,606**
Loan guarantees	5,345	5,076
Letters of credit	912	781
Other guarantees and warranties	5,184	4,749
Loan commitments	**81,886**	**78,012**
Credit facilities to banks	30,073	27,579
Credit facilities to customers	37,644	38,481
Guarantee credits	1,751	1,144
Letters of credit	297	288
Global limits	12,120	10,520
Total	**93,327**	**88,618**

The amounts shown for financial guarantee contracts and loan commitments are the nominal values of the commitment in each case.

» 100 Trust activities

Assets held and liabilities entered into as part of trust activities do not satisfy the criteria for recognition on the balance sheet. The following table shows the breakdown for trust activities:

€ million	Dec. 31, 2023	Dec. 31, 2022
Trust assets	**1,944**	**2,171**
Loans and advances to banks	1,836	2,095
Loans and advances to customers	41	9
Investments	67	67
Trust liabilities	**1,944**	**2,171**
Deposits from banks	1,663	1,957
Deposits from customers	280	214

Trust assets and trust liabilities each include trust loans amounting to €1,663 million (December 31, 2022: €1,957 million).

» 101 Business combinations

In 2023, an impairment loss of €52 million was recognized in the income statement for intangible assets identified in the past in connection with business combinations (2022: €0 million).

Goodwill is allocated to the DZ BANK Group’s operating segments, each of which constitutes a cash-generating unit. As at the balance sheet date, goodwill of €155 million was allocated to the UMH subgroup operating segment (December 31, 2022: €155 million).

Goodwill is regularly tested for possible impairment in the last quarter of the financial year. If there are any indications of possible impairment, more frequent impairment tests are also carried out. In an impairment test, the carrying amount of the goodwill-bearing cash-generating unit is, by definition, compared with the relevant recoverable amount. The carrying amount is equivalent to the equity attributable to the goodwill-bearing cash-generating unit. For the purposes of the test, the goodwill is notionally increased by the amount attributable to non-controlling interests. If the recoverable amount exceeds the carrying amount, no impairment of the goodwill is recognized. The recoverable amount is determined as the value in use of the goodwill-bearing entity. Value in use is based on the DZ BANK Group’s 4-year plan, from which estimated future cash flows can be derived.

The basic assumptions are determined using an overall assessment based on past experience, current market and economic conditions, and assessments of future market trends. The macroeconomic scenario used as the basis for the 4-year plan assumes that economic growth in Germany and the rest of Europe will remain weak for the time being. It also assumes that key interest rates in the eurozone will continue to rise until the end of 2024. The ECB is then expected to shift course toward the end of 2024, resulting in a gradual lowering of the key interest rates to 2.5 percent by the end of 2027. In Germany, average inflation is predicted to fall slightly as energy prices went down in 2023, in some cases significantly. Inflationary pressure is also likely to gradually ease in the eurozone as a whole and in the USA. The share forecasts for the EURO STOXX 50 and the DAX have been raised for 2024 as the USA has avoided a recession. The scenario anticipates virtually unchanged or slightly lower spreads on government bonds issued by the peripheral countries of the eurozone.

Cash flows beyond the end of the 4-year period were estimated using a constant rate of growth of 0.5 percent (2022: 0.5 percent) for the UMH subgroup operating segment. The value in use for a goodwill-bearing entity is produced by discounting these cash flows back to the date of the impairment test. The discount rate (before taxes) used for the UMH subgroup operating segment in 2023, which was determined on the basis of the capital asset pricing model, was 17.1 percent (2022: 16.0 percent).

There were no impairment losses in the reporting year or in the previous year.

Sensitivity analyses are also carried out in which parameters relevant to the calculation of value in use are modified within a plausible range of values. The parameters that are particularly relevant to the DZ BANK Group are the forecast cash flows and the discount rates. No impairment requirement arose in the UMH subgroup operating segment in any of the scenarios.

» 102 Leases

DZ BANK Group as lessor

The underlying assets in leases in which the DZ BANK Group is the lessor can be subdivided into the following classes: land and buildings, office furniture and equipment, and intangible assets.

For the most part, the land and buildings asset class consists of commercial real estate, including parking areas. A smaller proportion is accounted for by residential real estate. Lease assets in the office furniture and equipment asset class are motor vehicles, IT and office equipment, production machinery, medical technology devices, and photovoltaic installations. Software is the most significant item under intangible assets.

Finance leases

Within the DZ BANK Group, the VR Smart Finanz subgroup is also active as a lessor. The companies in the VR Smart Finanz subgroup enter into leases with customers, for example for motor vehicles, production machinery, and photovoltaic installations. In addition to office equipment, software is also leased. Some of the leases include purchase, extension, or termination options; they have terms of 1 to 21 years for office furniture and equipment, and 2 to 7 years for intangible assets.

In addition to the actual underlying assets financed by the leases, further items of collateral such as guarantees, repurchase agreements, and residual value guarantees are contractually agreed in order to reduce the risk. Lease assets are also monitored, for example by means of on-site inspections.

€ million	Dec. 31, 2023	Dec. 31, 2022
Gross investment	**494**	595
Up to 1 year	170	225
More than 1 year and up to 2 years	117	149
More than 2 years and up to 3 years	89	93
More than 3 years and up to 4 years	58	65
More than 4 years and up to 5 years	32	32
More than 5 years	28	31
less unearned finance income	**-32**	-29
Net investment	463	565
less present value of unguaranteed residual values	**-13**	-17
Present value of minimum lease payment receivables	**449**	548

The change in the present value of the minimum lease payment receivables was largely attributable to expiring finance leases and partial repayments at the request of customers.

Gains on disposals of €2 million were recognized in 2023 (2022: €2 million). Losses on disposals amounted to €1 million (2022: €2 million). They are reported under interest income in note 34 together with the financial income derived from the net investment in the lease.

Operating leases

Leases are in place for commercial and residential real estate, including parking areas. The leases normally include extension options. A small number of leases are also entered into for office furniture and equipment.

The following table shows a breakdown by asset class of the carrying amounts of the underlying assets in the leases, comprising investment property and items of property, plant and equipment, as at the reporting date:

€ million	Dec. 31, 2023	Dec. 31, 2022
Land and buildings	4,276	4,336
Office furniture and equipment	11	13
Total	**4,287**	**4,349**

Income from operating leases amounted to €309 million in the reporting year (2022: €290 million), the bulk of which comprised rental income from investment property held by the insurance companies.

As at the reporting date, the breakdown of the total amount of minimum lease payments expected to be received from non-cancelable operating leases in the future was as follows:

€ million	Dec. 31, 2023	Dec. 31, 2022
Total future minimum lease payments under non-cancelable leases	**1,318**	**1,366**
Up to 1 year	289	290
More than 1 year and up to 2 years	178	177
More than 2 years and up to 3 years	147	148
More than 3 years and up to 4 years	131	127
More than 4 years and up to 5 years	104	112
More than 5 years	469	510

DZ BANK Group as lessee

The underlying assets in leases in which the DZ BANK Group is the lessee can be subdivided into the following classes: land and buildings, and office furniture and equipment.

Leases involving the land and buildings asset class in which the DZ BANK Group is the lessee relate to the leasing of offices and business premises (including parking) for the group’s own business operations. Some of these leases include extension and termination options. The lease terms are up to 20 years. There are also a small number of leases for office furniture and equipment. These include leases for motor vehicles, bicycles, and workplace equipment. The lease terms are up to 7 years.

Rights to use underlying assets in leases are included under property, plant and equipment, investment property, and right-of-use assets, and under other assets. The following table shows the changes in the carrying amounts of the right-of-use assets, broken down by class of underlying asset:

€ million	Land and buildings	Office furniture and equipment
Carrying amounts as at Jan. 1, 2022	573	33
Additions	83	14
Revaluation	96	4
Depreciation	-89	-19
Disposals	-10	-1
Changes attributable to currency translation	3	-
Carrying amounts as at Dec. 31, 2022	655	31
Additions	37	27
Revaluation	11	1
Reclassifications	-10	-
Depreciation	-93	-20
Impairment losses	-3	-
Disposals	-13	-2
Changes attributable to currency translation	-1	-
Carrying amounts as at Dec. 31, 2023	**582**	**36**

Lease liabilities of €652 million were recognized under other liabilities and insurance companies' other liabilities (December 31, 2022: €717 million).

The interest expense for lease liabilities is disclosed in notes 34 and 40.

The following table shows a breakdown of the contractual maturities for lease liabilities:

€ million	**Dec. 31, 2023**	Dec. 31, 2022
Up to 1 year	**97**	94
More than 1 year and up to 3 years	**173**	181
More than 3 years and up to 5 years	**159**	162
More than 5 years	**262**	319

The total cash outflows for lease liabilities in 2023 amounted to €149 million (2022: €157 million).

The following income and expenses have been recognized in the income statement for rights to use underlying assets in leases:

€ million	**2023**	2022
Expenses relating to short-term leases	**-1**	-1
Expenses relating to leases for low-value assets	**-19**	-22
Expenses relating to variable lease payments not included in the lease liability	**-11**	-11
Income from subleasing right-of-use assets	**13**	13

The expenses relating to short-term leases relate primarily to leases for motor vehicles as well as real estate with lease terms between 2 and 12 months. Expenses relating to leases for low-value assets mainly relate to the office furniture and equipment asset class.

The lease commitments could give rise to potential future cash outflows as a result of variable lease payments, extension options, or termination options. These potential cash outflows have not been included in the measurement of the lease liability because, under current assessments, it is not possible to determine with a sufficient degree of reliability whether, and to what extent, the variable components will materialize or will be used. Within the DZ BANK Group, there are variable lease payments of this nature in connection with utilities related to real estate leases. The entities in the DZ BANK Group estimate that variable lease payments, extension options, and termination rights contractually provided for in leases could give rise to future cash outflows of €529 million (2022: €540 million).As at the reporting date, there were also future commitments amounting to €17 million (December 31, 2022: €0 million) arising from leases that had been signed by the entities in the DZ BANK Group but that had not yet commenced. Most of these leases relate to real estate used for the group's own business operations.

Taking account of the contractual term, the incremental borrowing rate of interest is mainly determined on the basis of observable risk-free yield curves, supplemented by liquidity spreads, credit spreads and, if applicable, a currency markup. The term to maturity of the lease liabilities is based on the initial contractual term of the lease. If leases contain termination or extension options, the probability of these options being exercised is assessed using objective criteria or on the basis of expert opinion.

» 103 Disclosures on revenue from contracts with customers

Effects in the income statement

Disclosures on revenue from contracts with customers, broken down by operating segment

2023

€ million	BSH	R+V	TeamBank	
Income type				
Fee and commission income from securities business	1	-	-	
Fee and commission income from asset management	-	-	-	
Fee and commission income from payments processing including card processing	-	-	-	
Fee and commission income from lending business and trust activities	-	-	4	
Fee and commission income from financial guarantee contracts and loan commitments	-	-	-	
Fee and commission income from international business	-	-	-	
Fee and commission income from building society operations	35	-	-	
Other fee and commission income	64	-	29	
Fee and commission income in gains and losses on investments held by insurance companies and other insurance company gains and losses	-	61	-	
Other income in gains and losses on investments held by insurance companies and other insurance company gains and losses	-	82	-	
Other operating income	50	-	7	
Total	**150**	**143**	**40**	
Main geographical markets				
Germany	140	137	40	
Rest of Europe	10	6	-	
Total	**150**	**143**	**40**	
Type of revenue recognition				
At a point in time	110	5	40	
Over a period of time	40	138	-	
Total	**150**	**143**	**40**	

	UMH	DZ BANK – CICB	DZ HYP	DZ PRIVAT-BANK	VR Smart Finanz	Other/ Consolidation	**Total**
	3,387	463	-	214	-	-100	3,964
	24	-	-	315	-	-5	334
	-	306	-	2	-	60	368
	-	109	8	-	-	57	178
	-	93	6	-	-	-3	96
	-	13	-	-	-	-	13
	-	-	-	-	-	-	35
	-	64	-	5	6	9	177
	-	-	-	-	-	-3	58
	-	-	-	-	-	-	82
	13	-	-	-	-	12	84
	3,424	**1,047**	**14**	**536**	**6**	**28**	**5,389**
	2,559	1,047	14	54	6	14	4,011
	865	-	-	482	-	14	1,377
	3,424	**1,047**	**14**	**536**	**6**	**28**	**5,389**
	359	377	11	62	6	30	1,000
	3,066	670	4	474	-	-1	4,390
	3,424	**1,047**	**14**	**536**	**6**	**28**	**5,389**

2022

€ million	BSH	R+V	TeamBank	
Income type				
Fee and commission income from securities business	-	-	-	
Fee and commission income from asset management	-	-	-	
Fee and commission income from payments processing including card processing	-	-	-	
Fee and commission income from lending business and trust activities	-	-	4	
Fee and commission income from financial guarantee contracts and loan commitments	-	-	-	
Fee and commission income from international business	-	-	-	
Fee and commission income from building society operations	45	-	-	
Other fee and commission income	88	-	98	
Fee and commission income in gains and losses on investments held by insurance companies and other insurance company gains and losses	-	73	-	
Other income in gains and losses on investments held by insurance companies and other insurance company gains and losses	-	77	-	
Other operating income	49	-	9	
Total	**181**	**149**	**111**	
Main geographical markets				
Germany	172	136	111	
Rest of Europe	9	13	-	
Total	**181**	**149**	**111**	
Type of revenue recognition				
At a point in time	159	12	111	
Over a period of time	23	137	-	
Total	**181**	**149**	**111**	

	UMH	DZ BANK – CICB	DZ HYP	DZ PRIVAT-BANK	VR Smart Finanz	Other/ Consolidation	**Total**
	3,470	498	-	219	-	-98	4,089
	23	-	-	325	-	-5	344
	-	269	-	2	-	61	332
	-	109	7	-	-	42	162
	-	69	5	-	-	-3	72
	-	13	-	-	-	-	13
	-	-	-	-	-	-	45
	-	62	11	3	4	-76	190
	-	-	-	-	-	-	73
	-	-	-	-	-	-	77
	12	-	-	-	-	31	102
	3,506	**1,020**	**23**	**550**	**4**	**-47**	**5,498**
	2,634	1,020	23	50	4	-64	4,087
	872	-	-	499	-	16	1,410
	3,506	**1,020**	**23**	**550**	**4**	**-47**	**5,498**
	509	367	20	66	4	-54	1,195
	2,996	653	4	484	-	6	4,303
	3,506	**1,020**	**23**	**550**	**4**	**-47**	**5,498**

Effects on the balance sheet

Receivables, contract assets, and contract liabilities

Receivables from contracts with customers in which the recognized income is not subject to calculation using the effective interest method are accounted for in application of the rules in IFRS 15. Contract assets and contract liabilities are also recognized as a result of circumstances in which the fulfilment of the counter-performance is conditional on something other than the passage of time.

Changes in receivables from contracts with customers

€ million	Loans and advances to banks	Loans and advances to customers	Other receivables (other assets)
Balance as at Jan. 1, 2022	12	139	231
Additions	147	595	3,084
Derecognitions	-138	-602	-3,109
Other	-	-	3
Balance as at Dec. 31, 2022	22	132	209
Additions	151	547	3,110
Derecognitions	-147	-553	-3,102
Balance as at Dec. 31, 2023	**26**	**127**	**217**

Other disclosures on revenue from contracts with customers

Performance obligations

Performance obligations are satisfied predominantly over a period of time. Within any year, performance obligations over time are billed mainly on a monthly or quarterly basis. Performance obligations related to a point in time are satisfied when the service in question has been performed. The related fees are normally due after the service has been provided. In the property development business, the performance obligation is satisfied gradually with the completion of the individual stages of construction. The consideration does not vary for the most part.

» 104 Government grants

The ECB made additional liquidity available under the TLTRO III program in order to support lending to households and companies during the COVID-19 pandemic. The DZ BANK Group participates in the program as part of a bidder group comprising DZ BANK, TeamBank, and DZ HYP. The bidder group's total volume of €472 million (December 31, 2022: €11,000 million) is recognized under deposits from banks on the balance sheet.

The basic interest rate in the period January 1, 2022 to June 23, 2022 was minus 0.5 percent. For the period from after June 23, 2022 to November 22, 2022, the interest rate to be applied was the average deposit facility rate for the period from the start of the relevant TLTRO III tranche to November 22, 2022. From November 23, 2022 until maturity or early repayment of the relevant outstanding TLTRO III tranche, the basic interest rate is pegged to the average deposit facility rate for this period. The basic interest rate was recognized in net interest income in an amount of €306 million (2022: €99 million).

In accordance with the rules of the TLTRO III program, the interest on the liquidity provided depends on the net lending volume in the specified comparative periods. The net lending volume of the bidder group was higher than the required reference volume in the period October 1, 2020 to December 31, 2021, so a 0.5 percentage point lower interest rate applied in the period June 24, 2021 to June 23, 2022. As an additional interest-rate advantage was therefore granted by the ECB, which is a government agency within the meaning of IAS 20.3, this additional interest-rate advantage achieved was accounted for as a government grant in accordance with IAS 20 in 2022. As a result, additional income of €78 million was recognized in net interest income in 2022. Unlike in 2022, no interest-rate advantage was granted in 2023.

In addition to the TLTRO III program, government grants of €28 million were deducted from the carrying amount of investment property held by insurance companies (December 31, 2022: €25 million). The grants are non-interest-bearing, low-interest or forgivable loans. In addition, income subsidies of €1 million were recognized in profit or loss (2022: €1 million).

» 105 Letters of comfort

DZ BANK has issued letters of comfort for its subsidiaries DZ PRIVATBANK S.A. and DZ HYP. Except in the event of political risk, DZ BANK has thus undertaken to ensure, in proportion to its shareholding, that these companies are able to meet their contractual obligations.

The following letters of comfort have also been issued:

Entity covered by the letter of comfort	Subject of the undertaking
Alchemy Parts (Malta) Ltd. i.L., Floriana, Malta	Liabilities that are due up to the date of liquidation
DCII (Malta) Ltd. i.L., Floriana, Malta	Liabilities in connection with the 2022 annual financial statements and liabilities up to USD 240,000 that are due up to the date of liquidation if equity is negative
Delfco Leasing (Malta) Ltd., Floriana, Malta	Liabilities in connection with the 2022 annual financial statements and liabilities up to USD 280,000 that are due up to the date of liquidation if equity is negative
FPAC (Malta) Ltd. i.L., Floriana, Malta	Liabilities in connection with the 2022 annual financial statements and liabilities up to USD 210,000 that are due up to the date of liquidation if equity is negative
Lodestone Parts (Malta) Ltd. i.L., Floriana, Malta	Liabilities in connection with the 2022 annual financial statements and liabilities up to USD 220,000 that are due up to the date of liquidation if equity is negative
PW 4168 Solutions (Malta) Ltd., Floriana, Malta	Liabilities in connection with the 2022 annual financial statements and liabilities up to USD 210,000 that are due up to the date of liquidation if equity is negative

These entities are identified in the list of DZ BANK's shareholdings (note 115) as being covered by a letter of comfort.

» 106 Employees

Average number of employees by employee group:

	2023	2022
Full-time employees	26,179	25,863
Part-time employees	7,443	7,122
Total	**33,622**	**32,985**

» 107 Provisions for defined benefit plans

The provisions for defined benefit plans, which are recognized under provisions and other liabilities (provisions for defined benefit plans of insurance companies), predominantly result from pension plans that no further employees can join (closed plans). There are also defined benefit pension plans for members of boards of managing directors. The majority of new employees in Germany are offered defined contribution pension plans, for which it is not generally necessary to recognize a provision. The expense for defined contribution pension plans attributable to provisions and to other liabilities came to €20 million (2022: €19 million) and €20 million (2022: €18 million) respectively in 2023. Outside Germany, there continue to be both defined contribution and defined benefit plans that are open to new employees. The proportion of the group's total obligations accounted for by obligations outside Germany is not material, as can be seen from the table below.

Present value of defined benefit obligations

The present value of the defined benefit obligations is broken down by risk category as follows:

	Provisions		Other liabilities	
€ million	**Dec. 31, 2023**	Dec. 31, 2022	**Dec. 31, 2023**	Dec. 31, 2022
Final-salary-dependent plans	**2,302**	2,165	**-**	-
Germany	2,215	2,071	-	-
Other countries	88	95	-	-
Defined benefit contributory plans	**1,026**	952	**1,573**	1,497
Germany	798	733	1,570	1,495
Other countries	228	219	2	2
Accessorial plans	**87**	82	**-**	-
Germany	87	82	-	-
Total	**3,416**	**3,199**	**1,573**	**1,497**

The level of market interest rates for investment-grade fixed-income corporate bonds is a significant risk factor for all plans because the discount rate determined from these rates significantly affects the amount of the obligations.

Final-salary-dependent plans are pension obligations to employees, the amount of which depends on the employee's final salary before the pension trigger event occurs and that, for the most part, can be assumed to constitute a lifelong payment obligation. Section 16 (1) of the German Occupational Pensions Act (BetrAVG) requires employers in Germany to review every 3 years whether the pension amount needs to be adjusted to reflect the change in consumer prices or net wages (adjustment review obligation). The main risk factors in the measurement of final-salary-dependent pension plans are longevity, changes in salary, inflation risk, and the discount rate. Longevity, changes in salary, and inflation risk affect the amount of benefits.

The majority of defined benefit contributory plans comprise obligations to pay fixed capital amounts or amounts at fixed interest rates. An annuitization option exists for around half of the obligations. As a result, there may be lifelong payment obligations as well as lump-sum payments and installments. With the exception of the obligations managed through R+V Pensionsversicherung a.G., the contributions for most obligations are linked to remuneration. The majority of these plans are closed.

A considerable share of the volume is attributable to obligations managed through R+V Pensionsversicherung a.G., which have been treated as defined benefit pension plans since December 31, 2021. The phase of low interest rates, which prevailed until part way through 2022, and the related granting of initial fund loans by companies in the DZ BANK Group to R+V Pensionsversicherung a.G. in 2021 had necessitated a reassessment of the probability of drawdown by the pension providers on the basis of their subsidiary liability. Furthermore, a change to the accounting treatment had been required due to the rules of IDW AcP HFA 50 – IAS 19 – M1. If the value of the plan assets exceeds the present value of the defined benefit obligations, the notional surplus is not recognized as an asset and instead reduces the plan assets to the present value of the defined benefit obligations via the asset ceiling mechanism. This is because the plan assets cannot flow back to the extended initial fund's sponsor entities.

Accessorial plans are when the employer commits to a benefit that essentially corresponds to the benefit that is provided when an insured event occurs if the contributions are invested in a financial product of a third-party pension provider or insurer. The amount of the pension benefits therefore depends on the pension plan of the third-party pension provider, which is directly exposed to the risk factors longevity, changes in salary, and market interest-rate risk. Provided that economic conditions remain favorable, accessorial plans are almost risk free for the employer.

The pension plans agreed in Germany are not subject to minimum funding requirements. Minimum funding is required for some pension plans outside Germany owing to local regulations.

Actuarial assumptions

The 2018 G mortality tables published by Professor Dr. Klaus Heubeck are used to estimate average life expectancy in the context of measuring defined benefit obligations in Germany. Outside Germany, the measurement of defined benefit obligations is based on the Pri-2012 Private Retirement Plans Mortality Table in the United States, the S3PMA LT for males and S3PFA LT for females in the United Kingdom, the mortality tables pursuant to BVG 2020 GT in Switzerland, and the Dutch Prognosis Table AG2022 in the Netherlands. The following actuarial assumptions are also used:

	Provisions		Other liabilities	
Percent	**Dec. 31, 2023**	Dec. 31, 2022	**Dec. 31, 2023**	Dec. 31, 2022
Weighted salary increases	**2.12**	2.16	**2.50**	2.50
Weighted pension increases	**2.04**	2.09	**2.30**	2.30

The uniform discount rate used was 3.20 percent (December 31, 2022: 3.70 percent).

Sensitivity analysis

The following table shows the sensitivity of the present value of the defined benefit obligations to changes in the actuarial parameters. The effects shown are based on an isolated change to one parameter, with the other parameters remaining constant. Correlation effects between individual parameters are not considered.

	Provisions		Other liabilities	
€ million	**Dec. 31, 2023**	Dec. 31, 2022	**Dec. 31, 2023**	Dec. 31, 2022
Change in the present value of defined benefit obligations as at balance sheet date if				
the discount rate were 50 basis points higher	**-189**	-184	**-97**	-88
the discount rate were 50 basis points lower	**209**	207	**109**	102
the future salary increase were 50 basis points higher	**21**	30	**1**	1
the future salary increase were 50 basis points lower	**-21**	-30	**-1**	-1
the future pension increase were 25 basis points higher	**61**	58	**7**	6
the future pension increase were 25 basis points lower	**-59**	-55	**-7**	-6
the life expectancy of a 65-year-old man were 1 year higher	**116**	114	**43**	39
the life expectancy of a 65-year-old man were 1 year lower	**-118**	-104	**-45**	-41

The duration of the defined benefit obligations as at December 31, 2023 was 12.45 years under provisions (December 31, 2022: 12.45 years) and 13.34 years under other liabilities (December 31, 2022: 13.34 years).

Plan assets

Defined benefit obligations are offset by plan assets. The changes in the funded status of the defined benefit obligations were as follows:

	Provisions		Other liabilities	
€ million	**Dec. 31, 2023**	Dec. 31, 2022	**Dec. 31, 2023**	Dec. 31, 2022
Present value of defined benefit obligations funded by plan assets	2,835	2,664	1,517	1,439
Present value of defined benefit obligations not funded by plan assets	580	535	56	58
Present value of defined benefit obligations	**3,416**	**3,199**	**1,573**	**1,497**
less fair value of plan assets	-2,440	-2,352	-1,715	-1,653
Asset ceiling	51	55	267	275
Defined benefit obligations (net)	1,027	903	125	119
Recognized surplus	18	19	-	-
Provisions for defined benefit obligations	**1,045**	**922**	**125**	**119**
Reimbursement rights recognized as assets	4	4	3	3

Of the plan assets under provisions, assets of €1,490 million (December 31, 2022: €1,450 million) are attributable to contractual trust arrangements (CTAs) at DZ BANK and BSH, and are managed as trust assets by DZ BANK Pension Trust e.V., Frankfurt am Main. The relevant CTA investment committee defines the investment policy and strategy for the asset management company. Plan assets in the United States and United Kingdom are also managed by independent trusts. In Luxembourg, the assets were transferred to a pension fund and, in Switzerland, to a foundation. Trustees/administrators are responsible for the administration and management of the pension plans and for compliance with regulatory requirements.

The plan assets under other liabilities consist of assets at pension providers and in reinsured pension schemes.

The asset ceiling equates entirely to the amount of the notional surplus, i.e. the amount by which the fair value of the plan assets exceeds the present value of the defined benefit obligations resulting from the pension obligations managed through R+V Pensionsversicherung a.G.

The fair value of the plan assets is broken down by asset class as follows:

AS AT DECEMBER 31, 2023

	Provisions		Other liabilities	
€ million	With quoted market price in an active market	Without quoted market price in an active market	With quoted market price in an active market	Without quoted market price in an active market
Cash and money market investments	-	49	-	-
Bonds and other fixed-income securities	1,139	-	-	-
Shares	167	-	-	-
Investment fund units	222	271	-	-
Other shareholdings	-	3	-	-
Derivatives	2	1	-	-
Land and buildings	-	5	-	-
Entitlements arising from insurance policies	-	157	-	229
Investments of R+V Pensionsversicherung a.G.	-	289	-	1,486
Other assets	-	135	-	-
Total	**1,530**	**910**	**-**	**1,715**

AS AT DECEMBER 31, 2022

	Provisions		Other liabilities	
€ million	With quoted market price in an active market	Without quoted market price in an active market	With quoted market price in an active market	Without quoted market price in an active market
Cash and money market investments	-	55	-	-
Bonds and other fixed-income securities	1,109	-	-	-
Shares	150	-	-	-
Investment fund units	185	248	-	-
Other shareholdings	-	27	-	-
Derivatives	2	1	-	-
Land and buildings	-	5	-	-
Entitlements arising from insurance policies	-	152	-	223
Investments of R+V Pensionsversicherung a.G.	-	280	-	1,431
Other assets	-	138	-	-
Total	**1,446**	**906**	**-**	**1,653**

The plan assets included under bonds and other fixed-income securities and under investments of R+V Pensionsversicherung a.G. continue to be predominantly invested in bonds and other fixed-income securities. If market interest rates fall (as occurred in the year under review), the prices of the fixed-income assets rise. If interest rates rise, however, the prices of the fixed-income assets fall. This reflects the direction of interest-rate sensitivity of the defined benefit obligations and reduces risk to a certain extent. The fixed-income investments in the form of Pfandbriefe, government bonds, and corporate bonds are generally of high quality. A small proportion of non-investment-grade corporate bonds are held. The bulk of the investments (particularly Pfandbriefe and government bonds) are of prime quality (AAA to AA). The defined benefit obligations and the plan assets are largely in the euro, US dollar, and pound sterling currency areas. If the defined benefit obligations and the plan assets are in different currencies, derivative hedges are entered into in order to hedge the currency risk. As at December 31, 2023, the plan assets included €121 million of the group's own, transferable financial instruments (December 31, 2022: €142 million). The real estate and other assets contained in the plan assets are not used by the companies themselves. The other investments are predominantly floating-rate securities (equities and investment fund units) from around the world, entitlements arising from insurance contracts, short-term investments, other shareholdings, and real estate assets.

Contributions to plan assets of €37 million under provisions (2023: €36 million) and €27 million under other liabilities (2023: €27 million) are expected for 2024.

Defined benefit obligations (net)

The following table shows the changes in the defined benefit obligations (net), comprising the present value of the defined benefit obligations, the fair value of the plan assets, and the change in the asset ceiling:

PROVISIONS

€ million	Present value of defined benefit obligations	Fair value of plan assets	Asset ceiling	**Defined benefit obligations (net)**
Balance as at Jan. 1, 2022	4,117	-2,891	23	1,248
Current service cost	66	-	-	66
Interest income/expense	45	-32	-	14
Return on plan assets/reimbursement rights (excluding interest income)	-	599	-	599
Actuarial gains and losses due to changes in demographic assumptions	-1	-	-	-1
Actuarial gains (-)/losses (+) due to changes in financial assumptions	-982	-	-	-982
Actuarial gains and losses arising from experience adjustments	21	-	-	21
Changes in the effect of the asset ceiling (excluding interest income/expense)	-	-	32	32
Past service cost	3	-	-	3
Contributions from employers	-	-96	-	-96
Contributions from beneficiaries (employees)	8	-8	-	-
Pension benefits paid including plan settlements	-137	84	-	-53
of which ongoing	-136	82	-	-54
of which as part of plan settlements	-1	2	-	1
Plan takeovers	5	-6	-	-
Reclassifications	2	-	-	2
Changes attributable to currency translation	1	-2	-	-1
Acquisition/addition of subsidiaries	52	-	-	52
Balance as at Dec. 31, 2022	3,199	-2,352	55	903
Current service cost	44	-	-	44
Interest income/expense	115	-85	2	32
Return on plan assets/reimbursement rights (excluding interest income)	-	-57	-	-57
Actuarial gains and losses due to changes in demographic assumptions	-1	-	-	-1
Actuarial gains (-)/losses (+) due to changes in financial assumptions	162	-	-	162
Actuarial gains and losses arising from experience adjustments	25	-	-	25
Changes in the effect of the asset ceiling (excluding interest income/expense)	-	-	-6	-6
Contributions from employers	-	-25	-	-25
Contributions from beneficiaries (employees)	6	-7	-	0
Pension benefits paid including plan settlements	-142	89	-	-52
of which ongoing	-138	87	-	-51
of which as part of plan settlements	-3	2	-	-1
Plan takeovers	1	-1	-	1
Changes attributable to currency translation	6	-4	-	1
Balance as at Dec. 31, 2023	**3,416**	**-2,440**	**51**	**1,027**

OTHER LIABILITIES

€ million	Present value of defined benefit obligations	Fair value of plan assets	Asset ceiling	**Defined benefit obligations (net)**
Balance as at Jan. 1, 2022	2,091	-2,006	118	203
Current service cost	44	-	-	**44**
Interest income/expense	23	-22	1	**2**
Return on plan assets/reimbursement rights (excluding interest income)	-	352	-	**352**
Actuarial gains (-)/losses (+) due to changes in financial assumptions	-652	-	-	**-652**
Actuarial gains and losses arising from experience adjustments	56	-	-	**56**
Changes in the effect of the asset ceiling (excluding interest income/expense)	-	-	156	**156**
Contributions from beneficiaries (employees)	1	-34	-	**-33**
Pension benefits paid including plan settlements	-66	57	-	**-9**
Balance as at Dec. 31, 2022	1,497	-1,653	275	119
Current service cost	25	-	-	**25**
Interest income/expense	54	-61	11	**4**
Return on plan assets/reimbursement rights (excluding interest income)	-	-24	-	**-24**
Actuarial gains (-)/losses (+) due to changes in financial assumptions	97	-	-	**97**
Actuarial gains and losses arising from experience adjustments	-33	-	-	**-33**
Changes in the effect of the asset ceiling (excluding interest income/expense)	-	-	-19	**-19**
Contributions from beneficiaries (employees)	-	-36	-	**-36**
Pension benefits paid including plan settlements	-68	59	-	**-9**
Balance as at Dec. 31, 2023	**1,573**	**-1,715**	**267**	**125**

The transactions to be recognized in profit or loss are included in staff expenses.

The actuarial losses to be recognized in other comprehensive income that were due to changes in the financial assumptions used to calculate the present value of the defined benefit obligations under provisions and other liabilities primarily resulted from the decrease in the underlying discount rate to 3.20 percent as at December 31, 2023 (December 31, 2022: 3.70 percent). Other effects were also taken into account, such as the impact of a virtual increase in current pension entitlements of employees carried out by a number of group entities (from 4.0 percent to 6.4 percent) in order to factor in the higher pension adjustments that these entities will have to make in future years as a result of inflation.

The change in the carrying amounts is largely attributable to the accounting treatment of the pension obligations managed through R+V Pensionsversicherung a.G. The asset ceiling affected plan assets resulting from the initial recognition of the pension obligations managed through R+V Pensionsversicherung a.G. as defined benefit pension plans.

Multi-employer plans

Along with other financial institutions in Germany, entities of the DZ BANK Group are members of organizations such as Versicherungsverein des Bankgewerbes a.G., Berlin, (BVV) and BVV Versorgungskasse des Bankgewerbes e.V., Berlin, (BVVeV). These pension providers provide retirement benefits to eligible employees in Germany. These include plans into which both employers and employees make regular contributions that are usually calculated by applying a contribution rate (as a percentage) to the monthly gross income of the current employees and adding the employer contribution. The tariffs of the pension providers cover both fixed annuity payments with policyholder participation and capital payments. The member entities participate in a settlement class containing the actuarial risk of all pension beneficiaries. There are no agreements about the distribution of deficits or surpluses if the plan is wound up or if a member entity withdraws from the plan. As at December 31, 2023, the two BVV pension providers did not disclose any deficit or surplus. Each member entity is liable only for its own employment-law obligations in accordance with the insurance terms and conditions, benefit plans, and articles of association. The pension provider cannot allocate the assets in question and the defined benefit obligations relating to current and former employees to the individual member entities. The multi-employer defined benefit plans are therefore accounted for as if they were defined contribution plans in accordance with IAS 19.34. Of the 784 entities that are members of the BVV, 4 are DZ BANK Group entities. Approximately 0.6 percent of the current and former employees covered by the BVV are current or former employees of the DZ BANK Group.

Obligations with minimum funding requirements outside Germany

Measured using the present value of the defined benefit obligations, a volume of €302 million was attributable to plans outside Germany that are subject to minimum funding requirements (December 31, 2022: €301 million). Occupational pension provision in Luxembourg is governed by the Luxembourg Occupational Pensions Act of June 8, 1999 in its most recent version dated January 1, 2019. DZ PRIVATBANK S.A. and IPConcept (Luxemburg) S.A., Strassen, Luxembourg, have decided to manage occupational pension provision through a pension fund. The legally independent pension fund is subject to the Luxembourg Pension Fund Act of July 13, 2005. The pension plan at DZ BANK's London branch is bound by the funding rules of the United Kingdom's Pensions Regulator. The pension obligations for employees of DZ BANK's New York branch are governed by the minimum funding requirements pursuant to the US Employee Retirement Income Security Act (ERISA). The rules laid down by the Swiss Federal Law on Occupational Retirement, Survivors' and Disability Pension Plans (Swiss BVG) apply to DZ PRIVATBANK Schweiz and IPConcept (Schweiz) AG, Zurich, Switzerland.

» 108 Auditor fees

The total fees charged for 2023 by the independent auditors of the consolidated financial statements, PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft (PwC), Frankfurt am Main, its affiliates, and other firms in the international PwC network are broken down by type of service as follows:

€ million	2023 Total	2023 of which Germany
Auditing services	13.2	11.3
Other attestation services	1.5	1.2
Other services	0.3	0.3
Total	**15.1**	**12.8**

The fees for auditing services comprise expenses relating to the audit of the consolidated financial statements and group management report of DZ BANK as well as the audits of the annual financial statements and management reports of DZ BANK and consolidated subsidiaries carried out by the auditors of the consolidated financial statements. The fees for auditing services also comprise expenses relating to the review by the auditor of the condensed interim consolidated financial statements and interim group management report. The fees for other attestation services comprise the fees charged for the audit in accordance with section 89 of the German Securities Trading Act (WpHG) and for other audits for which the auditors' professional seal must or can be applied, mainly in connection with regulatory requirements. The fees for other services predominantly include fees for consultancy services.

» 109 Remuneration for the Board of Managing Directors and Supervisory Board of DZ BANK

In 2023, overall remuneration for DZ BANK's Board of Managing Directors from the group in accordance with IAS 24.17 amounted to €13.3 million (2022: €15.4 million). This total is broken down into short-term employee benefits of €9.7 million (2022: €10.2 million), post-employment benefits of €1.9 million (2022: €3.4 million), and share-based payments of €1.7 million (2022: €1.8 million). The remuneration for the Board of Managing Directors in 2023 and 2022 included the total bonus awarded to the Board of Managing Directors for the year in question. Supervisory Board remuneration amounted to €1.0 million (2022: €1.0 million) and consisted of payments due in the short term.

The remuneration for the Board of Managing Directors included contributions of €0.4 million (2022: €0.4 million) to defined contribution pension plans. DZ BANK has defined benefit obligations for the members of the Board of Managing Directors amounting to €30.1 million (December 31, 2022: €27.8 million).

In 2023, the total remuneration for the Board of Managing Directors of DZ BANK for the performance of their duties at DZ BANK and its subsidiaries pursuant to section 314 (1) no. 6a HGB was €11.8 million (2022: €12.4 million), while the total remuneration for the Supervisory Board for the performance of these duties amounted to €1.0 million (2022: €1.0 million).

The total remuneration paid to former members of the Board of Managing Directors or their surviving dependants pursuant to section 314 (1) no. 6b HGB amounted to €9.3 million in 2023 (2022: €9.2 million). DZ BANK has defined benefit obligations for former members of the Board of Managing Directors or their surviving dependants amounting to €134.3 million (December 31, 2022: €131.0 million).

» 110 Share-based payment transactions

The entities in the DZ BANK Group have entered into share-based payment agreements with the members of the Board of Managing Directors and with certain other salaried employees.

BSH has entered into agreements governing share-based variable remuneration with the members of its Board of Managing Directors, the managing directors of Schwäbisch Hall Kreditservice GmbH, the heads of division, and a group of selected managers (risk takers). The amount of variable remuneration depends on the achievement of agreed targets. The parameters factored into the remuneration are management-related KPIs that are important to a building society. If the variable remuneration amounts to €50,000 or more, 20 percent of it is paid immediately in the following year and 20 percent after a one-year retention period. 60 percent of the bonus is deferred over a period of up to 5 years, with each payment made after a subsequent retention period of one year. All amounts earmarked for deferred payment are pegged to the change in the enterprise value of the building society. The enterprise value is determined each year by means of a business valuation. If the enterprise value falls, then the retained variable remuneration components are reduced according to specified bands. A rise in the value does not lead to an increase in the deferred remuneration. Negative contributions to profits are taken into account when setting bonuses and setting pro rata deferred bonuses and at the end of the retention period, which may cause the variable remuneration to be reduced or not be paid.

The following table shows the changes in unpaid remuneration components at BSH:

€ million	Board of Managing Directors	Risk takers
Unpaid share-based payments as at Jan. 1, 2022	1.7	0.3
Remuneration granted	0.7	0.4
Payment of remuneration granted in 2021	-0.1	-
Payment of remuneration granted in previous years	-0.4	-0.1
Unpaid share-based payments as at Dec. 31, 2022	1.9	0.5
Remuneration granted	0.7	0.3
Payment of remuneration granted in 2022	-0.2	-0.1
Payment of remuneration granted in previous years	-0.3	-
Unpaid share-based payments as at Dec. 31, 2023	**2.1**	**0.7**

R+V has entered into agreements governing variable remuneration paid over several years with the members of its Board of Managing Directors and a group of selected salaried employees (risk takers). The amount of variable remuneration depends on the achievement of agreed targets. A proportion of 60 percent of the variable remuneration for members of the Board of Managing Directors, and 40 percent of that for the selected salaried employees, depends on the change in value of the shares in R+V Versicherung AG. In these arrangements, the share value equates to the fair market value of the unlisted shares in R+V Versicherung AG as at December 31 of the year in question. The portion of the bonus subject to payout restrictions will be paid out after 3 years without any reduction if the share value equates to more than 85 percent of the value at the end of the baseline year. If the share value is between 75 percent and 85 percent of this figure, the bonus portion subject to payout restrictions is reduced by half. If the share value falls below 75 percent, payment of the part of the bonus subject to payout restrictions is canceled in full.

The following table shows the changes in unpaid remuneration components at R+V:

€ million	Board of Managing Directors	Risk takers
Unpaid share-based payments as at Jan. 1, 2022	2.7	0.3
Remuneration granted	1.0	0.1
Payment of remuneration granted in previous years	-0.8	-0.1
Unpaid share-based payments as at Dec. 31, 2022	2.9	0.3
Remuneration granted	1.0	0.1
Payment of remuneration granted in previous years	-0.9	-0.1
Unpaid share-based payments as at Dec. 31, 2023	**3.0**	**0.3**

TeamBank has entered into agreements governing variable remuneration paid over several years with the members of its Board of Managing Directors and risk takers. The amount of variable remuneration depends on the achievement of agreed targets. 20 percent of the variable remuneration is paid immediately in the following year after it has been set. Another 20 percent is subject to a retention period of one calendar year. The remaining 60 percent is paid in 5 tranches, each of 12 percent, within 5 calendar years. The variable remuneration is dependent on the long-term changes in the enterprise value of TeamBank. The value is determined using the income capitalization approach.

The following table shows the changes in unpaid remuneration components at TeamBank:

€ million	Board of Managing Directors	Risk takers
Unpaid share-based payments as at Jan. 1, 2022	1.2	0.1
Remuneration granted	0.5	0.1
Payment of remuneration granted in 2021	-0.1	-
Payment of remuneration granted in previous years	-0.2	-
Unpaid share-based payments as at Dec. 31, 2022	1.4	0.2
Remuneration granted	0.5	0.1
Payment of remuneration granted in 2022	-0.1	-
Payment of remuneration granted in previous years	-0.2	-
Unpaid share-based payments as at Dec. 31, 2023	**1.5**	**0.3**

DZ BANK has entered into agreements governing variable remuneration paid over several years with the members of its Board of Managing Directors, heads of division, and a group of selected salaried employees (risk takers). The amount of variable remuneration depends on the achievement of agreed targets. In the case of members of the Board of Managing Directors and heads of division, 80 percent of the total variable remuneration is deferred over a period of up to 6 years from when the bonus is determined. For risk takers below the level of head of division with variable remuneration of more than €130,000, 80 percent of the total variable remuneration is deferred over a period of up to 5 years from when the bonus is determined. For risk takers below the level of head of division with variable remuneration of more than €50,000 and up to €130,000, 70 percent of the total variable remuneration is deferred over a period of up to 5 years from when the bonus is determined. Amounts are paid out after taking into account deferral or retention periods. The deferred portion of the variable remuneration may be reduced or even fully withdrawn if there is an adverse change in the value of DZ BANK shares or if there are negative contributions to profits from DZ BANK, individual divisions, or individual activities. A rise in the value of DZ BANK shares does not lead to an increase in the deferred remuneration. The value of the shares is determined each year by means of an independent business valuation. The deferred portion of the variable remuneration for members of the Board of Managing Directors is reduced by 50 percent if the share price falls by between 7.5 percent and 12.5 percent. If the share price drops by more than 12.5 percent, the deferred portion of the variable remuneration is canceled. In the case of heads of division and risk takers below the level of head of division, the deferred portion of the variable remuneration is reduced by 25 percent if the share price falls by between 15 percent and 20 percent. If the share price drops by between 20 percent and 25 percent, the deferred portion of the variable remuneration is reduced by 50 percent. If the share price drops by more than 25 percent, the deferred portion of the variable remuneration is canceled. If the change in the share price does not reach the specified threshold values, the deferred portion of the variable remuneration is not reduced as a result of the change in the share price. Based on a value per DZ BANK share of €8.65 as at December 31, 2018, a value of €8.35 as at December 31, 2019, a value per share of €8.05 as at December 31, 2020, a value per share of €8.80 as at December 31, 2021, a value per share of €9.05 as at December 31, 2022, and a value per share of €10.45 as at December 31, 2023, it can currently be assumed that the deferred remuneration will be paid in full. No options have been granted for these groups of employees. Share-based payments are granted in the year after they have been earned.

The following summary shows the change in unpaid share-based payment components at DZ BANK:

€ million	Board of Managing Directors	Risk takers
Unpaid share-based payments as at Jan. 1, 2022	3.2	14.9
Remuneration granted	1.9	4.8
Payment of remuneration granted in 2021	-0.5	-3.2
Payment of remuneration granted in previous years	-1.0	-4.1
Unpaid share-based payments as at Dec. 31, 2022	3.6	12.4
Remuneration granted	1.9	3.9
Payment of remuneration granted in 2022	-0.4	-2.2
Payment of remuneration granted in previous years	-1.7	-3.9
Unpaid share-based payments as at Dec. 31, 2023	**3.4**	**10.1**

DZ HYP has entered into agreements governing variable remuneration paid over several years with the members of its Board of Managing Directors and a group of selected salaried employees (risk takers). The level of variable performance-based remuneration is based on the achievement of quantitative and qualitative targets derived from the corporate strategy in the form of group, bank, area of board responsibility, and individual targets. 20 percent of the variable remuneration is paid immediately in the following year after the annual financial statements have been adopted and the variable remuneration has been set by the Supervisory Board. Payment of the remaining 80 percent of the bonus set for the previous year is spread out over a period of up to 6 years in total, taking into account deferral and retention periods. All amounts earmarked for deferred payment are linked to the long-term performance of DZ HYP because they are pegged to the value of its shares. Negative contributions to profits are taken into account when setting bonuses and pro rata deferrals, which may cause the variable remuneration to be reduced or cancelled.

The heads of division are classified as risk takers. Individual contractual agreements on variable performance-based remuneration have been reached with the heads of division. The variable performance-based remuneration is set with reference to a contractually agreed target bonus. Quantitative and qualitative targets derived from the corporate strategy in the form of group, overall bank, divisional, and individual targets are assessed and used to determine the actual bonus level. If the variable performance-based remuneration amounts to €50,000 or more, 20 percent of it is paid immediately in the following year. The other 80 percent of the calculated bonus is deferred over a period of up to 6 years. Of this deferred amount, 50 percent is pegged to the long-term performance of DZ HYP, which is calculated on the basis of the enterprise value. Negative contributions to profits are taken into account when setting bonuses and pro rata deferrals.

The following table shows the changes in unpaid remuneration components at DZ HYP:

€ million	Board of Managing Directors	Risk takers
Unpaid share-based payments as at Jan. 1, 2022	1.1	0.4
Remuneration granted	0.4	0.1
Payment of remuneration granted in 2021	-0.1	-
Payment of remuneration granted in previous years	-0.3	-0.1
Unpaid share-based payments as at Dec. 31, 2022	1.1	0.4
Remuneration granted	0.4	0.2
Payment of remuneration granted in 2022	-0.1	-0.1
Payment of remuneration granted in previous years	-0.3	-0.1
Unpaid share-based payments as at Dec. 31, 2023	**1.0**	**0.5**

DZ PRIVATBANK has entered into arrangements about the payment of variable remuneration components with the members of its Board of Managing Directors and a group of selected salaried employees (risk takers). The amount of variable remuneration depends on the achievement of agreed targets. 80 percent of the total variable remuneration is deferred over a period of up to 6 years from when the bonus is determined. Amounts are paid out after taking into account deferral or retention periods. All deferred payouts are linked to the long-term change in the enterprise value of DZ PRIVATBANK. The enterprise value is determined each year by means of an independent business valuation. Negative contributions to profits are taken into account when setting bonuses, when setting each pro rata deferred bonus, and when setting the pro rata deferred bonus at the end of the retention period, which may cause the variable remuneration to be reduced or not be paid.

The following table shows the changes in unpaid remuneration components at DZ PRIVATBANK:

€ million	Board of Managing Directors	Risk takers
Unpaid share-based payments as at Jan. 1, 2022	1.8	0.4
Remuneration granted	1.4	0.1
Payment of remuneration granted in 2021	-0.1	-
Payment of remuneration granted in previous years	-0.2	-0.1
Reduction of share-based payments	-0.2	-
Unpaid share-based payments as at Dec. 31, 2022	2.6	0.4
Remuneration granted	1.3	0.2
Payment of remuneration granted in 2022	-0.1	-
Payment of remuneration granted in previous years	-0.3	-0.1
Unpaid share-based payments as at Dec. 31, 2023	**3.5**	**0.5**

In addition to a basic salary, the remuneration system for the Board of Managing Directors of VR Smart Finanz includes a variable remuneration component. It is determined on the basis of quantitative and qualitative targets derived from the corporate strategy in the form of group, bank, area of board responsibility, and individual targets. A three-year period is applied as the basis for calculating target achievement. The maximum variable remuneration is set in the event of full achievement of each individual target. All amounts earmarked for deferred payment are linked to the long-term performance of VR Smart Finanz because they are pegged to its enterprise value. Negative contributions to profits are taken into account when setting the amount of variable remuneration and pro rata deferrals, which may cause the variable remuneration to be reduced or cancelled.

The following table shows the changes in unpaid remuneration components at VR Smart Finanz:

€ million	Board of Managing Directors
Unpaid share-based payments as at Jan. 1, 2022	1.3
Remuneration granted	0.4
Payment of remuneration granted in 2021	-0.1
Payment of remuneration granted in previous years	-0.3
Reduction of share-based payments	-0.2
Unpaid share-based payments as at Dec. 31, 2022	1.1
Remuneration granted	0.4
Payment of remuneration granted in previous years	-0.2
Reduction of share-based payments	-0.2
Unpaid share-based payments as at Dec. 31, 2023	**1.1**

If the variable remuneration granted to the Board of Managing Directors and risk takers at DVB exceeded €50,000 for a financial year, it was not paid out immediately and was instead subject to certain deferral periods and additional retention periods. The employee became entitled immediately (in the following year) to 40 percent of the granted variable remuneration. Only 50 percent of this amount was paid immediately; the remaining 50 percent was subject to an additional one-year retention period, during which it was pegged to the change in the DVB Bank Group's enterprise value. The remaining 60 percent of the variable remuneration was divided into 5 tranches (each equating to 12 percent) and deferred over a period of 1 to 5 years. After the deferral period, 50 percent of each tranche was subject to an additional one-year retention period and was pegged to the change in the DVB Bank Group's enterprise value during both the deferral period and the retention period. Entitlements arising from deferred variable remuneration had been sold in connection with the sale of the Aviation Asset Management and Aviation Investment Management businesses in 2021. The proportion of the deferred variable remuneration that had been sold that was attributable to share-based payments was shown under disposal of share-based payments in 2021. The disposal of share-based payments in 2022 was due to the merger of DVB Bank SE into DZ BANK AG.

The following table shows the changes in unpaid remuneration components at DVB in 2022:

€ million	Board of Managing Directors	Risk takers
Unpaid share-based payments as at Jan. 1, 2022	0.4	2.2
Remuneration granted	0.1	1.0
Payment of remuneration granted in 2021	-0.1	-0.2
Payment of remuneration granted in previous years	-	-0.4
Disposal of share-based payments	-0.4	-2.6
Unpaid share-based payments as at Dec. 31, 2022	-	-

In 2023, the agreements described above gave rise to expenses for share-based payment transactions in the DZ BANK Group of €18.6 million (2022: €11.6 million) and income from the reversal of provisions for share-based payments of €0.2 million (2022: €0.2 million). As at December 31, 2023, the provisions recognized for share-based payment transactions in the DZ BANK Group amounted to €61.8 million (December 31, 2022: €54.4 million).

» 111 Related party disclosures

DZ BANK enters into transactions with related parties (persons or entities) as part of its ordinary business activities. All of this business is transacted on an arm's length basis. Most of these transactions involve typical banking products and financial services.

Transactions with related parties (entities)

€ million	Dec. 31, 2023	Dec. 31, 2022
Loans and advances to banks	**53**	**24**
to joint ventures	53	24
Loans and advances to customers	**160**	**140**
to subsidiaries	53	44
to joint ventures	13	11
to associates	75	69
to pension plans for the benefit of employees	19	15
Financial assets held for trading	**2**	**2**
of other related parties (entities)	1	2
Investments	**16**	**11**
of subsidiaries	11	6
of joint ventures	5	5
Investments held by insurance companies	**246**	**210**
of subsidiaries	144	126
of pension plans for the benefit of employees	102	84
Other assets	**32**	**34**
of subsidiaries	30	28
of associates	1	1
of pension plans for the benefit of employees	-	5
Non-current assets and disposal groups classified as held for sale	**6**	**-**
of associates	6	-
Deposits from banks	**49**	**305**
owed to subsidiaries	5	7
owed to joint ventures	44	298
Deposits from customers	**254**	**184**
owed to subsidiaries	166	122
owed to associates	6	4
owed to other related parties (entities)	82	58
Financial liabilities held for trading	**4**	**5**
of other related parties (entities)	4	5
Insurance liabilities	**1**	**-**
of subsidiaries	1	-
Other liabilities	**17**	**27**
of subsidiaries	8	20
of joint ventures	1	1
of pension plans for the benefit of employees	8	7
Subordinated capital	**34**	**23**
of pension plans for the benefit of employees	34	22
of other related parties (entities)	-	1

€ million	Dec. 31, 2023	Dec. 31, 2022
Financial guarantee contracts	**44**	**1**
for subsidiaries	42	-
for associates	1	-
Loan commitments	**998**	**926**
to subsidiaries	59	45
to joint ventures	350	250
to associates	1	1
to pension plans for the benefit of employees	588	630

Income of €3 million (2022: income of €15 million) in the total reported net interest income and expenses of €22 million (2022: expenses of €56 million) in the total reported net income from insurance business were attributable to transactions with related parties (entities). The balance of income and expenses included in the total reported net fee and commission income amounted to €0 million (2022: expenses of €1 million).

Transactions with related parties (persons)

Related parties (persons) are key management personnel who are directly or indirectly responsible for the planning, management, and supervision of the activities of DZ BANK, as well as their close family members. For the purposes of IAS 24, the DZ BANK Group considers the members of the Board of Managing Directors and the members of the Supervisory Board to be key management personnel. As at December 31, 2023, the DZ BANK Group's loans and loan commitments to related parties (persons) amounted to €0.4 million (December 31, 2022: €0.3 million).

Like unrelated parties, key management personnel and their close family members also have the option of obtaining further financial services from the DZ BANK Group, for example in the form of insurance contracts, home savings contracts, and leases. Where they made use of this option, the transactions were carried out on an arm's-length basis.

» 112 Board of Managing Directors

Uwe Fröhlich
(Co-Chief Executive Officer)
Responsibilities: Cooperative Banks/Verbund; Communications & Marketing; Research and Economics; Strategy & Group Development (including Sustainability Coordination); Structured Finance

Dr. Cornelius Riese
(Co-Chief Executive Officer)
Responsibilities: Group Audit; Legal; Strategy & Group Development (including Sustainability Coordination)

Souâd Benkredda
Responsibilities: Capital Markets Trading; Capital Markets Institutional Clients; Capital Markets Retail Clients; Group Treasury

Uwe Berghaus
Responsibilities: Corporate Banking Baden-Württemberg; Corporate Banking Bavaria; Corporate Banking North and East; Corporate Banking West/Central; Investment Promotion; Central Corporate Banking

Dr. Christian Brauckmann
Responsibilities: IT; Services & Organisation

Ulrike Brouzi
Responsibilities: Bank Finance; Compliance; Group Finance; Group Financial Services

Johannes Koch
(Member of the Board of Managing Directors since January 1, 2024)
Responsibilities: Group Human Resources

Michael Speth
Responsibilities: Group Risk Controlling;

Group Risk Control & Services; Credit

Thomas Ullrich
Responsibilities: Operations; Payments & Accounts; Transaction Management

» 113 Supervisory Board

Henning Deneke-Jöhrens
(Chairman of the Supervisory Board)
Chief Executive Officer
Volksbank eG Hildesheim-Lehrte-Pattensen

Ulrich Birkenstock
(Deputy Chairman of the Supervisory Board)
Employee
R+V Allgemeine Versicherung AG

Ingo Stockhausen
(Deputy Chairman of the Supervisory Board)
Chief Executive Officer
Volksbank Oberberg eG

Uwe Barth
Spokesman of the Board of Managing Directors
Volksbank Freiburg eG

Heiner Beckmann
Senior manager
Sales Director South-West
R+V Allgemeine Versicherung AG

Pia Erning
Employee
DZ BANK AG
Deutsche Zentral-Genossenschaftsbank

Timm Häberle
Chief Executive Officer
VR-Bank Ludwigsburg eG

Dr. Peter Hanker
Spokesman of the Board of Managing Directors
Volksbank Mittelhessen eG

Andrea Hartmann
Employee
Bausparkasse Schwäbisch Hall AG

Pilar Herrero Lerma
Employee
DZ BANK AG
Deutsche Zentral-Genossenschaftsbank

Dr. Dierk Hirschel
Head of the Economic Policy Division
ver.di Bundesverwaltung

Josef Hodrus
Spokesman of the Board of Managing Directors
Volksbank Allgäu-Oberschwaben eG

Marija Kolak
President
Bundesverband der Deutschen Volksbanken
und Raiffeisenbanken e.V. (BVR)

Sascha Monschauer
Chief Executive Officer
Volksbank RheinAhrEifel eG

Wolfgang Nett
Sales Director
Union Investment Privatfonds GmbH

Rolf Dieter Pogacar
Employee
R+V Allgemeine Versicherung AG

Stephan Schack
Chief Executive Officer
Volksbank Raiffeisenbank eG, Itzehoe

Sigrid Stenzel
Freelance employee
ver.di Niedersachsen-Bremen

Kevin Voß
Labor union secretary
Banking industry group
ver.di Bundesverwaltung

Dr. Gerhard Walther
Chief Executive Officer
VR-Bank Mittelfranken Mitte eG

Supervisory Board committees

Nominations Committee
Henning Deneke-Jöhrens, Chairman
Ulrich Birkenstock, Deputy Chairman*
Pia Erning*
Timm Häberle
Wolfgang Nett*
Ingo Stockhausen

Remuneration Control Committee
Henning Deneke-Jöhrens, Chairman
Ulrich Birkenstock, Deputy Chairman*
Pia Erning*
Dr. Peter Hanker
Wolfgang Nett*
Ingo Stockhausen

Mediation Committee
Henning Deneke-Jöhrens, Chairman
Ulrich Birkenstock, Deputy Chairman*
Dr. Dierk Hirschel, member since January 17, 2023*
Ingo Stockhausen

Audit Committee
Timm Häberle, Chairman
Henning Deneke-Jöhrens
Pia Erning*
Dr. Peter Hanker
Andrea Hartmann*
Marija Kolak
Rolf Dieter Pogacar*
Stephan Schack
Ingo Stockhausen

Risk Committee
Dr. Peter Hanker, Chairman
Heiner Beckmann*
Henning Deneke-Jöhrens
Timm Häberle
Andrea Hartmann*
Pilar Herrero Lerma, member since May 24, 2023*
Dr. Dierk Hirschel*
Sascha Monschauer
Ingo Stockhausen
Dr. Gerhard Walther

*Employee representatives.

» 114 Supervisory mandates held by members of the Board of Managing Directors and employees

Within DZ BANK

As at December 31, 2023, members of the Board of Managing Directors and employees also held mandates on the statutory supervisory bodies of major companies. These and other notable mandates are listed below. Companies included in the consolidation are indicated with an asterisk (*).

Members of the Board of Managing Directors

Uwe Fröhlich (Co-Chief Executive Officer)	DZ HYP AG, Hamburg and Münster (*) Chairman of the Supervisory Board
	DZ PRIVATBANK S.A., Strassen (*) Chairman of the Supervisory Board
	VR Smart Finanz AG, Eschborn (*) Chairman of the Supervisory Board
Dr. Cornelius Riese (Co-Chief Executive Officer)	Bausparkasse Schwäbisch Hall AG, Schwäbisch Hall (*) Chairman of the Supervisory Board
	R+V Versicherung AG, Wiesbaden (*) Chairman of the Supervisory Board
	TeamBank AG Nürnberg, Nuremberg (*) Chairman of the Supervisory Board
	Union Asset Management Holding AG, Frankfurt am Main (*) Chairman of the Supervisory Board
Souâd Benkredda	R+V Lebensversicherung AG, Wiesbaden (*) Member of the Supervisory Board
Uwe Berghaus	DZ HYP AG, Hamburg and Münster (*) Member of the Supervisory Board
	EDEKABANK AG, Hamburg Member of the Supervisory Board

Dr. Christian Brauckmann	Atruvia AG, Frankfurt am Main Member of the Supervisory Board
	Deutsche WertpapierService Bank AG, Frankfurt am Main Chairman of the Supervisory Board
	DZ PRIVATBANK S.A., Strassen (*) Deputy Chairman of the Supervisory Board
Ulrike Brouzi	Bausparkasse Schwäbisch Hall AG, Schwäbisch Hall (*) Member of the Supervisory Board
	R+V Allgemeine Versicherung AG, Wiesbaden (*) Member of the Supervisory Board
	R+V Lebensversicherung AG, Wiesbaden (*) Member of the Supervisory Board
	Salzgitter AG, Salzgitter Member of the Supervisory Board
	Union Asset Management Holding AG, Frankfurt am Main (*) Member of the Supervisory Board
Johannes Koch (member since January 1, 2024)	Deutsche WertpapierService Bank AG, Frankfurt am Main Member of the Supervisory Board
Michael Speth	BAG Bankaktiengesellschaft, Hamm Member of the Supervisory Board
	DZ HYP AG, Hamburg and Münster (*) Member of the Supervisory Board
	R+V Versicherung AG, Wiesbaden (*) Member of the Supervisory Board
	VR Smart Finanz AG, Eschborn (*) Deputy Chairman of the Supervisory Board
Thomas Ullrich	Deutsche WertpapierService Bank AG, Frankfurt am Main Member of the Supervisory Board
	TeamBank AG Nürnberg, Nuremberg (*) Deputy Chairman of the Supervisory Board
	VR Payment GmbH, Frankfurt am Main (*) Chairman of the Supervisory Board

DZ BANK employees

Rolf Büscher	ReiseBank AG, Frankfurt am Main (*) Member of the Supervisory Board
Winfried Münch	AKA Ausfuhrkredit-Gesellschaft mbH, Frankfurt am Main Member of the Supervisory Board
Jochen Philipp	Banco Cooperativo Español S.A., Madrid Member of the Board of Directors
Claudio Ramsperger	Cassa Centrale Banca – Credito Cooperativo Italiano S.p.A., Trento Member of the Board of Directors
Gregor Roth	ReiseBank AG, Frankfurt am Main (*) Chairman of the Supervisory Board VR Payment GmbH, Frankfurt am Main (*) Member of the Supervisory Board
Peter Tenbohlen	Deutsche WertpapierService Bank AG, Frankfurt am Main Member of the Supervisory Board
Dr. Ulrich Walter	Deutsche WertpapierService Bank AG, Frankfurt am Main Member of the Supervisory Board
Dagmar Werner	Banco Cooperativo Español S.A., Madrid Member of the Board of Directors

In the DZ BANK Group

As at December 31, 2023, members of the Boards of Managing Directors and employees also held mandates on the statutory supervisory bodies of the following major companies in Germany. Companies included in the consolidation are indicated with an asterisk (*).

Reinhard Klein Chief Executive Officer Bausparkasse Schwäbisch Hall AG	Schwäbisch Hall Kreditservice GmbH, Schwäbisch Hall (*) Chairman of the Supervisory Board
Peter Magel Member of the Board of Managing Directors Bausparkasse Schwäbisch Hall AG	Schwäbisch Hall Kreditservice GmbH, Schwäbisch Hall (*) Member of the Supervisory Board
Claudia Klug General Executive Manager Bausparkasse Schwäbisch Hall AG	Schwäbisch Hall Facility Management GmbH, Schwäbisch Hall (*) Chairwoman of the Supervisory Board
Dr. Dirk Otterbach Senior manager Bausparkasse Schwäbisch Hall AG	Schwäbisch Hall Facility Management GmbH, Schwäbisch Hall (*) Member of the Supervisory Board

Dr. Norbert Rollinger Chief Executive Officer R+V Versicherung AG	Condor Lebensversicherungs-AG, Hamburg (*) Chairman of the Supervisory Board KRAVAG-ALLGEMEINE Versicherungs-AG, Hamburg (*) Chairman of the Supervisory Board KRAVAG-LOGISTIC Versicherungs-AG, Hamburg (*) Chairman of the Supervisory Board Raiffeisendruckerei GmbH, Neuwied Member of the Supervisory Board R+V Allgemeine Versicherung AG, Wiesbaden (*) Chairman of the Supervisory Board R+V Krankenversicherung AG, Wiesbaden (*) Chairman of the Supervisory Board R+V Lebensversicherung AG, Wiesbaden (*) Chairman of the Supervisory Board R+V Pensionsfonds AG, Wiesbaden (*) Chairman of the Supervisory Board Union Asset Management Holding AG, Frankfurt am Main (*) Member of the Supervisory Board
Claudia Andersch Member of the Board of Managing Directors R+V Versicherung AG	CHEMIE Pensionsfonds AG, Munich (*) Member of the Supervisory Board Condor Lebensversicherungs-AG, Hamburg (*) Member of the Supervisory Board R+V Pensionsfonds AG, Wiesbaden (*) Deputy Chairwoman of the Supervisory Board R+V Pensionskasse AG, Wiesbaden (*) Chairwoman of the Supervisory Board
Dr. Klaus Endres Member of the Board of Managing Directors R+V Versicherung AG	R+V Direktversicherung AG, Wiesbaden (*) Chairman of the Supervisory Board Securitas Holding GmbH, Berlin (*) Member of the Supervisory Board Sprint Sanierung GmbH, Cologne (*) Chairman of the Supervisory Board

Jens Hasselbächer Member of the Board of Managing Directors R+V Versicherung AG	R+V Direktversicherung AG, Wiesbaden (*) Deputy Chairman of the Supervisory Board R+V Krankenversicherung AG, Wiesbaden (*) Deputy Chairman of the Supervisory Board
Dr. Christoph Lamby Member of the Board of Managing Directors R+V Versicherung AG	Condor Allgemeine Versicherungs-AG, Hamburg (*) Chairman of the Supervisory Board Extremus Versicherungs-AG, Cologne Member of the Supervisory Board KRAVAG-ALLGEMEINE Versicherungs-AG, Hamburg (*) Member of the Supervisory Board KRAVAG-LOGISTIC Versicherungs-AG, Hamburg (*) Member of the Supervisory Board R+V Pensionskasse AG, Wiesbaden (*) Member of the Supervisory Board
Tillmann Lukosch Member of the Board of Managing Directors R+V Versicherung AG	Condor Allgemeine Versicherungs-AG, Hamburg (*) Member of the Supervisory Board KRAVAG-ALLGEMEINE Versicherungs-AG, Hamburg (*) Member of the Supervisory Board KRAVAG-LOGISTIC Versicherungs-AG, Hamburg (*) Member of the Supervisory Board R+V Direktversicherung AG, Wiesbaden (*) Member of the Supervisory Board
Julia Merkel Member of the Board of Managing Directors R+V Versicherung AG	KRAVAG-ALLGEMEINE Versicherungs-AG, Hamburg (*) Member of the Supervisory Board R+V Pensionskasse AG, Wiesbaden (*) Member of the Supervisory Board Südzucker AG, Mannheim Member of the Supervisory Board

Marc René Michallet Member of the Board of Managing Directors R+V Versicherung AG	CHEMIE Pensionsfonds AG, Munich (*) Member of the Supervisory Board Condor Allgemeine Versicherungs-AG, Hamburg (*) Deputy Chairman of the Supervisory Board Condor Lebensversicherungs-AG, Hamburg (*) Deputy Chairman of the Supervisory Board GWG Gesellschaft für Wohnungs- und Gewerbebau Baden-Württemberg AG, Stuttgart (*) Chairman of the Supervisory Board KRAVAG-ALLGEMEINE Versicherungs-AG, Hamburg (*) Member of the Supervisory Board KRAVAG-LOGISTIC Versicherungs-AG, Hamburg (*) Member of the Supervisory Board R+V Pensionsfonds AG, Wiesbaden (*) Member of the Supervisory Board
Christian Polenz Deputy Chief Executive Officer TeamBank AG Nürnberg	SCHUFA Holding AG, Wiesbaden Chairman of the Supervisory Board
Hans Joachim Reinke Chief Executive Officer Union Asset Management Holding AG	Union Investment Institutional GmbH, Frankfurt am Main (*) Deputy Chairman of the Supervisory Board Union Investment Privatfonds GmbH, Frankfurt am Main (*) Chairman of the Supervisory Board Union Investment Real Estate GmbH, Hamburg (*) Deputy Chairman of the Supervisory Board
Sonja Albers Member of the Board of Managing Directors Union Asset Management Holding AG	Union Investment Service Bank AG, Frankfurt am Main (*) Chairwoman of the Supervisory Board

Dr. Frank Engels Member of the Board of Managing Directors Union Asset Management Holding AG	Quoniam Asset Management GmbH, Frankfurt am Main (*) Chairman of the Supervisory Board Union Investment Institutional Property GmbH, Hamburg (*) Deputy Chairman of the Supervisory Board Union Investment Privatfonds GmbH, Frankfurt am Main (*) Deputy Chairman of the Supervisory Board Union Investment Service Bank AG, Frankfurt am Main (*) Deputy Chairman of the Supervisory Board
André Haagmann Member of the Board of Managing Directors Union Asset Management Holding AG	Union Investment Institutional GmbH, Frankfurt am Main (*) Chairman of the Supervisory Board Union Investment Institutional Property GmbH, Hamburg (*) Chairman of the Supervisory Board Union Investment Real Estate GmbH, Hamburg (*) Chairman of the Supervisory Board
Dr. Daniel Günnewig Employee Union Asset Management Holding AG	Union Investment Service Bank AG, Frankfurt am Main (*) Member of the Supervisory Board
Dr. Gunter Haueisen Employee Union Asset Management Holding AG	Quoniam Asset Management GmbH, Frankfurt am Main (*) Member of the Supervisory Board
Harald Rieger Member of the Board of Managing Directors Union Investment Institutional GmbH	Quoniam Asset Management GmbH, Frankfurt am Main (*) Deputy Chairman of the Supervisory Board
Dr. Michael Bütter Chief Executive Officer Union Investment Real Estate GmbH	Union Investment Institutional Property GmbH, Hamburg (*) Member of the Supervisory Board
Jörg Kotzenbauer Chief Executive Officer ZBI GmbH	ZBI Fondsmanagement GmbH, Erlangen (*) Chairman of the Supervisory Board
Marco Knopp Member of the Board of Managing Directors ZBI GmbH	ZBI Fondsmanagement GmbH, Erlangen (*) Deputy Chairman of the Supervisory Board

» 115 List of shareholdings

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000	
Alchemy Parts (Malta) Limited i.L. 3)	Floriana, Malta	-		21	-52	
APZ Beteiligungs GmbH 1)	Darmstadt	88.50	100.00	4,815	-725	*
APZ CarMotion GmbH 1)	Fischamend, Austria	100.00		698	-80	*
APZ GmbH 1)	Darmstadt	100.00		7,021	-	*
APZ Mobility GmbH 1)	Darmstadt	100.00		-	-588	*
APZ Smart Repair GmbH 1)	Munich	100.00		139	-	*
Assimoco S.p.A. 1)	Milan, Italy	69.05		279,535	18,767	*
Assimoco Vita S.p.A. 1)	Milan, Italy	86.67		302,343	17,323	*
Attrax Financial Services S.A. 1)	Senningerberg, Luxembourg	100.00		84,805	22,056	
Aufbau und Handelsgesellschaft mbH 1)	Stuttgart	94.90		525	-	*
AXICA Kongress- und Tagungszentrum Pariser Platz 3 GmbH 4)	Berlin	100.00		26	-	
axytos Finance Holding GmbH 1)	Langen	75.00		3,955	-113	*
axytos GmbH 1)	Langen	100.00		-3,092	-1,981	*
axytos Software GmbH 1)	Langen	100.00		-	-608	*
axytovento GmbH 1)	Langen	100.00		8	-1	*
BankingGuide GmbH	Düsseldorf	60.00		803	-143	*
BAUFINEX GmbH 1)	Schwäbisch Hall	70.00		784	-1,980	
BAUFINEX Service GmbH 1)	Berlin	50.00	75.00	25	-	
Bausparkasse Schwäbisch Hall Aktiengesellschaft - Bausparkasse der Volksbanken und Raiffeisenbanken - 4)	Schwäbisch Hall	97.59		1,812,302	-	
Beteiligungsgesellschaft Westend 1 mbH & Co. KG	Frankfurt am Main	94.90		28,324	10,840	
BWG Baugesellschaft Württembergischer Genossenschaften mbH 1)	Stuttgart	94.78		9,965	-	*
carexpert Kfz-Sachverständigen GmbH 1)	Mainz	60.00		1,835	443	
CHEMIE Pensionsfonds AG 1)	Wiesbaden	100.00		32,818	1,000	
Chiefs Aircraft Holding (Malta) Limited i.L.	Floriana, Malta	-		-	-116	*
CI CONDOR Immobilien GmbH 1)	Hamburg	100.00		20,100	-	
compertis Beratungsgesellschaft für betriebliches Vorsorgemanagement mbH 1)	Wiesbaden	100.00		3,458	1,113	
Condor Allgemeine Versicherungs-Aktiengesellschaft 1) 4)	Hamburg	100.00		41,762	-	
Condor Dienstleistungs GmbH 1)	Hamburg	100.00		619	43	
Condor Lebensversicherungs-Aktiengesellschaft 1)	Hamburg	94.98		51,742	-	
DCII (Malta) Limited i.L. 3)	Floriana, Malta	-		8	-41	
Delfco Leasing (Malta) Limited 3)	Floriana, Malta	-		12	-31	
Deucalion Capital II Limited	George Town, Cayman Islands	-		-609	1,463	**
Deucalion Capital VIII Limited	George Town, Cayman Islands	-		-74	-6,698	**
Deucalion Capital X Ltd.	George Town, Cayman Islands	-		n/a	n/a	
Deucalion Ltd.	George Town, Cayman Islands	-		28,883	1,709	**
DEVIF-Fonds Nr. 150 Deutsche Gesellschaft für Investmentfonds 1)	Frankfurt am Main	-		n/a	n/a	
DEVIF-Fonds Nr. 2 Deutsche Gesellschaft für Investmentfonds 1)	Frankfurt am Main	-		n/a	n/a	
DEVIF-Fonds Nr. 250 Deutsche Gesellschaft für Investmentfonds 1)	Frankfurt am Main	-		n/a	n/a	
DEVIF-Fonds Nr. 500 Deutsche Gesellschaft für Investmentfonds 1)	Frankfurt am Main	-		n/a	n/a	
DEVIF-Fonds Nr. 528 Deutsche Gesellschaft für Investmentfonds 1)	Frankfurt am Main	-		n/a	n/a	
DEVIF-Fonds Nr. 60 Deutsche Gesellschaft für Investmentfonds 1)	Frankfurt am Main	-		n/a	n/a	
Dilax Beteiligungs Verwaltungsgesellschaft mbH 1)	Berlin	100.00		24	-	*
Dilax Beteiligungsgesellschaft mbH & Co. KG 1)	Berlin	92.39		10,322	-177	*
Dilax France SAS 1)	Valence, France	100.00		623	64	*
Dilax Intelcom AG 1)	Ermatingen, Switzerland	100.00		377	70	*
Dilax Intelcom GmbH 1)	Berlin	97.01		1,568	-2,297	*
Dilax Intelcom Iberica S.L.U. 1)	Madrid, Spain	100.00		416	33	*
Dilax Management Investment Reserve GmbH 1)	Berlin	100.00		230	1	*
Dilax Management Investment Verwaltungsgesellschaft mbH 1)	Berlin	100.00		15	-2	*
Dilax Management Investmentgesellschaft mbH & Co. KG 1)	Berlin	99.50		165	-8	*
Dilax Systems Inc. 1)	Saint Lambert, Canada	100.00		1,346	31	*
Dilax Systems UK Ltd. 1)	London, UK	100.00		68	1	*
DILAX Systems US Inc 1)	Wilmington, USA	100.00		39	19	*
DVB Bank America N.V. i.L.	Willemstad, Curaçao	100.00		5,343	1	
DVB Fontainburg Aviation Capital Services Ltd (Cayman Islands)	Grand Cayman, Cayman Islands	-		n/a	n/a	
DVB Transport Finance Limited	London, UK	100.00		32,464	-821	
DVG Deutsche Vermögensverwaltungs-Gesellschaft mit beschränkter Haftung 4)	Frankfurt am Main	100.00		82	-	

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000	
DZ BANK Kunststiftung gGmbH	Frankfurt am Main	100.00		82	69	*
DZ BANK Sao Paulo Representacao Ltda.	São Paulo, Brazil	100.00		2,512	365	*
DZ Beteiligungsgesellschaft mbH Nr. 11 4)	Frankfurt am Main	100.00		4,220	-	
DZ Beteiligungsgesellschaft mbH Nr. 14 4)	Frankfurt am Main	100.00		51	-	
DZ Beteiligungsgesellschaft mbH Nr. 18 4)	Frankfurt am Main	100.00		58,973	-	
DZ Beteiligungsgesellschaft mbH Nr. 21 4)	Frankfurt am Main	100.00		25	-	
DZ Beteiligungsgesellschaft mbH Nr. 22	Frankfurt am Main	100.00		33	-4	
DZ Beteiligungsgesellschaft mbH Nr. 23 4)	Frankfurt am Main	100.00		25	-	
DZ Beteiligungsgesellschaft mbH Nr. 24	Frankfurt am Main	100.00		33	-2	
DZ CompliancePartner GmbH 4)	Neu-Isenburg	100.00		2,086	-	
DZ FINANCIAL MARKETS LLC	New York, USA	100.00		7,844	1,859	*
DZ Gesellschaft für Grundstücke und Beteiligungen mbH 4)	Frankfurt am Main	100.00		5,207	-	
DZ HYP AG 3) 4)	Hamburg/Münster	96.42		1,127,331	-	
DZ PRIVATBANK (Schweiz) AG 1)	Zurich, Switzerland	100.00		202,699	5,969	
DZ PRIVATBANK S.A. 3)	Strassen, Luxembourg	91.83		1,143,663	86,877	
DZ Versicherungsvermittlung Gesellschaft mbH 4)	Frankfurt am Main	100.00		299	-	
easymize GmbH 1)	Wiesbaden	100.00		270	1,707	
Englische Strasse 5 GmbH 1)	Wiesbaden	90.00		15,790	597	
Evo IT Holding GmbH 1)	Vienna, Austria	80.00		12,270	2,750	*
Evol.X Customer Experience GmbH 1)	Vienna, Austria	100.00		n/a	n/a	
Evolit Consulting GmbH 1)	Vienna, Austria	100.00		1,849	1,740	*
Evolit Slovakia s.r.o. 1)	Poprad, Slovakia	75.00		48	-2	*
Fischer Privatkunden Makler GmbH 1)	Nagold	90.00		162	135	*
FKS-NAVIGIUM GmbH 1)	Eschborn	100.00		-4,382	337	
FPAC (Malta) Limited i.L. 3)	Floriana, Malta	100.00		1	-45	
Fundamenta Erteklanc Ingatlanközvetitö es Szolgaltato Kft. 1)	Budapest, Hungary	100.00		-1,271	189	
Fundamenta-Lakáskassza Lakás-takarékpénztár Zrt. 1)	Budapest, Hungary	52.64		190,156	27,055	
Fundamenta-Lakáskassza Pénzügyi Közvetitö Kft. 1)	Budapest, Hungary	100.00		9,952	1,036	
GAF Active Life 1 Renditebeteiligungs-GmbH & Co. KG 1)	Nidderau	96.56		13,594	16,594	*
GAF Active Life 2 Renditebeteiligungs-GmbH & Co. KG 1)	Nidderau	95.03		65,178	16,741	*
GENO Broker GmbH 4)	Frankfurt am Main	100.00		10,000	-	
Genoflex GmbH 1)	Nuremberg	70.00		467	-372	*
GMS Development GmbH 1)	Paderborn	100.00		6,725	1,492	*
GMS Holding GmbH 1)	Paderborn	88.89	75.00	21,958	1,479	*
GMS Management und Service GmbH 1)	Nidderau	100.00		203	101	*
GWG 1. Wohn GmbH & Co. KG 1)	Stuttgart	100.00		2,000	1,127	*
GWG 2. Wohn GmbH & Co. KG 1)	Stuttgart	100.00		3,000	601	*
GWG 3. Wohn GmbH & Co. KG 1)	Stuttgart	100.00		7,000	1,619	*
GWG 4. Wohn GmbH & Co. KG 1)	Stuttgart	100.00		9,000	1,497	*
GWG Beteiligungsgesellschaft mbH 1)	Stuttgart	100.00		30	1	*
GWG Gesellschaft für Wohnungs- und Gewerbebau Baden-Württemberg AG 1)	Stuttgart	91.57		387,324	15,068	*
GWG Hausbau GmbH 1)	Stuttgart	94.48		2,750	-	*
GWG ImmoInvest GmbH 1)	Stuttgart	94.90		12,921	659	*
GWG Wohnpark Sendling GmbH 1)	Stuttgart	94.00		4,028	-	*
HMV GmbH 1)	Erlangen	100.00		55	-	
HumanProtect Consulting GmbH 1)	Cologne	100.00		586	102	*
Ihr Autoputzmeister Service GmbH 1)	Graz, Austria	100.00		620	139	*
Immobilien-Gesellschaft 'DG Bank-Turm, Frankfurt am Main, Westend' mbH & Co. KG des genossenschaftlichen Verbundes 2)	Frankfurt am Main	95.97		83,345	344,494	
Immobilien-Verwaltungsgesellschaft 'DG BANK-Turm, Frankfurt am Main, Westend' mbH	Frankfurt am Main	100.00		48	13	
IMPETUS Bietergesellschaft mbH 4)	Düsseldorf	100.00		37,103	-	
INFINDO Development GmbH 1)	Wiesbaden	100.00		97,417	-	
IPConcept (Luxemburg) S.A. 1)	Strassen, Luxembourg	100.00		21,627	11,547	
IPConcept (Schweiz) AG 1)	Zurich, Switzerland	100.00		7,764	510	
KRAVAG Umweltschutz und Sicherheitstechnik GmbH 1)	Hamburg	100.00		441	11	
KRAVAG-ALLGEMEINE Versicherungs-Aktiengesellschaft 1)	Hamburg	100.00		92,951	18,835	
KRAVAG-LOGISTIC Versicherungs-Aktiengesellschaft 1)	Hamburg	51.00		235,163	-20,317	
Lodestone Parts (Malta) Limited i.L. 3)	Floriana, Malta	-		27	-27	
MD Aviation Capital Pte. Ltd.	Singapore, Singapore	100.00		9,687	12,649	*
MDAC 6 Pte Ltd.	Singapore, Singapore	100.00		1,078	-13	*
MDAC Malta Ltd. i.L.	Floriana, Malta	-		10,599	-25	**
MI-Fonds 384 Metzler Investment GmbH 1)	Frankfurt am Main	-		n/a	n/a	
MI-Fonds 391 Metzler Investment GmbH 1)	Frankfurt am Main	-		n/a	n/a	
MI-Fonds 392 Metzler Investment GmbH 1)	Frankfurt am Main	-		n/a	n/a	
MI-Fonds F 57 Metzler Investment GmbH 1)	Frankfurt am Main	-		n/a	n/a	
MI-Fonds F43 Metzler Investment GmbH 1)	Frankfurt am Main	-		n/a	n/a	
MI-Fonds F44 Metzler Investment GmbH 1)	Frankfurt am Main	-		n/a	n/a	

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000	
MI-Fonds F45 Metzler Investment GmbH 1)	Frankfurt am Main	-		n/a	n/a	
MI-Fonds F47 Metzler Investment GmbH 1)	Frankfurt am Main	-		n/a	n/a	
MI-Fonds J01 Metzler Investment GmbH 1)	Frankfurt am Main	-		n/a	n/a	
MI-Fonds J03 Metzler Investment GmbH 1)	Frankfurt am Main	-		n/a	n/a	
MIRADOR Development GmbH 1)	Wiesbaden	100.00		112,048	-	
MSU Management-, Service- und Unternehmensberatung GmbH 1)	Landau in der Pfalz	60.00		967	102	*
NEF-Conservative 1)	Luxembourg, Luxembourg	-		n/a	n/a	
NewVolit GmbH 1)	Vienna, Austria	100.00		n/a	n/a	
NTK Immobilien GmbH 1)	Hamburg	100.00		44	-	*
NTK Immobilien GmbH & Co. Management KG 1)	Hamburg	100.00		865	-386	*
Pascon GmbH 1)	Wiesbaden	100.00		48	3	
PCAM Issuance II SA Issue RV AVL 001 1)	Luxembourg, Luxembourg	-		n/a	n/a	
PDZ Personaldienste & Zeitarbeit GmbH 4)	Darmstadt	100.00		60	-	
Pension Consult-Beratungsgesellschaft für Altersvorsorge mbH 1)	Wiesbaden	100.00		958	68	
Phoenix Beteiligungsgesellschaft mbH 4)	Düsseldorf	100.00		5,849	-	
PW 4168 Engine Solutions (Ireland) Ltd i.L.	Dublin, Ireland	-		-21	1	**
PW 4168 Solutions (Malta) Limited 3)	Floriana, Malta	-		-90	-9	
Quoniam Asset Management GmbH 1)	Frankfurt am Main	97.60	100.00	22,989	1,928	
Quoniam Funds Selection SICAV - Equities Climate Transformation EUR A dis 1)	Senningerberg, Luxembourg	-		n/a	n/a	
Quoniam Funds Selection SICAV - Equities Climate Transformation EUR I acc 1)	Senningerberg, Luxembourg	-		n/a	n/a	
R+V AIFM S.à.r.l. 1)	Munsbach, Luxembourg	100.00		1,703	699	*
R+V Allgemeine Versicherung Aktiengesellschaft 1) 4)	Wiesbaden	95.00		1,024,175	-	
R+V Deutschland Real (RDR) 1)	Hamburg	-		n/a	n/a	
R+V Dienstleistungs GmbH 1)	Wiesbaden	100.00		781	65	
R+V Direktversicherung AG 1) 4)	Wiesbaden	100.00		13,320	-	
R+V INTERNATIONAL BUSINESS SERVICES Ltd., Dublin 1)	Dublin, Ireland	100.00		n/a	n/a	
R+V KOMPOSIT Holding GmbH 1) 4)	Wiesbaden	100.00		2,080,863	-	
R+V Krankenversicherung AG 1)	Wiesbaden	100.00		177,485	24,000	
R+V Lebensversicherung Aktiengesellschaft 1)	Wiesbaden	100.00		1,206,933	-	
R+V Mannheim P2 GmbH 1)	Wiesbaden	94.00		57,065	1,578	
R+V Pensionsfonds AG 1)	Wiesbaden	100.00		39,803	1,000	
R+V Pensionskasse AG 1)	Wiesbaden	100.00		123,578	-13,900	
R+V Personen Holding GmbH 1)	Wiesbaden	100.00		1,197,855	37,429	
R+V Rechtsschutz-Schadenregulierungs-GmbH 1)	Wiesbaden	100.00		363	86	
R+V Service Center GmbH 1) 4)	Wiesbaden	100.00		2,869	-	
R+V Service Holding GmbH 1) 4)	Wiesbaden	100.00		221,733	-	
R+V Treuhand GmbH 1)	Wiesbaden	100.00		1,650	1,489	
R+V Versicherung AG 4)	Wiesbaden	92.31		2,397,253	-	
RC II S.a.r.l. 1)	Munsbach, Luxembourg	90.00		8,982	124	**
REDOS Einzelhandel Deutschland IV 1)	Hamburg	-		n/a	n/a	
Reisebank AG 4)	Frankfurt am Main	100.00		19,267	-	
RUV Agenturberatungs GmbH 1)	Wiesbaden	100.00		435	174	
RV AIP S.C.S. SICAV-SIF 1)	Luxembourg, Luxembourg	99.00		10	-	*
RV AIP S.C.S. SICAV-SIF - RV TF 2 Infra Debt 1)	Luxembourg, Luxembourg	97.55		571,708	12,950	*
RV AIP S.C.S. SICAV-SIF – RV TF 6 Infra Debt II 1)	Luxembourg, Luxembourg	94.40		257,079	4,902	*
RV AIP S.C.S. SICAV-SIF – RV TF 7 Private Equity 1)	Luxembourg, Luxembourg	99.01		69,513	-1,418	*
RV AIP S.C.S. SICAV-SIF - RV TF Acquisition Financing 1)	Luxembourg, Luxembourg	98.67		267,377	8,019	*
RV AIP S.C.S. SICAV-SIF – TF 3 Primaries 1)	Luxembourg, Luxembourg	99.25		28,139	-2,244	*
RV AIP S.C.S. SICAV-SIF – TF 4 Secondaries 1)	Luxembourg, Luxembourg	99.25		30,292	25	*
RV AIP S.C.S. SICAV-SIF – TF 5 Co-Investments 1)	Luxembourg, Luxembourg	99.25		82,245	-575	*
RV Securitisation I S.à.r.l. 1)	Senningerberg, Luxembourg	100.00		12	-	*
RV Securitisation I S.à.r.l. - Aviation Opportunities I 1)	Senningerberg, Luxembourg	-		12	-	*
RVL Grundstücks GmbH & Co. KG 1)	Wiesbaden	100.00		401,572	8,562	
RVL Grundstücksverwaltung GmbH 1)	Wiesbaden	100.00		24	-	
Schwäbisch Hall Facility Management GmbH - Gebäude und mehr - 1)	Schwäbisch Hall	100.00		3,684	-645	
Schwäbisch Hall Kreditservice GmbH 1) 4)	Schwäbisch Hall	100.00		18,775	-	
Schwäbisch Hall Transformation GmbH 1)	Schwäbisch Hall	100.00		2,423	-764	
Schwäbisch Hall Wohnen GmbH 1)	Schwäbisch Hall	100.00		899	-526	
Sprint Italia S.r.l. 1)	Bolzano, Italy	51.00		-75	-336	*
Sprint Sanierung GmbH 1)	Cologne	100.00		20,588	-6,167	*
STARTRAIFF GmbH 1)	Wiesbaden	100.00		1,643	1,438	
Taiping Fontainburg DVB Aviation Capital L.P. i.L.	Grand Cayman, Cayman Islands	-		117,889	11,540	*
TeamBank AG Nürnberg 2) 4)	Nuremberg	92.62		439,699	-	
UI Infrastruktur Management SARL 1)	Senningerberg, Luxembourg	100.00		45	8	*
UI Management S.à r.l. 1)	Senningerberg, Luxembourg	100.00		16	1	*

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000	
UI Private Debt Management S.à r.l. 1)	Senningerberg, Luxembourg	100.00		12	-	*
UI Vario: 2 issued by Union Investment Luxembourg S.A. 1)	Senningerberg, Luxembourg	-		n/a	n/a	
UII Anzinger Strasse 29 Verwaltung LP GmbH 1)	Hamburg	100.00		41	15	*
UII Issy 3 Moulins SARL 1)	Paris, France	100.00		1	-6	*
UII MS Immobilien GP GmbH 1)	Hamburg	100.00		30	4	*
UII MS Immobilien Verwaltung LP GmbH 1)	Hamburg	100.00		40	13	*
UII PSD KN ImmoInvest GP GmbH 1)	Hamburg	100.00		135	26	*
UII SCE Management GP GmbH 1)	Hamburg	100.00		92	14	*
UII Verwaltungsgesellschaft mbH 1)	Hamburg	100.00		23	2	*
UIN Union Investment Institutional Fonds Nr. 1039 1)	Frankfurt am Main	-		n/a	n/a	
UIN Union Investment Institutional Fonds Nr. 1041 1)	Frankfurt am Main	-		n/a	n/a	
UIN Union Investment Institutional Fonds Nr. 1059 1)	Frankfurt am Main	-		n/a	n/a	
UIN Union Investment Institutional Fonds Nr. 560 1)	Frankfurt am Main	-		n/a	n/a	
UIN Union Investment Institutional Fonds Nr. 578 1)	Frankfurt am Main	-		n/a	n/a	
UIN Union Investment Institutional Fonds Nr. 635 1)	Frankfurt am Main	-		n/a	n/a	
UIN Union Investment Institutional Fonds Nr. 670 1)	Frankfurt am Main	-		n/a	n/a	
UIN Union Investment Institutional Fonds Nr. 715 1)	Frankfurt am Main	-		n/a	n/a	
UIN Union Investment Institutional Fonds Nr. 716 1)	Frankfurt am Main	-		n/a	n/a	
UIN Union Investment Institutional Fonds Nr. 772 1)	Frankfurt am Main	-		n/a	n/a	
UIN Union Investment Institutional Fonds Nr. 817 1)	Frankfurt am Main	-		3,282,176	-2,175	**
UIN Union Investment Institutional Fonds Nr. 825 1)	Frankfurt am Main	-		n/a	n/a	
UIN Union Investment Institutional Fonds Nr. 833 1)	Frankfurt am Main	-		n/a	n/a	
UIN Union Investment Institutional Fonds Nr. 834 1)	Frankfurt am Main	-		n/a	n/a	
UIN Union Investment Institutional Fonds Nr. 839 1)	Frankfurt am Main	-		n/a	n/a	
UIN Union Investment Institutional Fonds Nr. 913 1)	Frankfurt am Main	-		n/a	n/a	
UIN-Fonds Nr. 1086 1)	Frankfurt am Main	-		n/a	n/a	
UIR Verwaltungsgesellschaft mbH 1)	Hamburg	100.00		85	-6	*
UIW Austria Verwaltungs GmbH 1)	Erlangen	100.00		23	-	*
UMB Unternehmens-Managementberatungs GmbH 1)	Wiesbaden	100.00		6,026	2,273	
UniInstitutional Multi Asset Nachhaltig 1)	Senningerberg, Luxembourg	-		n/a	n/a	
UniMultiAsset: Chance IV Nachhaltig 1)	Frankfurt am Main	-		n/a	n/a	
UniNachhaltig Aktien Dividende A 1)	Senningerberg, Luxembourg	-		n/a	n/a	
UniNachhaltig Aktien Dividende -net- 1)	Senningerberg, Luxembourg	-		n/a	n/a	
Union Asset Management Holding AG 2)	Frankfurt am Main	96.59		1,934,633	490,707	
Union Investment Austria GmbH 1)	Vienna, Austria	100.00		18,213	1,223	
Union Investment Institutional GmbH 1)	Frankfurt am Main	100.00		103,970	-	
Union Investment Institutional Property GmbH 1)	Hamburg	90.00		45,451	11,768	
Union Investment Luxembourg S.A. 1)	Senningerberg, Luxembourg	100.00		469,228	124,885	
Union Investment Privatfonds GmbH 1)	Frankfurt am Main	100.00		980,942	-	
Union Investment Real Estate Asia Pacific Pte. Ltd. 1)	Singapore, Singapore	100.00		782	-160	*
Union Investment Real Estate Austria AG 1)	Vienna, Austria	94.50		9,191	2,081	
Union Investment Real Estate Digital GmbH 1) 5)	Hamburg	100.00		10,225	-	
Union Investment Real Estate France SAS 1)	Paris, France	100.00		3,188	1,230	*
Union Investment Real Estate GmbH 2)	Hamburg	94.50		203,974	69,485	
Union Investment Service Bank AG 1)	Frankfurt am Main	100.00		123,115	-	
Union IT-Services GmbH 1) 5)	Frankfurt am Main	100.00		6,019	908	
Union Service-Gesellschaft mbH 1) 5)	Frankfurt am Main	100.00		12,917	1,762	
Unterstützungskasse der Condor Versicherungsgesellschaften GmbH 1)	Hamburg	66.67		26	-	
URA Verwaltung GmbH 1)	Vienna, Austria	100.00		32	-5	*
VisualVest GmbH 1)	Frankfurt am Main	100.00		28,525	-	
VR Consultingpartner GmbH 1)	Frankfurt am Main	100.00		1,078	-	
VR Equity Gesellschaft für regionale Entwicklung in Bayern mbH 1)	Frankfurt am Main	100.00		5,201	19	*
VR Equitypartner Beteiligungskapital GmbH & Co. KG UBG 2)	Frankfurt am Main	100.00		44,501	25,712	
VR Equitypartner GmbH 4)	Frankfurt am Main	100.00		69,070	-	
VR Factoring GmbH 4)	Eschborn	100.00		54,385	-	
VR GbR 2)	Frankfurt am Main	100.00		217,144	72,177	
VR HYP GmbH 1)	Hamburg	100.00		25	-	
VR Kreditservice GmbH 1) 4)	Hamburg	100.00		25	-	
VR Makler GmbH 1)	Hannover	100.00		406	-1,221	*
VR Mittelstandskapital Unternehmensbeteiligungs GmbH 2)	Düsseldorf	100.00		8,012	157	*
VR Payment GmbH	Frankfurt am Main	90.00		61,146	1,400	
VR Real Estate GmbH 1)	Hamburg	100.00		25	-	
VR Smart Finanz AG 4)	Eschborn	100.00		211,070	-	
VR Smart Finanz Bank GmbH 1) 4)	Eschborn	100.00		250,147	-	
VR Smart Finanz Beteiligungs GmbH 1)	Eschborn	100.00		99,925	1,288	
VR Smart Guide GmbH 1)	Eschborn	100.00		1,135	-4,647	*
VR WERT Gesellschaft für Immobilienbewertung mbH 1) 4)	Hamburg	100.00		100	-	

SUBSIDIARIES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000	
WBS Wohnwirtschaftliche Baubetreuungs- und Servicegesellschaft mbH 1)	Stuttgart	94.90		26,308	2,430	*
ZBI Beteiligungs GmbH 1)	Erlangen	100.00		23	-2	*
ZBI Fondsmanagement GmbH 1)	Erlangen	100.00		8,133	-	
ZBI Fondsverwaltungs GmbH 1)	Erlangen	100.00		247	17	*
ZBI GmbH 1)	Erlangen	94.90		4,877	-9,786	
ZBI Immobilienmanagement GmbH 1)	Erlangen	100.00		11,913	-	
ZBI Professional Fondsverwaltungs GmbH 1)	Erlangen	100.00		244	36	*
ZBI Regiofonds Wohnen GF GmbH 1)	Erlangen	100.00		7	-	*
ZBI Regiofonds Wohnen GmbH 1)	Erlangen	100.00		17	1	*
ZBI Vorsorge - Plan Wohnen GF GmbH 1)	Erlangen	100.00		23	1	*
ZBI Vorsorge - Plan Wohnen GmbH 1)	Erlangen	100.00		22	1	*
ZBI Wohnen Plus Verwaltungs GmbH 1)	Erlangen	100.00		21	-	*
ZBI WohnWert Verwaltungs GmbH 1)	Erlangen	100.00		15	-	*
ZBVV - Zentral Boden Vermietung und Verwaltung GmbH 1)	Erlangen	100.00		6,061	-	

JOINT VENTURES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000	
BAU + HAUS Management GmbH 1)	Wiesbaden	50.00		8,575	916	
BEA Union Investment Management Limited 1)	Hong Kong, Hong Kong	49.00		59,282	5,808	*
Deutsche WertpapierService Bank AG	Frankfurt am Main	50.00		335,363	50,476	
DZ BANK Galerie im Städel Kunstverwaltungsgesellschaft mbH	Frankfurt am Main	50.00		16	-3	*
Norafin Verwaltungs GmbH 1)	Mildenau	44.72	46.81	27,736	1,955	*
PolarXpress SCS 1)	Wasserbillig, Luxembourg	58.82		79,349	-5,902	*
Prvá stavebná sporitel'na, a.s. 1)	Bratislava, Slovakia	32.50		311,848	20,798	
R+V Kureck Immobilien GmbH Grundstücksverwaltung Braunschweig i.L. 1)	Wiesbaden	50.00		640	523	
Trustlog GmbH 1)	Hamburg	50.00		7,549	-2,326	*
Versicherungs-Vermittlungsgesellschaft des Sächsischen Landesbauernverbandes mbH 1)	Dresden	50.00		217	4	*
Versicherungs-Vermittlungsgesellschaft mbH des Bauernverbandes Mecklenburg-Vorpommern e.V. (VVB) 1)	Neubrandenburg	50.00		344	64	*
Versicherungs-Vermittlungsgesellschaft mbH des Landesbauernverbandes Brandenburg (VVB) 1)	Teltow	50.00		34	4	*
Versicherungs-Vermittlungsgesellschaft mbH des Landesbauernverbandes Sachsen-Anhalt e.V. (VVB) 1)	Magdeburg	50.00		75	4	*
Zhong De Zuh Fang Chu Xu Yin Hang (Sino-German-Bausparkasse) Ltd. 1)	Tianjin, China	24.90		388,493	10,245	

ASSOCIATES

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000	
adorsys GmbH & Co. KG 1)	Nuremberg	25.89		2,616	1,230	*
adorsys Verwaltungs GmbH 1)	Nuremberg	25.90		31	1	*
aku.beteiligung GmbH 1)	Aalen	46.04		6,758	-953	*
Bankenkonsortium der Zenit GmbH, GbR	Düsseldorf	33.30		153	-	*
bbv-service Versicherungsmakler GmbH 1)	Munich	25.20		2,436	414	*
Berlin-AI Management S.à r.l. 1)	Senningerberg, Luxembourg	20.00		10	3	
Blitz SKB GmbH 1)	Giessen	41.76		36,687	-2,425	*
Bookwire Holding GmbH 1)	Frankfurt am Main	49.00		1,898	-452	*
Cygna Labs Group GmbH 1)	Heilbronn	26.03		11,792	-3,593	*
DeSign Verbund GmbH 1)	Hochstadt am Main	49.80		2,540	1,020	*
DITTRICH + CO Holding GmbH 1)	Frankfurt am Main	49.85		9,932	-17	*
Dr. Förster Holding GmbH i.L. 1)	Neu-Isenburg	20.06		-	-2,604	*
European Convenience Food GmbH 1)	Garrel	41.16	41.52	19,479	1,280	*
GBS Beteiligungsgesellschaft mbH 1)	Bayreuth	42.33		7,812	486	**
GHM MPP Reserve GmbH 1)	Remscheid	50.00		983	620	*
GHM MPP Verwaltungs GmbH 1)	Remscheid	50.00		263	-19	*
Glas Strack Holding GmbH 1)	Bochum	51.06	49.90	9,203	13	*
Goldeck Zetti Beteiligungsgesellschaft mbH 1)	Leipzig	39.23		35,310	1,159	*
Impleco GmbH 1)	Berlin	50.00		4,461	-2,415	
Informatik Consulting Systems Holding GmbH 1)	Stuttgart	49.83	49.43	8,943	288	*
Interni Erwerbsgesellschaft mbH 1)	Düsseldorf	49.90		n/a	n/a	
Kapitalbeteiligungsgesellschaft für die mittelständische Wirtschaft in Nordrhein-Westfalen mbH - KBG -	Neuss	23.60		5,952	286	*
KTP Holding GmbH 1)	Bous	37.36		48,753	3,539	*
Kunststoffpartner Verwaltung GmbH 1)	Villingen-Schwenningen	49.00		-	-	*
paydirekt GmbH	Frankfurt am Main	33.33		25,348	1,274	*
payfree GmbH 1)	Düsseldorf	60.00		5,454	-1,544	*
Pesca Management GmbH 1)	Munich	49.30		13,311	-80	*
Solectrix Holding GmbH 1)	Fürth	49.90		11,949	1,525	*
Treuhand- und Finanzierungsgesellschaft für Wohnungs- und Bauwirtschaft mit beschränkter Haftung. Treufinanz	Düsseldorf	33.14		1,274	-160	*
Votronic Elektronik-Systeme GmbH 1)	Lauterbach	49.80		7,162	2,450	*
VR Unternehmerkapital GmbH 1)	Frankfurt am Main	49.00		n/a	n/a	
Weisshaar Holding GmbH 1)	Deisslingen	84.94	49.92	-	-	**
Zimmer & Hälbig Holding GmbH 1)	Bielefeld	50.29	49.90	19,414	-1,198	*

SHAREHOLDINGS OF 20% OR MORE

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000	
amberra GmbH 2)	Berlin	20.00		15,998	-2	*
Assiconf S.r.l. 1)	Turin, Italy	20.00		88	2	**
Burghofspiele GmbH 1)	Eltville	20.00		-	-21	**
Kreditgarantiegemeinschaft in Baden-Württemberg Verwaltungs-GmbH	Stuttgart	20.00		1,023	-	*
Finatem II GmbH & Co. KG 1)	Frankfurt am Main	20.20		1,299	-347	*
Cheyne Real Estate Credit (CRECH) Fund IV Loans SCS SICAV-SIF 1)	Luxembourg, Luxembourg	20.83		236,025	25,839	*
Cheyne Real Estate Credit Holdings VII 1)	Luxembourg, Luxembourg	21.56		830,757	61,731	*
TF H IV Technologiefonds Hessen GmbH & Co. KG	Wiesbaden	21.74		n/a	n/a	
Bürgschaftsbank Thüringen GmbH	Erfurt	22.13		27,696	172	*
TXS GmbH 1)	Hamburg	24.50		1,236	308	*
VBI Beteiligungs GmbH 1)	Vienna, Austria	24.50		799	-33	*
ICG Infrastructure Equity Fund I SCSp 1)	Senningerberg, Luxembourg	24.54		269,775	32,174	*
TF H III Technologiefonds Hessen Gesellschaft mit beschränkter Haftung	Wiesbaden	25.00		7,124	532	*
VAD Beteiligungen GmbH	Berlin	25.16		29,651	-156	*
Bürgschaftsbank Brandenburg GmbH	Potsdam	25.31		36,769	2,563	*
GENOPACE GmbH 1) 5)	Berlin	27.49		200	-	*
Global Infrastructure Partners III-C2, L.P. 1)	New York, USA	27.97		554,338	72,881	*
GIP CAPS II Feeder Fund AIV 2, L.P. 1)	Wilmington, USA	27.99		n/a	n/a	
Bürgschaftsbank Sachsen-Anhalt GmbH	Magdeburg	29.73		17,216	216	*
Schroder Property Services B.V. S.à.r.l. 1)	Senningerberg, Luxembourg	30.00		282	-28	*
Credit Suisse Global Infrastructure SCA SICAR 1)	Luxembourg, Luxembourg	30.09		8,612	-100	**
Bürgschaftsbank Mecklenburg-Vorpommern GmbH	Schwerin	30.38		17,504	153	*
FREUNDE DER EINTRACHT FRANKFURT Aktiengesellschaft	Frankfurt am Main	32.05	19.84	7,643	-2	*
Swiss Life Health Care III SICAV-FIS 1)	Luxembourg, Luxembourg	33.33		181,325	11,569	*
TF H Technologie-Finanzierungsfonds Hessen Gesellschaft mit beschränkter Haftung (TF H GmbH) i.L.	Wiesbaden	33.33		481	-25	*
Technology DZ Venture Capital Fund I GmbH & Co. KG i.L. 1)	Munich	34.33		8,224	-70	*
MB Asia Real Estate Feeder (Scot.) L.P. 1)	Edinburgh, UK	34.80		746	-138	*
Global Energy & Power Infrastructure Fund III E, SCSp 1)	Luxembourg, Luxembourg	35.34		195,777	3,697	*
Ares Infrastructure Debt Fund IV (EUR), L.P. 1)	Luxembourg, Luxembourg	39.84		456,786	35,469	*
Swiss Life ESG Health Care Germany V S.C.S., SICAV-SIF 1)	Luxembourg, Luxembourg	41.33		518,090	-7,488	*
VR-NetWorld GmbH 2)	Bonn	43.48		7,316	614	*
Swiss Life Health Care IV SICAV-FIS 1)	Luxembourg, Luxembourg	46.51		130,899	9,482	*
CMMT Partners L.P. 1)	Camden, USA	47.07		1,061,553	42,377	*
TRUUCO GmbH 2)	Frankfurt am Main	49.00		5,646	-4	*
Macquarie Asia Infrastructure Fund 2 SCSp 1)	Luxembourg, Luxembourg	50.48		337,453	24,065	*
EIG Global Project Fund V-A, L.P. 1)	Wilmington, USA	51.28		294,079	14,853	*
Tishman Speyer European Real Estate Venture VIII Parallel SCSp 1)	Luxembourg, Luxembourg	55.88		221,813	-4,598	*
DigitalBridge II Foreign Feeder-MV, SCSp 1)	Luxembourg, Luxembourg	68.10		7,359,397	-102,983	*
Ares Infrastructure Debt Fund V (EUR), L.P. 1)	Luxembourg, Luxembourg	68.14		363,769	12,853	*
BREDS IV Aggregator SCSp 1)	Luxembourg, Luxembourg	90.91		156,252	11,764	*
KKR Global Impact Fund II EEA Feeder SCSp 1)	Luxembourg, Luxembourg	95.33		694	-1,542	*
KKR North America Fund XIII EEA Feeder SCSp 1)	Luxembourg, Luxembourg	95.43		45,220	-332	*
Medico 12 GmbH & Co. KG 1)	Frankfurt am Main	99.98		13	-38	*
GTIS Brazil II S-Feeder LP 1)	Edinburgh, UK	100.00		274,692	26,968	*
Macquarie Asia Infrastructure Fund EU Feeder L.P. 1)	London, UK	100.00		72,154	6,147	*
RV-CVIII Holdings, LLC 1)	Camden, USA	100.00		-794	-12,196	*
Tishman Speyer Brazil Feeder (Scots/D), L.P. 1)	Edinburgh, UK	100.00		18,284	-8,620	*

MORE THAN 5% OF VOTING RIGHTS (LARGE CORPORATIONS)

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000	
Raiffeisendruckerei GmbH 1)	Neuwied	7.88		34,773	694	*

SHAREHOLDINGS OF LESS THAN 20%

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000	
Berliner Volksbank eG 1)	Berlin	-	0.10	1,177,230	28,892	*
Immo Feest en Cultuurpaleis Oostende SA 1)	Brussels, Belgium	-		14,977	-552	*
K in Kortrijk S.A. 1)	Brussels, Belgium	-		82,598	-5,668	*
Konsortium der Absatzfinanzierungsinstitute plettac-assco GbR	Wuppertal	-	7.08	n/a	n/a	***
Les Grands Pres S.A. 1)	Brussels-Zaventem, Belgium	-	0.11	52,450	5,737	*
Opción Jamantab S. A. DE C. V. 1)	Mexico City, Mexico	-		13,830	-362	*
UIR Le Président 1 1)	Brussels-Zaventem, Belgium	-	0.06	12,712	-2,228	*
UIR MU III S.A. de C.V. 1)	Mexico City, Mexico	-		10,239	-488	*
Visa Inc.	San Francisco, USA	-		33,321,783	11,380,408	*
VR-Bank Heilbronn Schwäbisch Hall eG 1)	Schwäbisch Hall	-	0.01	278,082	6,820	*
Royale 120 S.A. 1)	Brussels-Zaventem, Belgium	0.01		45,054	226	*
UII Anzinger Strasse 29 GmbH & Co. KG 1)	Hamburg	0.01		n/a	n/a	
GBK Holding GmbH & Co. KG 1)	Kassel	0.02		462,993	13,126	*
Akademie Badischer Volksbanken und Raiffeisenbanken GmbH 1)	Karlsruhe	0.03		9,255	231	*
Société de la Bourse de Luxembourg S.A. 1)	Senningerberg, Luxembourg	0.04		291,817	170,003	*
Munster S.A. 1)	Senningerberg, Luxembourg	0.07		1,673	-191	*
Strategie Invest SICAV 1)	Zurich, Switzerland	0.07		250	-	*
Ufficio Centrale Italiano di Assistenza Assicurativa Automobilisti in Circolazione Internazionale -U.C.I. Societe consortie a R.L. 1)	Milan, Italy	0.09		1,330	16	**
FIDUCIA Mailing Services eG 2)	Karlsruhe	0.13		70	-	*
UIR Belgique 1 S.A. 1)	Brussels, Belgium	0.13		68,705	2,184	*
SGB-Bank Spólka Akcyjna	Poznań, Poland	0.19		206,706	4,937	*
S.W.I.F.T. Society for Worldwide International Financial Telecommunication 2)	La Hulpe, Belgium	0.25		627,234	31,623	*
AKA Ausfuhrkredit-Gesellschaft mit beschränkter Haftung	Frankfurt am Main	0.31		283,796	10,195	*
Atruvia AG 2)	Frankfurt am Main	0.35		448,074	7,592	*
WESTFLEISCH Finanz AG 1)	Münster	0.36		51,360	1,406	*
Assicoop-Assicurazioni Cooperative S.r.l. 1)	Catania, Italy	0.41		n/a	n/a	
Kunststiftung Baden-Württemberg GmbH 1)	Stuttgart	0.50		-	-	**
Anlegerentschädigung von Wertpapierfirmen GmbH 1)	Vienna, Austria	0.57	1.61	70	-	*
North Haven Infrastructure Partners III SCSp 1)	Luxembourg, Luxembourg	0.61		1,058,774	-2,784	*
CLS Group Holdings AG	Lucerne, Switzerland	0.69		370,826	15,141	*
Sana Kliniken AG 1)	Ismaning	0.69		1,017,094	66,685	**
ZBI Vorsorge-Plan Wohnen 1 GmbH & Co. KG 1)	Erlangen	0.75		2,318	112	*
Bank Polskiej Spoldzielczosci Spolka Akcyjna	Warsaw, Poland	0.91		177,826	-8,101	*
Schulze-Delitzsch-Haus, eingetragene Genossenschaft 1)	Bonn	0.97		1,862	174	*
Münchener Hypothekenbank eG 2)	Munich	0.99		1,722,435	68,086	*
ZG Raiffeisen eG	Karlsruhe	1.01	0.02	69,760	4,683	*
Beteiligungs-Aktiengesellschaft der bayerischen Volksbanken 1)	Pöcking	1.14		233,359	8,644	*
DG Nexolution eG 2)	Wiesbaden	1.58		69,477	2,868	*
Blackstone Real Estate Partners Europe III L.P. 1)	New York, USA	1.62		248,091	-23,489	*
DUCAH - Digital Urban Center for Aging and Health eG i.Gr. 1)	Berlin	1.66		n/a	n/a	
Bayerische Raiffeisen-Beteiligungs-Aktiengesellschaft 2)	Beilngries	1.85		866,827	39,199	*
Grand Hotel Heiligendamm GmbH & Co. KG Fundus Fonds Nr. 34 1)	Vettweiss-Disternich	1.90		-	-	*
ABE Clearing S.A.S a Capital Variable	Paris, France	2.08		46,639	3,998	*
Raiffeisen Waren-Zentrale Rhein-Main AG 2)	Cologne	2.23		153,054	24,220	*
Partners Group Global Mezzanine 2007 S.C.A., SICAR 1)	Luxembourg, Luxembourg	2.24		1,558	328	*
heal.capital I GmbH & Co. KG 1)	Berlin	2.33		36,143	-3,691	*
GAD Beteiligungs GmbH & Co. KG 2)	Münster	2.49		119,597	3,023	*
Saarländische Wagnisfinanzierungsgesellschaft mbH	Saarbrücken	2.59		7,602	-1,007	*
WRW Wohnungswirtschaftliche Treuhand Rheinland-Westfalen Gesellschaft mit beschränkter Haftung i.L.	Düsseldorf	2.73		n/a	n/a	
GDV Dienstleistungs-GmbH 1)	Hamburg	2.82		n/a	n/a	
North Haven Infrastructure Partners III Feeder A L.P. 1)	Kitchener, Canada	3.05		893,666	-5,606	*
CASSA CENTRALE BANCA - CREDITO COOPERATIVO ITALIANO S.P.A.	Trento, Italy	3.69		1,168,319	44,660	*
DI Rathaus-Center Pankow Nr.35 KG 1)	Düren	3.86		27,574	2,303	**
GMS Mitarbeiter Beteiligungsgesellschaft UG & Co.KG 1)	Paderborn	4.00		963	-5	*
Cash Logistik Security AG	Düsseldorf	4.10		5,186	2,155	*
Macquarie European Infrastructure Fund 6 SCSp 1)	Luxembourg, Luxembourg	4.15		6,342,628	305,859	*
Technologiezentrum Schwäbisch Hall GmbH 1)	Schwäbisch Hall	4.17	5.56	622	44	*
MED Platform II S.L.P. 1)	Lyon, France	4.32		203,718	-	*
Euro Capital S.A.S. 1)	Metz, France	4.44		31,462	635	*
Süddeutsche Zuckerrübenverwertungs-Genossenschaft eG	Ochsenfurt	4.44	4.55	252,195	23,915	
Die Familiengenossenschaft eG 1)	Mannheim	4.71		20	-8	*
Kreditgarantiegemeinschaft der Freien Berufe Baden-Württemberg Verwaltungs GmbH	Stuttgart	4.76		153	-	*
Bürgschaftsbank Bremen GmbH	Bremen	4.86		8,724	148	*
EXTREMUS Versicherungs-Aktiengesellschaft 1)	Cologne	5.00		61,746	-1,719	*

SHAREHOLDINGS OF LESS THAN 20%

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000	
assistance partner GmbH & Co. KG 1)	Munich	5.01		1,248	248	**
DG IMMOBILIEN MANAGEMENT Gesellschaft mbH	Frankfurt am Main	5.01		20,646	878	*
Protektor Lebensversicherungs-AG 1)	Berlin	5.27		7,856	2	*
Macquarie European Infrastructure Fund 4 L.P. 1)	St. Peter Port, Guernsey	5.70		1,124,376	372,765	*
Copenhagen Infrastructure III K/S 1)	Copenhagen, Denmark	5.94		348,416	34,464	**
IVS Immobilien GmbH 1)	Schiffweiler	6.00		26	-	*
VR-IMMOBILIEN-LEASING GmbH 1)	Eschborn	6.00		10,292	8,398	*
Copenhagen Infrastructure III-A K/S 1)	Copenhagen, Denmark	6.17		669,872	269,439	**
European Property Investors Special Opportunities, L.P. 1)	London, UK	6.35		8,330	-1,070	*
Bürgschaftsbank Hamburg GmbH	Hamburg	6.36		27,424	107	*
Global Renewable Power Infrastructure Fund III (C), SCSp 1)	Luxembourg, Luxembourg	6.40		1,162,802	-24,574	*
EPI Company SE	Brussels, Belgium	6.49		64,094	-15,634	*
Partners Group Direct Equity IV (EUR) S.C.A., SICAV-RAIF 1)	Luxembourg, Luxembourg	6.84		1,959,620	-23,113	*
Interessengemeinschaft Frankfurter Kreditinstitute GmbH	Frankfurt am Main	7.01		23,660	7,978	*
Copenhagen Infrastructure IV K/S 1)	Copenhagen, Denmark	7.15		459,636	70,012	**
Kreditgarantiegemeinschaft für den Handel in Bayern GmbH	Munich	7.19		6,317	-	*
Gründerfonds Ruhr GmbH & Co. KG 1)	Essen	7.25		15,890	-611	*
Crown Secondaries Special Opportunities II S.C.S. 1)	Luxembourg, Luxembourg	7.66		1,279,628	145,976	*
Blackrock Renewable Income Europe Fund 1)	Dublin, Ireland	7.69		674,927	114,807	*
True Sale International GmbH	Frankfurt am Main	7.69		4,672	136	*
Raiffeisen-Kassel A-Beteiligungs GmbH & Co. KG	Kassel	8.22		-	296	*
Raiffeisen-Kassel B-Beteiligungs GmbH & Co. KG	Kassel	8.22		-	296	*
EDEKABANK Aktiengesellschaft	Hamburg	8.35		169,857	7,537	*
PANELLINIA BANK SOCIETE ANONYME (under special liquidation)	Athens, Greece	8.42	5.28	-	-	**
Copenhagen Infrastructure Energy Transition Fund I K/S 1)	Copenhagen, Denmark	8.81		669,872	269,439	**
Mittelständische Beteiligungsgesellschaft Berlin-Brandenburg mbH	Potsdam	8.89		26,407	1,061	*
BLHV Versicherungs-Service GmbH 1)	Freiburg	9.00		338	158	*
Kreditgarantiegemeinschaft des bayerischen Gartenbaues GmbH	Munich	9.07		649	-	*
BayBG Bayerische Beteiligungsgesellschaft mbH	Munich	9.38		264,128	5,263	*
Mittelständische Beteiligungsgesellschaft Sachsen mbH	Dresden	9.38		49,636	189	*
Verimi GmbH	Berlin	9.56	10.17	5,940	-14,213	*
Kreditgarantiegemeinschaft des Hotel- und Gaststättengewerbes in Bayern GmbH	Munich	9.66		649	-	*
Blackstone Real Estate Partners International I.E. L.P. 1)	New York, USA	9.77		-26,468	30,572	**
Crown Secondaries Special Opportunities III Feeder SCSp 1)	Luxembourg, Luxembourg	9.78		n/a	n/a	
MBG Mittelständische Beteiligungsgesellschaft Rheinland-Pfalz mbH	Mainz	9.80	11.11	17,273	571	*
MBG Mittelständische Beteiligungsgesellschaft Baden-Württemberg Gesellschaft mit beschränkter Haftung	Stuttgart	9.94	8.33	99,598	7,387	*
KLV BAKO Vermittlungs-GmbH	Karlsruhe	10.00		268	8	*
MBG Mittelständische Beteiligungsgesellschaft Hamburg mbH	Hamburg	10.00		5,602	306	*
RPD Real Property Development GmbH 1)	Langenwang, Austria	10.00		1,434	221	*
Target Partners Capital GmbH & Co. KG 1)	Munich	10.00	10.01	273	-8	**
Teko - Technisches Kontor für Versicherungen Gesellschaft mit beschränkter Haftung 1)	Düsseldorf	10.00		144	34	*
VNT Automotive GmbH 1)	Langenwang, Austria	10.00		10,285	575	*
Kreditgarantiegemeinschaft des Handels Baden-Württemberg Verwaltungs-GmbH	Stuttgart	10.05		1,022	-	*
Kreditgarantiegemeinschaft des Handwerks Baden-Württemberg Verwaltungs-GmbH	Stuttgart	10.05		1,001	-	*
HANDWERKSBAU NIEDERRHEIN AKTIENGESELLSCHAFT	Düsseldorf	10.15		30,718	1,747	*
Mittelständische Beteiligungsgesellschaft Thüringen mbH	Erfurt	10.28		29,137	529	*
Architrave GmbH 1)	Berlin	10.42		3,401	-2,019	**
Curzon Capital Partners IV LP 1)	London, UK	10.73		140,553	15,155	*
GMB Systems GmbH & Co. KG 1)	Hamburg	10.75		n/a	n/a	
GIP Capital Solutions Feeder Fund II (EEA) 1)	Luxembourg, Luxembourg	10.97		171,078	15,973	*
Splash Investment GmbH 1)	Kerpen	10.98		133,559	-80,353	*
GIP CAPS II Finco, L.P. 1)	Wilmington, USA	11.36		n/a	n/a	
Bürgschaftsbank Schleswig-Holstein Gesellschaft mit beschränkter Haftung	Kiel	11.79		42,278	-	*
Curzon Capital Partners III LP 1)	London, UK	11.99		43,320	-12,772	*
Kredit-Garantiegemeinschaft des bayerischen Handwerks Gesellschaft mit beschränkter Haftung	Munich	12.00		4,846	-	*
Kreditgarantiegemeinschaft des Gartenbaues Baden-Württemberg Verwaltungs-GmbH	Stuttgart	12.00		138	-	*
Banco Cooperativo Español S.A.	Madrid, Spain	12.03		665,013	43,998	*
BGG Bayerische Garantiegesellschaft mit beschränkter Haftung für mittelständische Beteiligungen	Munich	13.15		62,542	883	*
Copenhagen Infrastructure III US AIV Non-QFPF Blocker K/S 1)	Copenhagen, Denmark	13.20		n/a	n/a	

SHAREHOLDINGS OF LESS THAN 20%

Name	Location	Shareholding	Voting rights, if different	Equity in € '000	Profit/loss in € '000	
ARDIAN Infrastructure Fund V B S.C.S., SICAV-RAIF 1)	Luxembourg, Luxembourg	13.58		1,162,157	147,243	*
GI Data Infrastructure Fund-A LP 1)	Wilmington, USA	13.60		1,108,876	-27,370	*
Hines European Value Fund SCSp 1)	Luxembourg, Luxembourg	13.87		639,315	25,391	*
EIG Energy Fund XVI (Scotland) L.P. 1)	Edinburgh, UK	14.02		394,807	22,820	*
Domus Beteiligungsgesellschaft der Privaten Bausparkassen mbH Berlin 1)	Berlin	14.13		26	-2	*
Bürgschaftsbank Rheinland-Pfalz GmbH	Mainz	14.31		17,626	270	*
MBG Mittelständische Beteiligungsgesellschaft Schleswig-Holstein mbH	Kiel	14.59	15.22	49,299	2,205	*
Bürgschaftsbank Sachsen GmbH	Dresden	14.66	16.59	44,936	500	*
AgroRisk Polska Spólka z ograniczona odpowiedzialnoscia 1)	Poznań, Poland	15.00		30	-75	*
GIP CAPS II Feeder Fund AIV 1, L.P. 1)	Wilmington, USA	15.00		n/a	n/a	
KLAAS MESSTECHNIK GmbH 1)	Seelze-Harenberg	15.00		61	20	**
CI IV US AIV Non-QFPF K/S 1)	Copenhagen, Denmark	15.24		115,022	-15,628	**
Kreditgarantiegemeinschaft der Industrie, des Verkehrsgewerbes und des Gastgewerbes Baden-Württemberg Verwaltungs-GmbH	Stuttgart	15.28		1,300	-	*
EIG Energy Fund XVII (Scotland) L.P. 1)	Edinburgh, UK	15.61		600	137	*
Prosa Beteiligungs GmbH & Co. KG 1)	Frankfurt am Main	15.63		28	-23	*
Bürgschaftsbank Nordrhein-Westfalen GmbH Kreditgarantiegemeinschaft	Neuss	15.75		41,490	1,205	*
Partners Group Direct Infrastructure III (EUR), L.P. S.C.Sp., SICAV-RAIF 1)	Luxembourg, Luxembourg	15.80		523,183	54,890	*
Bürgschaftsbank Hessen GmbH	Wiesbaden	15.87		24,716	967	*
Mittelständische Beteiligungsgesellschaft Mecklenburg-Vorpommern mbH	Schwerin	16.00		19,614	273	*
Deutsche Börse Commodities GmbH	Frankfurt am Main	16.20	14.48	11,276	7,797	*
Deutsche Bauernsiedlung - Deutsche Gesellschaft für Landentwicklung (DGL) mbH 1)	Frankfurt am Main	16.26		5,642	-222	*
MBG H Mittelständische Beteiligungsgesellschaft Hessen GmbH	Wiesbaden	16.26		11,649	12	*
AERS Consortio AG 1)	Stuttgart	16.50		114	-18	**
Copenhagen Infrastructure Energy Transition Fund I DK B K/S 1)	Copenhagen, Denmark	16.71		669,872	269,439	**
Copenhagen Infrastructure Energy Transition Fund I US Non-QFPF K/S 1)	Copenhagen, Denmark	17.09		n/a	n/a	
Global Infrastructure Partners IV-C2, L.P. 1)	Luxembourg, Luxembourg	17.17		2,303,373	148,270	*
GLADBACHER BANK Aktiengesellschaft von 1922	Mönchengladbach	17.53		39,879	1,498	*
Niedersächsische Bürgschaftsbank (NBB) Gesellschaft mit beschränkter Haftung	Hannover	17.68		35,022	2,328	*
RREEF Pan-European Infrastructure Feeder GmbH & Co. KG 1)	Eschborn	17.70		348,880	-116	**
EURO Kartensysteme GmbH	Frankfurt am Main	19.60		12,641	199	*
Mittelständische Beteiligungsgesellschaft Sachsen-Anhalt (MBG) mbH	Magdeburg	19.84		25,378	704	*
Mittelständische Beteiligungsgesellschaft Niedersachsen (MBG) mit beschränkter Haftung	Hannover	19.92		16,815	388	*
SCHUFA Holding AG 2)	Wiesbaden	19.93		157,165	50,866	*

1) Held indirectly.
2) Including shares held indirectly.
3) A letter of comfort exists.
4) Profit-and-loss transfer agreement with DZ BANK (direct or indirect).
5) Section 264 (3) HGB and section 264b HGB have been applied.
n/a = no figures available.
* Prior-year figures.
** Latest available financial statements before 2022
*** The company does not prepare financial statements / exemption

Responsibility statement

To the best of our knowledge, and in accordance with the applicable reporting principles, the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and profit or loss of the group in accordance with German principles of proper accounting, and the group management report includes a fair review of the development and performance of the business and the position of the group, together with a description of the material opportunities and risks associated with the expected development of the group.

Frankfurt am Main, February 27, 2024

DZ BANK AG
Deutsche Zentral-Genossenschaftsbank

The Board of Managing Directors

Fröhlich	Dr. Riese		
Benkredda	Berghaus	Dr. Brauckmann	Brouzi
Koch	Speth	Ullrich	

Independent auditor’s report[1]

To DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main

Report on the audit of the consolidated financial statements and of the group management report

Audit Opinions

We have audited the consolidated financial statements of DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main, and its subsidiaries (the Group), which comprise the consolidated statement of financial position as at 31 December 2023, and the consolidated statement of comprehensive income, consolidated statement of profit or loss, consolidated statement of changes in equity and consolidated statement of cash flows for the financial year from 1 January to 31 December 2023, and notes to the consolidated financial statements, including material accounting policy information. In addition, we have audited the group management report of DZ BANK AG Deutsche Zentral-Genossenschaftsbank for the financial year from 1 January to 31 December 2023.

In our opinion, on the basis of the knowledge obtained in the audit,

– the accompanying consolidated financial statements comply, in all material respects, with the IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to § [Article] 315e Abs. [paragraph] 1 HGB [Handelsgesetzbuch: German Commercial Code] and, in compliance with these requirements, give a true and fair view of the assets, liabilities, and financial position of the Group as at 31 December 2023, and of its financial performance for the financial year from 1 January to 31 December 2023, and
– the accompanying group management report as a whole provides an appropriate view of the Group’s position. In all material respects, this group management report is consistent with the consolidated financial statements, complies with German legal requirements and appropriately presents the opportunities and risks of future development.

Pursuant to § 322 Abs. 3 Satz [sentence] 1 HGB, we declare that our audit has not led to any reservations relating to the legal compliance of the consolidated financial statements and of the group management report.

Basis for the Audit Opinions

We conducted our audit of the consolidated financial statements and of the group management report in accordance with § 317 HGB and the EU Audit Regulation (No. 537/2014, referred to subsequently as “EU Audit Regulation”) in compliance with German Generally Accepted Standards for Financial Statement

[1] Translation of the auditor's report issued in German language on the consolidated financial statements prepared in German language by the management of DZ BANK AG Deutsche Zentral-Genossenschaftsbank. The German auditor’s report is authoritative.

Audits promulgated by the Institut der Wirtschaftsprüfer [Institute of Public Auditors in Germany] (IDW). Our responsibilities under those requirements and principles are further described in the "Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Group Management Report" section of our auditor's report. We are independent of the group entities in accordance with the requirements of European law and German commercial and professional law, and we have fulfilled our other German professional responsibilities in accordance with these requirements. In addition, in accordance with Article 10 (2) point (f) of the EU Audit Regulation, we declare that we have not provided non-audit services prohibited under Article 5 (1) of the EU Audit Regulation. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions on the consolidated financial statements and on the group management report.

Key Audit Matters in the Audit of the Consolidated Financial Statements

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements for the financial year from 1 January to 31 December 2023. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our audit opinion thereon; we do not provide a separate audit opinion on these matters.

In our view, the matters of most significance in our audit were as follows:

❶ **Risk provisions for loans and advances to customers measured at amortised cost**

❷ **Measurement of assets recognised at fair value, for which the fair value is determined using valuation techniques that incorporate at least one significant unobservable market parameter**

❸ **Measurement of Bauspar-technical provisions (provisions relating to building society operations)**

❹ **Measurement of certain underwriting liabilities**

Our presentation of these key audit matters has been structured in each case as follows:

① Matter and issue

② Audit approach and findings

③ Reference to further information

Hereinafter we present the key audit matters:

❶ **Risk provisions for loans and advances to customers measured at amortised cost**

① In the consolidated financial statements, loans and advances to customers measured at amortised cost amounting to € 199,175 million (30.9 % of total assets) are reported under the balance sheet item „Loans and advances to customers". As of 31 December 2023, there is an allowance for credit losses for the loan portfolio consisting of specific and general loan loss provisions of € 2,196 million in total. The measurement of risk provisioning in customer credit business is determined in particular by the structure and quality of the loan portfolio, macroeconomic factors and the estimates of the executive directors with regard to future loan defaults, among other things, also considering the further development of macroeconomic factors on the customer lending business. The amount of specific loan loss provisions corresponds to the difference between the outstanding loan amount and the present value of the cash flows still expected from the loan. Existing collateral are taken into account. Portfolio loan loss provisions are created for foreseeable counterparty risks in the lending business that have not yet been specified for individual borrowers. For this purpose, general loan loss provisions are recognized for loans not individually impaired in the amount of the expected loss for an observation period of twelve months, unless the credit default risk increased significantly since initial recognition. In the event of a significant increase in credit risk, a general loan loss provision is recognized for the expected losses over the remaining term of the loan in issue. To take into account current economic developments due to macroeconomic conditions, the Group updated the macroeconomic forecasts and made expert-based adjustments to the model-based probability of default profiles (shift factors) and classified the credit risk of not individually impaired loans as a whole as significantly increased for particularly affected portfolios. In calculating risk provisions, the Group also incorporated so-called post-model adjustments for the retail installment loan business.

These post-model adjustments take into account the expectations of the executive directors with regard to existing uncertainties in customer behaviour due to new legal frameworks and some other risk drivers that have not yet been considered in the models, including the shift factors.

The value adjustments in the customer credit business are highly significant for the assets, liabilities and financial performance of the Group and also involve considerable scope for judgment of the executive directors with regard to macroeconomic forecasts and the shift factors used, the overall rating of the credit risk of portfolios, the post-model adjustments as well as the cash flows still expected from an individually impaired loan exposure. In addition, the valuation parameters applied, which are also subject to significant uncertainties due to the impact of macroeconomic factors, have a significant influence on the recognition and amount of any necessary value adjustments.sAgainst this background, this matter was of particular significance in the context of our audit.

② As part of our audit, we first assessed the adequacy of the IT system for determining the risk provisioning in the customer credit business and the design of the controls in the Group's relevant internal control system and tested the functionality of the controls, in particular with regard to the collection of business data, the risk classification of borrowers, the determination of the risk provisioning, and the validation of the valuation models. In addition, we assessed the valuation of loan receivables, including the appropriate application of valuation methods and adequacy of estimated values, on the basis of risk-based samples of loan exposures. In doing so, we evaluated, among other things, the available documentation of the Group with regard to the economic situation and the recoverability of the corresponding collateral. We also analysed and assessed the executive directors' assessment with regards to the effects of the macroeconomic factors and their consideration in the valuation of the loan receivables. In terms of the valuation of real estate, ship and wind power financings, we verified the application of the valuation models and assessed the appropriateness of the input factors and forward-looking assumptions with the involvement of our specialists for the valuation of real estate, ships and for renewable energies.

Furthermore, in order to assess the value adjustments made, we traced and assessed the valuation methods applied by the Group, the underlying input data, macroeconomic assumptions and parameters as well as the results of the validation procedures. In particular, we assessed the expert-based adjustments of the statistically determined shift factors with the involvement of our internal specialists from the area of financial mathematics. Moreover, we have evaluated the reasons for the overall classification of credit default risk of individual portfolios as significantly increased. We also questioned the necessity of post-model adjustments and assessed the calculation of the amounts. On the basis of our audit procedures we performed, we were able to assure the overall reasonableness of the assumptions made by the executive directors in assessing the recoverability of the loan portfolio as well as the appropriateness and effectiveness of the controls implemented by the Group.

③ The Group's disclosures on risk provisions for loans and advances to customers measured at amortised cost are included in the notes to the consolidated financial statements in sections 05 „Financial instruments“, 22 „Loss allowances“, 43 „Loss allowances“, 59 „Loss allowances“ and 86 „Nature and extent of risks arising from financial instruments“.

❷ Measurement of assets recognised at fair value, for which the fair value is determined using valuation techniques that incorporate at least one significant unobservable market parameter

① In the consolidated financial statements assets amounting to € 33,518 million (5.2 % of total assets) are reported under the balance sheet items „Loans and advances to customers“, „Hedging instruments (positive fair values)“, „Financial assets held for trading“, „Investments“ and „Investments held by insurance companies“ for which the fair value is determined using valuation techniques that incldude at least one significant valuation parameter that is not observable on the market (so-called Level 3 assets).

In the valuation of Level 3 assets, there is an increased valuation risk due to the necessity of using model-based calculations and significant valuation parameters that are not observable on the market. The executive directors must make judgments, estimates and assumptions in this context, including with respect to the development of interest rates and other macroeconomic conditions (including credit rating and liquidity spreads, recovery rate). Minor changes to those assumptions or to the methods used may have a material impact on the valuation of these assets. Due to the material significance of Level 3 assets to the Group's assets, liabilities and financial performance, as well as the scope for judgments on the part of the executive directors and the associated estimation uncertainties, the valuation of the Level 3 assets was of particular significance in the context of our audit.

② As part of our audit, we assessed the models used by the Group for the valuation of Level 3 assets and the assumptions made by the executive directors. In doing so, we used, among other things, our valuation expertise for financial instruments, our industry knowledge and our industry experience. We also assessed the design and effectiveness of the Group's controls over the valuation of Level 3 assets and their recognition in the statement of comprehensive income. Based on this, we performed tests of detail in relation to the valuation of these assets. Our tests of detail included assessing the selected methods, assessing the assumptions made and the mathematical correctness of the procedures applied. In addition, we tested the completeness and accuracy of the underlying portfolio data and the resulting carrying amounts for impairment in a risk-based sample. Based on our audit procedures, we were able to assure that the estimates and assumptions made by the executive directors for the purpose of measuring the Level 3 assets are substantiated and sufficiently documented.

③ With regard to the valuation principles applied, we refer to the Group's disclosures in the notes to the consolidated financial statements in section 75 „Assets and liabilities measured at fair value on the balance sheet“.

❸ Measurement of Bauspar-technical provisions (provisions relating to building society operations)

① In the Group’s consolidated financial statements Bauspar-specific provisions (provisions relating to building society operations) amounting to € 913 million are reported under the „Provisions“ balance sheet item. These include Bauspar-technical provisions that relate to the Group’s obligations from interest bonuses (particularly loyalty bonuses) on Bauspar deposits. According to the tariff terms and conditions of the Bausparkasse, interest bonuses are granted to Bauspar customers subject to the occurrence of various conditions, such as the Bauspar customer's choice to exercise their option to receive the interest bonus, compliance with a waiting period, which, if the option is exercised, begins on the valuation date on which the target valuation figure and a certain minimum Bauspar deposit are reached, the attainment of a minimum term of the Bauspar contract, and the waiver of the right to draw down the allocated Bauspar loan. The interest bonuses represent obligations that are uncertain in terms of their amount and maturity. They are measured at the amount that is the best estimate of the expenses required to settle the present obligation at the reporting date. The estimate is based on the planning method, which is based on a forecast of the loyalty bonus payout and the credited interest on credit balances from the basic scenario of the Bauspar-technical simulation calculation (collective simulation). In the course of selecting the parameters for these simulation calculation, the executive directors make assumptions regarding the future behaviour of Bauspar customers on the basis of historical data and the forecast capital market rate of interest, and the forecast period. Using a bandwidth method, the amount of the provision derived from the planning method is checked for plausibility based on the bonus potential accrued as at the valuation date and the disposals determined in the simulation calculation (e.g. due to cancellations) and the amount of the provision is adjusted if certain thresholds are exceeded. The forecast quality of the model for the Bauspar-technical simulation calculation on which the planning procedure is based is validated on an annual basis.. If the future behaviour of Bauspar customers is influenced by factors that are not adequately taken into account either in the planning procedure or in the plausibility check procedure, adjustments are made by the executive directors when adjusting the amount of the provision. The calculation of the Bauspar-technical provisions required the use of judgments and assumptions by the executive directors. Minor changes in these assumptions in the model used for the Bauspar-technical simulation calculation and in the calculation of the adjustment amount can have a significant impact on the measurement of the Bauspar-technical provisions for interest bonuses.

Due to the material significance of these provisions for the assets, liabilities and financial performance of the Group as well as the associated estimation uncertainties and the considerable scope for judgment on the part of the executive directors in measuring the provisions, the measurement of the Bauspar-technical provisions was of particular significance in the context of our audit.

② Given the significance of Bauspar-technical provisions for the Group's overall business, we assessed as part of our audit we assessed, together with our internal specialists for Bauspar-specific mathematics the methodology used for the Bauspar-technical simulation calculation, the planning and plausibility procedure as well as the estimates and assumptions made by the executive directors. Among other things, we used our industry knowledge and our industry experience as a basis. We also assessed the process for determining and recognizing Bauspar-technical provisions. Furthermore, we assessed the forecasting quality of the model used on the basis of past forecasting accuracy. Therewith, we assessed the calculated result for the amount of the provisions and verified the consistent application of the underlying model.

Based on our audit procedures, we were able to assure that the estimates and the assumptions made by the executive directors for the purpose of measuring the Bauspar-technical provisions are substantiated and sufficiently documented.

③ The Group’s disclosures relating to Bauspar-technical provisions are contained in sections 26 „Provisions“ and 67 „Provisions“ of the notes to the consolidated financial statements.

❹ Measurement of certain underwriting liabilities

① In the consolidated financial statements, liabilities of € 105,151 million (16.3 % of total assets) are reported under the "Liabilities arising from insurance contracts" balance sheet item, which have been accounted for in accordance with IFRS 17 for the first time since January 1, 2023. Of the liabilities arising from insurance contracts, € 12,117 million is attributable to the "provision for outstanding claims" and € 93,033 million to the " benefit reserve".

The provision for outstanding claims represents the Group's expectation of future payments for known and unknown claims and benefits as well as the associated expenses. Different methods are used by the Group to estimate this obligation. In addition, the measurement of this provision requires a high degree of judgement by the executive directors of the Group with regard to assumptions to be made, such as the effects of changing inflation rates, settlement patterns and regulatory changes. The executive directors also have significant discretionary scope when determining the discount rate for calculating the provision. In particular, product lines with a low claims frequency, high individual claims or long claims settlement periods are usually subject to increased estimation uncertainties.

The benefit reserve represents the present value of the future cash flows estimated by the Group. The valuation is carried out using complex actuarial methods on the basis of comprehensive processes to determine assumptions about future developments in the insurance portfolios to be valued. When measuring liabilities, the present values of the estimated future cash flows in particular are affected by possible material uncertainties. This uncertainty stems from the risk of chance, change and error associated with the estimation of the present value of the cash flows and the methods and financial and non-financial assumptions used for this purpose. In particular, assumptions in connection with the development of life expectancy or the state of health of the insured persons, existing options and rights on the part of the policyholder or the insurance company to adjust the duration or amount of the insurance cover, the expected future administrative expenses incurred in connection with the fulfilment of the insurance benefit and expectations regarding the development of interest rates and financial indices have a significant impact on the valuation.

The general measurement model (GMM), the variable fee approach (VFA) and the premium allocation approach (PAA) are used to measure certain underwriting liabilities.

Against this background and the complex determination of the underlying assumptions and estimates made by the executive directors, the measurement of these certain underwriting liabilities was of particular significance in the context of our audit.

② As part of our audit, we assessed the appropriateness of selected controls of the Group for selecting the valuation methods applied and for determining assumptions and making estimates for the valuation of certain technical liabilities. With the involvement of our internal valuation specialists, we compared the valuation methods and significant assumptions used in each case with generally accepted valuation methods and industry standards and examined the extent to which these are suitable for the valuation of the technical liabilities. Our audit also included an assessment of the appropriateness and integrity of the data and assumptions used in the valuation, including the executive directors' assessment of the impacts of changing inflation rates, as well as an examination of the claims settlement process. In addition, we recalculated the amount of the provisions for selected product lines, in particular product lines with large provision amounts in terms of volume or with increased estimation uncertainties. For these product lines, we compared the amounts calculated by us with the values determined by the Group for the provisions and assessed any differences. We also examined whether any adjustments to estimates in the loss reserves were appropriately documented and justified. We also focused on assessing the mapping of the cash flows used by the IT systems employed and the appropriate derivation and use of assumptions for the measurement of certain underwriting liabilities.

On the basis of the audit procedures we performed, we were able to assure that the methods, estimates and assumptions used by the executive directors to measure certain underwriting liabilities are appropriate overall.

③ The Group's disclosures on the measurement of certain liabilities arising from insurance contracts are contained in sections 11 "Insurance business", 68 "Liabilities arising from insurance contracts" and section 91 "Changes in the carrying amounts of liabilities arising from insurance contracts" in the notes to the consolidated financial statements.

Other Information

The executive directors are responsible for the other information.

The other information comprises

- the separate non-financial report to comply with §§ 289b to 289e HGB and with §§ 315b to 315c HGB
- the annual report – excluding cross-references to external information – with the exception of the audited consolidated financial statements, the audited group management report and our auditor's report

Our audit opinions on the consolidated financial statements and on the group management report do not cover the other information, and consequently we do not express an audit opinion or any other form of assurance conclusion thereon.

In connection with our audit, our responsibility is to read the other information mentioned above and, in so doing, to consider whether the other information

- is materially inconsistent with the consolidated financial statements, with the group management report disclosures audited in terms of content or with our knowledge obtained in the audit, or
- otherwise appears to be materially misstated.

Responsibilities of the Executive Directors and the Supervisory Board for the Consolidated Financial Statements and the Group Management Report

The executive directors are responsible for the preparation of the consolidated financial statements that comply, in all material respects, with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to § 315e Abs. 1 HGB and that the consolidated financial statements, in compliance with these requirements, give a true and fair view of the assets, liabilities, financial position, and financial performance of the Group. In addition, the executive directors are responsible for such internal control as they have determined necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud (i.e., fraudulent financial reporting and misappropriation of assets) or error.

In preparing the consolidated financial statements, the executive directors are responsible for assessing the Group's ability to continue as a going concern. They also have the responsibility for disclosing, as applicable, matters related to going concern. In addition, they are responsible for financial reporting based on the going concern basis of accounting unless there is an intention to liquidate the Group or to cease operations, or there is no realistic alternative but to do so.

Furthermore, the executive directors are responsible for the preparation of the group management report that, as a whole, provides an appropriate view of the Group's position and is, in all material respects, consistent with the consolidated financial statements, complies with German legal requirements, and appropriately presents the opportunities and risks of future development. In addition, the executive directors are responsible for such arrangements and measures (systems) as they have considered necessary to enable the preparation of a group management report that is in accordance with the applicable German legal requirements, and to be able to provide sufficient appropriate evidence for the assertions in the group management report.

The supervisory board is responsible for overseeing the Group's financial reporting process for the preparation of the consolidated financial statements and of the group management report.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Group Management Report

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and whether the group management report as a whole provides an appropriate view of the Group's position and, in all material respects, is consistent with the consolidated financial statements and the knowledge obtained in the audit, complies with the German legal requirements and appropriately presents the opportunities and risks of future development, as well as to issue an auditor's report that includes our audit opinions on the consolidated financial statements and on the group management report.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with § 317 HGB and the EU Audit Regulation and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (IDW) will always detect a material misstatement. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements and this group management report.

We exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements and of the group management report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our audit opinions. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal controls.
- Obtain an understanding of internal control relevant to the audit of the consolidated financial statements and of arrangements and measures (systems) relevant to the audit of the group management report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an audit opinion on the effectiveness of these systems.
- Evaluate the appropriateness of accounting policies used by the executive directors and the reasonableness of estimates made by the executive directors and related disclosures.
- Conclude on the appropriateness of the executive directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in the auditor's report to the related disclosures in the consolidated financial statements and in the group management report or, if such disclosures are inadequate, to modify our respective audit opinions. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to be able to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements present the underlying transactions and events in a manner that the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and financial performance of the Group in compliance with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to § 315e Abs. 1 HGB.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express audit opinions on the consolidated financial statements and on the group management report. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinions.
- Evaluate the consistency of the group management report with the consolidated financial statements, its conformity with German law, and the view of the Group's position it provides.

– Perform audit procedures on the prospective information presented by the executive directors in the group management report. On the basis of sufficient appropriate audit evidence we evaluate, in particular, the significant assumptions used by the executive directors as a basis for the prospective information, and evaluate the proper derivation of the prospective information from these assumptions. We do not express a separate audit opinion on the prospective information and on the assumptions used as a basis. There is a substantial unavoidable risk that future events will differ materially from the prospective information.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with the relevant independence requirements, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, actions taken to eliminate threats or safeguards applied.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor’s report unless law or regulation precludes public disclosure about the matter.

Other legal and regulatory requirements

Report on the Assurance on the Electronic Rendering of the Consolidated Financial Statements and the Group Management Report Prepared for Publication Purposes in Accordance with § 317 Abs. 3a HGB

Assurance Opinion

We have performed assurance work in accordance with § 317 Abs. 3a HGB to obtain reasonable assurance as to whether the rendering of the consolidated financial statements and the group management report (hereinafter the “ESEF documents”) contained in the electronic file dzbankkonzern-2023-12-31.zip and prepared for publication purposes complies in all material respects with the requirements of § 328 Abs. 1 HGB for the electronic reporting format (“ESEF format”). In accordance with German legal requirements, this assurance work extends only to the conversion of the information contained in the consolidated financial statements and the group management report into the ESEF format and therefore relates neither to the information contained within these renderings nor to any other information contained in the electronic file identified above.

In our opinion, the rendering of the consolidated financial statements and the group management report contained in the electronic file identified above and prepared for publication purposes complies in all material respects with the requirements of § 328 Abs. 1 HGB for the electronic reporting format. Beyond this assurance opinion and our audit opinion on the accompanying consolidated financial statements and the accompanying group management report for the financial year from 1 January to 31 December 2023 contained in the "Report on the Audit of the Consolidated Financial Statements and on the Group Management Report" above, we do not express any assurance opinion on the information contained within these renderings or on the other information contained in the electronic file identified above.

Basis for the Assurance Opinion

We conducted our assurance work on the rendering of the consolidated financial statements and the group management report contained in the electronic file identified above in accordance with § 317 Abs. 3a HGB and the IDW Assurance Standard: Assurance Work on the Electronic Rendering of Financial Statements and Management Reports, Prepared for Publication Purposes in Accordance with § 317 Abs. 3a HGB (IDW AsS 410 (06.2022)) and the International Standard on Assurance Engagements 3000 (Revised). Our responsibility in accordance therewith is further described in the "Group Auditor's Responsibilities for the Assurance Work on the ESEF Documents" section. Our audit firm applies the IDW Standard on Quality Management: Requirements for Quality Management in the Audit Firm (IDW QMS 1 (09.2022)).

Responsibilities of the Executive Directors and the Supervisory Board for the ESEF Documents

The executive directors of the Company are responsible for the preparation of the ESEF documents including the electronic rendering of the consolidated financial statements and the group management report in accordance with § 328 Abs. 1 Satz 4 Nr. [number] 1 HGB and for the tagging of the consolidated financial statements in accordance with § 328 Abs. 1 Satz 4 Nr. 2 HGB.

In addition, the executive directors of the Company are responsible for such internal control as they have considered necessary to enable the preparation of ESEF documents that are free from material non-compliance with the requirements of § 328 Abs. 1 HGB for the electronic reporting format, whether due to fraud or error.

The supervisory board is responsible for overseeing the process for preparing the ESEF documents as part of the financial reporting process.

Group Auditor's Responsibilities for the Assurance Work on the ESEF Documents

Our objective is to obtain reasonable assurance about whether the ESEF documents are free from material non-compliance with the requirements of § 328 Abs. 1 HGB, whether due to fraud or error. We exercise professional judgment and maintain professional skepticism throughout the assurance work. We also:

– Identify and assess the risks of material non-compliance with the requirements of § 328 Abs. 1 HGB, whether due to fraud or error, design and perform assurance procedures responsive to those risks, and obtain assurance evidence that is sufficient and appropriate to provide a basis for our assurance opinion.
– Obtain an understanding of internal control relevant to the assurance work on the ESEF documents in order to design assurance procedures that are appropriate in the circumstances, but not for the purpose of expressing an assurance opinion on the effectiveness of these controls.
– Evaluate the technical validity of the ESEF documents, i.e., whether the electronic file containing the ESEF documents meets the requirements of the Delegated Regulation (EU) 2019/815 in the version in force at the date of the consolidated financial statements on the technical specification for this electronic file.
– Evaluate whether the ESEF documents provide an XHTML rendering with content equivalent to the audited consolidated financial statements and to the audited group management report.
– Evaluate whether the tagging of the ESEF documents with Inline XBRL technology (iXBRL) in accordance with the requirements of Articles 4 and 6 of the Delegated Regulation (EU) 2019/815, in the version in force at the date of the consolidated financial statements, enables an appropriate and complete machine-readable XBRL copy of the XHTML rendering.

Further Information pursuant to Article 10 of the EU Audit Regulation

We were elected as group auditor by the annual general meeting on 24 March 2023. We were engaged by the supervisory board on 12 October 2023. We have been the group auditor of the DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main, without interruption since the financial year 2021.

We declare that the audit opinions expressed in this auditor's report are consistent with the additional report to the audit committee pursuant to Article 11 of the EU Audit Regulation (long-form audit report).

Reference to an other matter – Use of the auditor´s report

Our auditor's report must always be read together with the audited consolidated financial statements and the audited group management report as well as the assured ESEF documents. The consolidated financial statements and the group management report converted to the ESEF format – including the versions to be filed in the company register – are merely electronic renderings of the audited consolidated financial statements and the audited group management report and do not take their place. In particular, the "Report on the Assurance on the Electronic Rendering of the Consolidated Financial Statements and the Group Management Report Prepared for Publication Purposes in Accordance with § 317 Abs. 3a HGB" and our assurance opinion contained therein are to be used solely together with the assured ESEF documents made available in electronic form.

German public auditor responsible for the engagament

The German Public Auditor responsible for the engagement is Kerstin Voeller.

Frankfurt am Main, 1 March 2024

PricewaterhouseCoopers GmbH
Wirtschaftsprüfungsgesellschaft

sgd. Schmitz	sgd. Voeller
Wirtschaftsprüfer	Wirtschaftsprüfer
(German Public Auditor)	(German Public Auditor)

Report of the Supervisory Board

Henning Deneke-Jöhrens, Chairman of the Supervisory Board of DZ BANK AG

In 2023, the Supervisory Board carried out the tasks assigned to it by law, the Articles of Association, and rules of procedure. As part of this remit, the Supervisory Board advised the Board of Managing Directors and monitored its management activities. In particular, the Supervisory Board focused on the liquidity, funding, and capital situation of DZ BANK and on its strategy as the network-oriented central institution and holding company of a financial services group. It also thoroughly addressed current regulatory challenges, the risk situation of the bank and the group, as well as the development of systems and procedures used to manage the main risks in the Bank sector and Insurance sector. The Supervisory Board was always involved in decisions of fundamental importance. The Board of Managing Directors provided the Supervisory Board with regular, timely, and comprehensive reports on all matters relevant to DZ BANK, in particular the strategy, planning, business performance, risk situation, risk management, remuneration systems, regulatory requirements, IT and other technologies, organizational matters, and compliance.

The DZ BANK Group did not significantly adjust its strategic focus in 2023. In the key areas of collaboration identified at group level as offering potential for reinforcing the future viability and profitability of the group, the entities in the DZ BANK Group continued to forge ahead with various strategic programs such as 'Verbund First 4.0' at DZ BANK. An additional implementation package, Fit4Growth, was added to the program in 2023 with the aim of updating processes efficiently. In the reporting year, strategic activities were strongly focused on the topics of sustainability, digitalization, liquidity, and funding, which continue to be issues of major importance for the entities in the DZ BANK Group, both in their core businesses and in their own operations.

Important steps included the further development of the Group Sustainability Committee. This groupwide body is made up of members of the Boards of Managing Directors of the DZ BANK group entities and is the central committee in the DZ BANK Group responsible for managing the implementation of societal, business-policy, and regulatory requirements relating to sustainability matters.

Meetings of the Supervisory Board

The Supervisory Board held five ordinary meetings in 2023. Its members attended the meetings of the Supervisory Board and its committees regularly.

At its meetings in the reporting year, the Supervisory Board regularly received and discussed reports from the Board of Managing Directors on current business performance, the capital situation, and profitability of DZ BANK and the DZ BANK Group. The reports focused on topics such as the impact of geopolitical turmoil and the effects on DZ BANK of the banking crisis, which predominantly affected the US, and the developments at Credit Suisse. Another topic covered in the reports of the Board of Managing Directors was the European Payments Initiative (EPI). The report on the capital situation and capital management in the DZ BANK Group provided the Supervisory Board with information about the AT1 bond issued in the second quarter of 2023, the results of the EBA stress test, and the results of the 2023 Supervisory Review and Evaluation Process (SREP) conducted in respect of the DZ BANK Group. The Board of Managing Directors also reported on the liquidity and funding situation of the Cooperative Financial Network, the DZ BANK Group, the liquidity subgroup (comprising DZ BANK and DZ HYP AG), and DZ BANK. In its reports, the Board of Managing Directors also touched on DZ BANK's share price and on the current situation at DZ HYP AG and R+V in view of the situation in the real estate markets and the position of some individual market players.

The Supervisory Board regularly received and discussed reports on the work of the committees from their Chairs. During the meetings, and by using a voting procedure in writing, the Supervisory Board also adopted resolutions in connection with transactions requiring its consent, such as commitments to long-term equity investments and loans. HR issues from 2022 relating to DZ BANK and the DZ BANK Group were further matters considered by the Supervisory Board. The Supervisory Board received the report from PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft (PwC) on the audit of the single-entity financial statements and management report of DZ BANK and of the consolidated financial statements and group management report for the year ended December 31, 2022 and the report of the Audit Committee on the audit of the single-entity financial statements and management report of DZ BANK and of the consolidated financial statements and group management report for the year ended December 31, 2022, approved this Audit Committee report following its own review, and approved the single-entity financial statements of DZ BANK and the consolidated financial statements for the year ended December 31, 2022 in accordance with the recommendation of the Audit Committee. In further deliberations, the Supervisory Board acknowledged the 2022 Sustainability Report of the DZ BANK Group, which included the non-financial reporting of DZ BANK and the DZ BANK Group, and the findings of the related review, which the Supervisory Board had engaged the auditor to carry out in order to obtain limited assurance. On this basis and following its own review, the Supervisory Board came to the conclusion that the above-mentioned report for 2022 meets the statutory requirements.

In accordance with the Audit Committee's recommendations, the Supervisory Board also approved the report of the Supervisory Board to the Annual General Meeting as well as the agenda for the Annual General Meeting on May 24, 2023. Based on the recommendation of the Audit Committee, this was accompanied by the Supervisory Board's proposal to the Annual General Meeting to appoint PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft (PwC) as auditor of the single-entity financial statements and the consolidated financial statements for the year ended December 31, 2023 and as auditor for the review of the group's half-year financial report for the period ended June 30, 2023 and any other interim financial statements at the level of the group or DZ BANK AG prepared for periods up to the 2024 Annual General Meeting.

In the context of the single-entity financial statements and the appropriation of profits for 2022 to be decided by the Annual General Meeting, the Supervisory Board examined the DZ BANK Group's capital situation in light of the new standard governing the accounting treatment of insurance contracts (IFRS 17) at R+V, which was not yet required to be applied as at December 31, 2022. Against this backdrop, the Supervisory Board proposed to the Annual General Meeting of DZ BANK on May 24, 2023 that no dividend be paid. At a second, Extraordinary General Meeting on October 19, 2023, the Supervisory Board then proposed a dividend payment of 20 cents per share for 2022.

Under items scheduled for regular discussion, the third quarter of 2023 saw the Supervisory Board examine and deliberate on the strategic planning in the DZ BANK Group for the period from 2024 to 2027. This included discussing the recovery planning, which is required by law. In the fourth quarter of 2023, the Supervisory Board considered and discussed the operational planning for DZ BANK and the DZ BANK Group for 2024. It also gave its consent to the opening of a DZ BANK representative office in Vietnam in order to secure a further sustained increase in income from international business.

Taking account of the related reporting by the Board of Managing Directors, the Supervisory Board examined the results of the 2023 SREP conducted by the ECB in respect of the DZ BANK Group. The supervisory authority was present for this examination. Material matters raised by the supervisory authority during this process were addressed by the Supervisory Board and discussed with representatives of the supervisory authority. These matters related to the business model, internal governance and risk management, quantitative and qualitative capital and liquidity requirements/recommendations, and operational and IT risks, in each case at the level of the DZ BANK Group.

The Supervisory Board also examined all nomination and remuneration issues dealt with by the Nominations Committee, the Remuneration Control Committee, and the Risk Committee, including the appropriateness test in accordance with the German Remuneration Regulation for Institutions (InstitutsVergV). It took note of these matters and passed any necessary resolutions in accordance with the recommendations submitted by the relevant committees.

Meetings of the Supervisory Board committees

Each Supervisory Board committee also met on a number of occasions in 2023. During this period, the Nominations Committee and the Remuneration Control Committee each held three meetings, the Audit Committee four meetings, and the Risk Committee five meetings. The Mediation Committee did not need to meet at all.

In the year under review, the **Nominations Committee** addressed the annual reappraisal of the Board of Managing Directors and the Supervisory Board. The committee also dealt with the succession planning and new structure for the Board of Managing Directors, including the nomination and appointment of a new member and the extension of the term of office of existing members of the Board of Managing Directors. It also conducted an evaluation of competencies in connection with the appointment of a new member. In addition, the committee reviewed the targets for the proportion of women on the Board of Managing Directors and on the Supervisory Board and documented the targets in the diversity policy. The Nominations Committee also reviewed and updated the training policy for the Board of Managing Directors and the Supervisory Board.

Where necessary, the Nominations Committee proposed individual resolutions to the Supervisory Board on the matters it handled.

At its meetings in 2023, the **Remuneration Control Committee** covered a wide range of remuneration issues and contractual matters relating to the Board of Managing Directors. These included the contractual arrangements of a newly appointed member of the Board of Managing Directors and former members of this board. The remuneration matters discussed were the variable remuneration of the members of the Board of Managing Directors of DZ BANK and the former DVB Bank, the amount of which was specified for 2022, and the planning of the corporate and individual targets for the members of the Board of Managing Directors of DZ BANK in 2023. In this context, the committee also addressed the need to set the overall amount of variable remuneration at DZ BANK and in the DZ BANK Group in accordance with section 7 InstitutsVergV.

The committee carried out a test of the appropriateness of the remuneration of the Board of Managing Directors and conducted the regular review of the salaries of the members of the Board of Managing Directors [as at January 1, 2024]. Further discussions by the Remuneration Control Committee covered the report by the Board of Managing Directors on the structure of the remuneration systems (DZ BANK Group remuneration strategy), the appropriateness of the remuneration systems, analysis of the risk takers for 2023, and the remuneration officer's remuneration control report. In addition, the committee received reports from the remuneration officer on the appropriateness of the remuneration systems.

Where necessary, the Remuneration Control Committee proposed individual resolutions to the Supervisory Board on the matters it handled.

In 2023, the **Audit Committee** studied the findings of the audit of the single-entity financial statements and management report of DZ BANK as well as of the consolidated financial statements and group management report for the year ended December 31, 2022 by PwC. It recommended that the Supervisory Board approve the single-entity financial statements of DZ BANK and the consolidated financial statements for the year ended December 31, 2022, as submitted.

Furthermore, the committee discussed the appointment of the auditor of the single-entity financial statements and the auditor of the consolidated financial statements for 2023 as well as the appointment of the auditor for the review of the group's half-year financial report and any other interim financial statements. In regard to the above, the Audit Committee considered the independence and quality of the auditor. The fee to be paid to the auditor was also taken into account. The Audit Committee recommended that the Supervisory Board propose to the Annual General Meeting on May 24, 2023 that PwC again be appointed as the auditor of the single-entity financial statements and the consolidated financial statements for the year ended December 31, 2023, and as auditor for the review of the group's half-year financial report for the period ended June 30, 2023 and any other interim financial statements at the level of the group or DZ BANK AG prepared for periods up to the 2024 Annual General Meeting.

In addition, the Audit Committee examined the half-year financial report of the DZ BANK Group for the period ended June 30, 2023 and the reports from PwC on the review of the half-year financial report and on the audit of the securities and investment services business and the depository function in 2022/2023. Furthermore, the Audit Committee studied the planning for the audit of the 2023 single-entity and consolidated financial statements by PwC, discussed the auditor's areas of focus for 2023 and key findings from the current audit, and monitored the financial reporting process.

In other activities, the Audit Committee discussed the report of the Supervisory Board to the Annual General Meeting and prepared the Supervisory Board's review of the combined non-financial statement of DZ BANK and the DZ BANK Group for 2022. This also involved carefully studying the findings of the external review of the 2022 Sustainability Report, for which PwC was also engaged by the Supervisory Board. The committee recommended resolutions to the Supervisory Board in relation to both matters.

In addition, the Audit Committee examined and discussed the business performance and the capital situation of the DZ BANK Group. Here too, the discussion placed particular emphasis on the capital situation of the DZ BANK Group and on the level of loss allowances in view of the prevailing economic and geopolitical challenges. The Audit Committee also acknowledged the segment reporting for DZ BANK – central institution and corporate bank (CICB), for the DZ BANK holding function, and for the business subsumed under 'Other/ Consolidation'. The committee routinely focused on supervisory audits carried out in the DZ BANK Group, the latest regulatory issues, non-financial risk, and the project portfolio at DZ BANK, and discussed these matters with the Board of Managing Directors. Other matters addressed by the committee included the reports prepared by Group Audit for the periods ended December 31, 2022 and June 30, 2023, the annual compliance report for 2022, updates on progress with resolution planning, the reports on the bank-wide internal control system (ICS) and on non-financial risks, the IT strategy of the DZ BANK Group, the IT strategy of DZ BANK, and the outsourcing strategy of DZ BANK. In this context, the Audit Committee monitored the effectiveness of the internal control system, risk management system, and the internal audit function. Additionally, it examined the engagement of the auditor for non-audit services and updated the guidance for the approval of such services at the end of the year.

Where necessary, the Audit Committee proposed individual resolutions to the Supervisory Board on the matters it handled.

In 2023, the **Risk Committee** studied the findings of the review of the lending business, which had been brought forward, regulatory and organizational matters, and the shareholdings in the context of the audit of the single-entity financial statements of DZ BANK and of the consolidated financial statements for the year ended December 31, 2022. In addition, the committee advised the Supervisory Board on current and future overall risk appetite and strategy in the DZ BANK Group. It also helped the Supervisory Board to monitor implementation of this strategy. This involved regularly examining and acknowledging the quarterly reports on overall risk (including risk indicators) and credit risk. The risk appetite statement, the risk strategies, and the 2024 group governance policy of the DZ BANK Group were, as usual, on the agenda for the committee at the end of the year. The review of the risk reports and strategies was an important component in the process of monitoring the effectiveness of the risk management system at DZ BANK and in the DZ BANK Group. Furthermore, the Risk Committee examined the risk situation pertaining to DZ HYP's real estate loan portfolio, focusing in particular on the subportfolio relating to finance for project developers, property developers, and purchases of land. In each quarter of 2023, the Risk Committee also received an update on the latest geopolitical developments (war in Ukraine, dependency on China / dispute between China and Taiwan, conflict in the Middle East) and their impact on DZ BANK.

Moreover, the Risk Committee discussed and acknowledged reports from the Board of Managing Directors on the results of the stress tests in the DZ BANK Group. It also dealt with various matters relating to long-term equity investments (including a capital increase at VR Factoring GmbH) and loan applications. The committee studied the outcome of the comply-or-explain process for the audit of the group lending policy and group risk management policy, which was completed successfully and did not identify any instances of non-compliance without agreed action plans in 2022. In further deliberations, the committee examined the terms and conditions in customer business. The committee also reviewed the remuneration systems at DZ BANK pursuant to section 25d (8) sentence 4 KWG and found that the incentives set as part of the remuneration system take account of the risk, capital, and liquidity structure of the institution as well as the probability and maturity of revenue. The deliberations of the Risk Committee also covered the work program for resolution planning for 2023 in accordance with the Single Resolution Board's requirements.

Where necessary, the Risk Committee proposed individual resolutions to the Supervisory Board on the matters it handled.

Corporate governance

In line with the requirements of the German Banking Act, the Supervisory Board conducted an evaluation of the Board of Managing Directors and a self-evaluation in the first quarter of 2023. It found that the structure, size, composition, and performance of both the Board of Managing Directors and the Supervisory Board and the knowledge, skills, and experience of the individual members of the Board of Managing Directors and Supervisory Board and of the Board of Managing Directors and Supervisory Board as a whole fulfilled the requirements laid down by law and in the Articles of Association. The Supervisory Board therefore confirmed the individual suitability of the individual members of the Board of Managing Directors and Supervisory Board and the collective suitability of the Board of Managing Directors and Supervisory Board as a whole. In this context, it also signed off an updated profile of skills and expertise for the Board of Managing Directors and Supervisory Board.

In its view, the Supervisory Board had adequate financial and personnel resources at its disposal in the reporting year to be able to support new members in becoming familiar with their role and to provide the training that is necessary to maintain members' required level of expertise. DZ BANK offers to cover the costs for members of the Supervisory Board of training programs from external providers that are relevant to the activities of supervisory boards. As part of the onboarding process, new members are offered customized internal training sessions and information meetings to help them prepare for their tasks on the Supervisory Board of DZ BANK. This offer is meeting with good take-up. In 2023, the Supervisory Board also received internal training on compliance, IFRS 17, cryptodepository business, IT, and ESG instruments in the lending business.

There were no indications of fundamental and far-reaching conflicts of interests affecting Supervisory Board members.

Cooperation with the auditor

PwC attended all meetings of the Audit Committee and provided explanations and information as requested. As a priority at these meetings, the Audit Committee discussed with PwC the audit plan and the provisional key audit matters for the 2023 single-entity financial statements and consolidated financial statements. Moreover, the Audit Committee obtained information on the auditor's other areas of focus for 2023.

For the purposes of monitoring the quality of the audit of the financial statements for the year ended December 31, 2023, the Audit Committee asked PwC to provide a quality report explaining the quality assurance processes and measures implemented by the auditor, for example in connection with acceptance and continuation of the engagement and in connection with independent quality assurance related to the engagement. The committee also conducted its own evaluation of the quality of the audit using the qualitative indicators defined in the committee's audit quality review guidelines. For the purposes of this evaluation, the Audit Committee took into account any findings and conclusions from external and internal inspections of which it was aware.

Furthermore, the committee dealt with the engagement of and fee for the auditor. To monitor the independence of the auditor, the Audit Committee obtained a declaration from PwC confirming its independence. The committee also obtained information about any services other than the audit of the annual financial statements for which PwC was engaged. It adopted a resolution to update the catalog of predefined non-audit services that can be treated as approved without the Audit Committee needing to adopt a separate resolution in each individual case.

The auditor PwC confirmed that the single-entity financial statements – together with the bookkeeping system – and the management report of DZ BANK as well as the consolidated financial statements and the group management report submitted by the Board of Managing Directors for the year ended December 31, 2023 complied with the applicable legal provisions. PwC issued an unqualified opinion for each of these sets of financial statements. The audit reports were submitted to the members of the Supervisory Board, who discussed them in detail at their meetings. In addition, the Chairman of the Supervisory Board and the Chairs of the Supervisory Board committees maintained a regular, intensive dialogue with the auditor. This dialogue also covered the independent auditor's report pursuant to section 322 HGB (including the key audit matters). The Supervisory Board agrees with the findings of the audit.

The Board of Managing Directors of DZ BANK issued a separate combined non-financial report for the DZ BANK Group and DZ BANK for 2023. The Supervisory Board decided to submit the report for a voluntary external review, for which it engaged the auditor. PwC did not become aware of any facts that would lead it to believe that the separate combined non-financial report for the DZ BANK Group and DZ BANK for 2023 had not been prepared, in all material respects, in accordance with the statutory requirements. On this basis and in accordance with the Audit Committee's recommendation, the Supervisory Board concluded, having conducted its own review, that the Sustainability Report complies with the statutory requirements. At its meeting on March 21, 2024, the Supervisory Board therefore approved the 2023 Sustainability Report of DZ BANK.

Adoption of the financial statements

At their respective meetings, the Supervisory Board and its Audit Committee scrutinized the single-entity financial statements and management report of DZ BANK (including the Board of Managing Directors' proposal for the appropriation of profits) as well as the consolidated financial statements and group management report for the year ended December 31, 2023. The Chairman of the Audit Committee provided the Supervisory Board with detailed information about the committee's extensive deliberations on the single-entity financial statements and management report of DZ BANK as well as the consolidated financial statements and group management report. Representatives of the auditor attended the Supervisory Board meeting convened to adopt the financial statements as well as the preparatory meetings held by the Audit Committee and by the Risk Committee so that they could report in detail on the material findings of their audit. They were also available to answer questions from the members of the Supervisory Board. The Supervisory Board did not express any reservations following the concluding findings of its review.

The Supervisory Board approved the single-entity financial statements of DZ BANK and the consolidated financial statements prepared by the Board of Managing Directors for the year ended December 31, 2023 at its meeting on March 21, 2024 in line with the Audit Committee's resolution recommendation. The financial statements have therefore been adopted. The Board of Managing Directors and the Supervisory Board have decided to propose to the Annual General Meeting on May 16, 2024, in a resolution on the appropriation of the distributable profit reported in the 2023 single-entity financial statements amounting to €506,455,778.84, that a dividend of 25 cents per share be distributed (total distribution of €447,836,189.25) and that the remaining distributable profit for 2023 of €58,619,589.59 be carried forward to the next accounting period.

Personnel changes on the Board of Managing Directors and the Supervisory Board

There were no personnel changes on the Board of Managing Directors of DZ BANK in 2023. In view of the upcoming departure of Mr. Uwe Fröhlich, who will be retiring as planned with effect from July 1, 2024, Mr. Johannes Koch was appointed to the Board of Managing Directors with effect from January 1, 2024. He has taken on the role of HR director on the Board of Managing Directors. Once Mr. Fröhlich has stepped down with effect from July 1, 2024, Dr. Riese will be the sole Chief Executive Officer.

As regards the employee representatives on the Supervisory Board and as reported last year, the courts appointed Mr. Kevin Voß to replace Mr. Spitzbarth as a labor union representative (section 16 MitbestG) on the Supervisory Board of DZ BANK with effect from January 1, 2023. There were no personnel changes among the shareholder representatives on the Supervisory Board in 2023.

The Supervisory Board wishes to thank the Board of Managing Directors and all employees of the DZ BANK Group for their valuable contribution in 2023.

Frankfurt am Main, March 21, 2024

DZ BANK AG
Deutsche Zentral-Genossenschaftsbank,
Frankfurt am Main

Henning Deneke-Jöhrens
Chairman of the Supervisory Board

Editorial information

DZ BANK AG
Deutsche Zentral-Genossenschaftsbank,
Frankfurt am Main
Platz der Republik
60325 Frankfurt am Main
Germany

Postal address:
60265 Frankfurt am Main
Germany

Telephone +49 (0)69 7447 01
Fax +49 (0)69 7447 1685
mail@dzbank.de
www.dzbank.com

This annual report is available in
electronic form on our website at
www.annualreport.dzbank.com.

DZ BANK AG
Deutsche Zentral-Genossenschaftsbank,
Frankfurt am Main
Platz der Republik
60325 Frankfurt am Main
Germany

www.dzbank.com