

Supras & Agencies

A Research Publication by DZ BANK AG



Methodology Rates Markets SSA Research

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Within DZ BANK's Rates Markets Research for SSAs, bonds from **71 issuers** are covered within the scope of analysis work. A complete list of these issuers is provided in the appendix to this publication.

We issue one recommendation for the senior unsecured bonds of each of the issuers mentioned above (referred to in the following as "**bonds**").

Our investment recommendations for bonds of SSA issuers are first based on a fundamental analysis of the respective issuer and the resulting approximate default risk over the next three years. In addition, our system of investment recommendations also takes into account the expected volatility of risk premiums, in order to take account of extraordinary developments and events, so-called idiosyncratic risks - for example with regard to negative developments in the business model of individual issuers - or differences in the tradability of bonds (liquidity) in the secondary market.

Our analyses do not include a credit rating as defined in Regulation (EC) 1060/2009 of 16 September 2009 on the rating agencies.

BONDS

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Author:
Christian Lenk, CFA, CMT, ANALYST
+49 (0)69 7447 90 167
christian.lenk@dzbank.de

THEORETICAL BASIS

Our investment recommendations for bonds of SSA issuers are first based on a fundamental analysis of the respective issuer and the resulting approximate default risk over the next three years. In addition, our system of investment recommendations also takes into account the expected volatility of risk premiums, in order to take account of extraordinary developments and events, so-called idiosyncratic risks - for example with regard to negative developments in the business model of individual issuers - or differences in the tradability of bonds (liquidity) in the secondary market.

Risk premium or credit spread

For a relative comparison of the volatility of the risk premiums of issuers, we consider their yield differential (credit spread or, in short, spread) compared to the swap curve, which is generally regarded as an indicator of the market's assessment of credit risk from the perspective of investors. These spreads change over time due to market changes in the issuer's assessment. Volatility is a statistical measure of fluctuation that is calculated using mathematical methods.

SUPERORDINATE FACTORS

In addition to the issuer-specific analysis described below, the analyst must also take into account higher-level aspects in the analysis of individual issuers in SSA research. These are factors of a general nature that can influence the creditworthiness of an issuer and the investment recommendation to be derived. The analyst responsible for the issuer in question must take these influencing factors into account when analyzing the individual issuer so that the assessments and recommendations of DZ BANK Research are based on identical assumptions and are consistent in themselves.

The economic forecasts issued by DZ BANK Research are a key element of the analysis. Growth rates of gross domestic product and its components, inflation rates, data on the global economy, and similar factors can be important in assessing the respective issuer. DZ BANK Research's interest rate forecasts provide a further overarching point of reference for the analysis of individual issuers and the recommendations derived from them. Political aspects of a global nature are another point of reference. Worldwide political uncertainties, pandemics, wars, and conflicts can also influence the assessment of, or recommendations made by, issuers that are not directly involved.

In addition, new, overriding regulatory requirements, monetary policy and other factors may also be relevant to the formulation of an investment recommendation.

The general risk assessment of the market must also be taken into account. In the event of a general increase in risk aversion, for example as a result of a sudden deterioration in the global economic situation, the volatility of risk premiums also tends to rise, especially for issuers with a weaker credit rating. Conversely, the volatility of risk premiums tends to decrease in phases of low news and strong economic activity.

The overarching forecasts of DZ BANK Research must be taken into account by the analysts when analyzing the bonds of individual issuers. It is the responsibility of the respective analyst to assess the potential impact of the central forecasts on the subject of analysis.

RELEVANT FACTORS IN THE ANALYSIS OF VON SSAS

Within DZ BANK's Rates Markets Research for SSAs, bonds from 71 issuers are covered within the scope of analysis work. A complete list of these issuers is provided in the appendix to this publication.

The analysis of the bonds of SSA issuers consists of a fundamental analysis of the respective issuer and a market-related analysis of the expected volatility of the risk premiums of the outstanding bonds. Both parts of the analysis are brought together by the analyst's expert knowledge. This is based on the analysts' experience in dealing with the relevant markets, the peer group covered by DZ BANK's Rates Markets Research for SSAs, and the individual issuers. The result of this combination is the investment recommendation. The depth of analysis depends very much on the information provided by the individual issuers.

» Fundamental analysis of the issuer

DZ BANK's SSA Research first conducts a fundamental analysis of the issuer. The focus here is on the issuer's creditworthiness, i.e. the prospect that the issuer will fully meet its payment obligations over the next three years. The fundamental analysis is primarily based on the guarantee and ownership structure of the respective issuer. In addition to the type of guarantee (e.g. explicit vs. implicit guarantees), the creditworthiness of the guarantors and/or owners is also included in the fundamental analysis. If government guarantors and/or owners of an issuer have been provided with an investment recommendation by DZ BANK's Rates Markets Research for EMU Government Bonds, this assessment plays a central role in the preparation of the investment recommendation for the respective SSA issuer. In addition, the issuer's fundamental data are also used to arrive at a judgment. The latter are the focus of attention when no investment recommendations are available from DZ BANK's Rates Markets Research for EMU Government Bonds. The focus here is also on assessing the quality of the guarantee and ownership structure on the one hand, and the stability of the business model (e.g. the quality of the loan portfolio) on the other. SSA analysts also consult the current assessments of the rating agencies Moody's, S&P and Fitch.

» Market-related analysis of the issuer

In a further analysis step, the analyst makes an assessment of the expected volatility of risk premiums. Volatility is influenced by factors specific to the market as a whole and to the issuer. The analyst makes assumptions about the future development of volatility on the basis of his expert knowledge. For this purpose, he takes into account both empirical values on past developments of the volatility of the issuer's bonds and makes assumptions on the development of the overall market and issuer-specific factors. Reasons that may lead to a general increase in volatility in the overall market include, for example, an unexpected decision by a relevant central bank such as the ECB or the US Federal Reserve. Issuer-specific factors that influence volatility include changes in the guarantor structure or regulatory changes with regard to the issuer's bonds (e.g. LCR eligibility, ECB repo eligibility).

These investment recommendations are primarily the result of a fundamental analysis of the respective issuer. In addition to the primary fundamental analysis, our system of investment judgements also takes into account the expected volatility of risk premiums in order to take account of extraordinary developments and events in issuers. Accordingly, the analyst's approach is situation-specific and cannot be ap-

plied universally and repeatedly to every market situation. The professional experience and methodological knowledge of the analyst in the fundamental and market-related analysis of SSA issuers in various market situations is therefore a decisive factor in the opinion-forming process.

RELEVANT FACTORS FOR THE ISSUANCE OF INVESTMENT RECOMMENDATIONS

Since 02 June 2020, the Fixed Income Research unit has divided the investment recommendations for individual issuers that are in our coverage into the following categories: „**Low Risk (LR)**“, „**Moderate Risk (MR)**“ and „**Elevated Risk (ER)**“.

Low Risk (LR)

The investment recommendation "Low Risk" indicates that we

- a) consider the issuer's default probability to be extremely low based on a three-year horizon and/or
- b) expect low spread volatility of the issuer's Euro denominated senior bonds compared to other issuers in the segment.

Bonds from issuers classified as Low Risk are therefore generally suitable for a longer-term investment and thus as a basic investment in a portfolio.

Moderate Risk (MR)

The investment recommendation "Moderate Risk" indicates that we

- a) consider the issuer's default probability to be low based on a three-year horizon and/or
- b) expect moderate spread volatility of the issuer's Euro denominated senior bonds compared to other issuers in the segment.

The investment recommendation Moderate Risk differs from Low Risk in that it has a higher risk. Bonds from issuers classified as Moderate Risk are therefore more suitable as an addition to a portfolio.

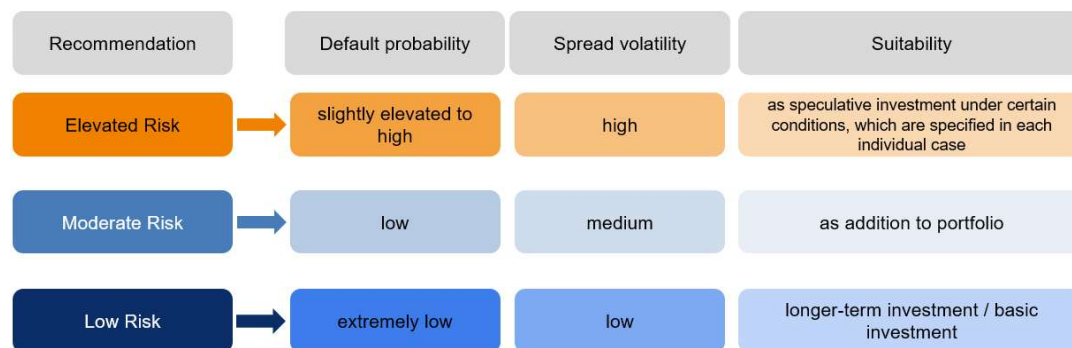
Elevated Risk (ER)

The investment recommendation "Elevated Risk" indicates that we

- a) consider the issuer's default probability to be slightly elevated to high based on a three year horizon and/or
- b) expect the spread volatility of the issuer's Euro denominated senior bonds to be higher compared to other issuers in the segment.

The investment recommendation Elevated Risk is associated with higher risks than the recommendation Moderate Risk. Bonds from issuers classified as Elevated Risk are therefore only suitable as speculative investments under certain conditions, which are specified in each individual case.

FUNCTIONING OF OUR INVESTMENT RECOMMENDATIONS



Source: DZ BANK Research

SOURCE: DATA, STUDIES, INFORMATION

- » SSA analysts use a wide range of data and information. Fundamental analysis is primarily based on the guarantee and ownership structure of the respective issuer. If government guarantors or owners of an issuer have an investment recommendation from DZ BANK's government bond research, this assessment plays a central role in the preparation of the investment recommendation for the respective SSA issuer. In addition, the fundamental data of an issuer are also used to arrive at a judgment. A number of other sources of information are also used, including reports from the rating agencies Moody's, S&P and Fitch as well as news from Bloomberg and Reuters.
- » Since the assessment of the expected fundamental development of an SSA issuer may also depend on the future economic development (e.g. gross domestic product, unemployment) in its respective markets, the SSA analysts also rely on forecasts and expectations in this regard from the relevant analysts at DZ BANK and other sources.
- » When assessing other factors relevant to the assessment of issuers or the expected performance of bonds, the analysts also rely on other sources, such as legal texts and regulatory announcements.
- » SSA analysts obtain data on market indicators, mainly bond and index data, mainly from Bloomberg, Reuters and Markit.

Since the analysis of SSA issuers is complex, it is important to filter out from the existing wealth of information those that ultimately decide on the development of a SSA bond.

^{1) - 12)} Important: Please read the references to possible conflicts of interest and disclaimers/disclosures at the end of this report.

APPENDIX

COVERAGE OF SSA ISSUERS

Kreditanstalt für Wiederaufbau (KfW) ^{6,7,10,11)}	International Development Association (IDA) ^{10,11)}	Société Française de Financement Local (SFIL) ^{6,7,10)}
FMS Wertmanagement ^{10,11)}	Central American Bank for Economic Integration	Action Logement Services
Landwirtschaftliche Rentenbank ^{10,11)}	International Finance Facility for Immunisation ¹⁰⁾	Île de France Mobilités
NRW.BANK ^{6,7,10,11)}	Inter-American Investment Corporation (IIC) / IDB Invest	Bank Nederlandse Gemeenten (BNG) ^{1,6,7,10,11)}
L-Bank ^{10,11)}	Asian Infrastructure Investment Bank (AIIB)	Nederlandse Waterschapsbank (NWB) ^{6,7,10,11)}
Erste Abwicklungsanstalt (EAA) ^{6,7,10,11)}	European Investment Bank (EIB) ^{6,7,10,11)}	Ned. Financierings-Maatsch. voor Ontwikkelingslanden (FMO) ^{10,11)}
LfA Förderbank Bayern ^{6,7,10,11)}	European Financial Stability Facility (EFSF) ^{6,7,10,11)}	Kommunalbanken (KBN) ^{10,11)}
Investitionsbank Berlin ^{6,7,10,11)}	European Stability Mechanism (ESM) ^{6,7,10,11)}	Kommuninvest ¹⁰⁾
Bayerische Landesbodenkreditanstalt ^{10,11)}	European Union (EU) ^{6,7,10,11)}	Municipality Finance (MuniFin) ^{6,7,10,11)}
HSH Finanzfonds AöR ^{10,11)}	Eurofima	Swedish Export Credit (SEK)
Wirtschafts- und Infrastrukturbank Hessen (WI Bank) ^{6,7,10,11)}	Euratom	Kommunekredit ^{6,7,10,11)}
Investitionsbank Schleswig-Holstein (IB.SH) ^{6,7,10,11)}	Caisse d'Amortissement de la Dette Sociale (CADES) ^{10,11)}	Finnvera Oyj ^{10,11)}
HSH Portfoliomanagement AöR	SNCF Réseau (vormals Réseau ferré de France) ¹⁰⁾	TVR
Sächsische Aufbaubank (SAB) ^{10,11)}	UNEDIC ^{10,11)}	Instituto de Crédito Oficial (ICO) ^{10,11)}
Hamburgische Investitions- und Förderbank (IFB) ^{6,7,10,11)}	Agence Française de Développement (AFD) ¹¹⁾	Fondo de Amortización del Déficit Eléctrico (FADE)
Intl. Bank for Reconstruction and Development (IBRD) ^{6,7,10,11)}	Caisse des Dépôts (CDC) ^{10,11)}	Adif - Alta Velocidad
Inter-American Development Bank (IDB) ^{10,11)}	Bpifrance Financement (vormals OSEO)	Öst. Kontrollbank (OeKB) ¹¹⁾
Asian Development Bank (ADB) ^{10,11)}	Régie Autonome des Transports Parisiens	Österreichische Bundesbahn Infrastruktur (ÖBB)
Intl. Finance Corporation (IFC) ^{6,7,10,11)}	SAGESS	Autobahnen- und Schnellstraßen-Finanzierungs-AG (ASFINAG) ¹¹⁾
European Bank for Reconstruction and Development ^{10,11)}	Caisse Nationale des Autoroutes	China Development Bank ¹⁰⁾
African Development Bank ^{10,11)}	Agence France Locale (AFL)	Export Development Canada (EDC) ¹¹⁾
Nordic Investment Bank (NIB) ^{10,11)}	Assistance Publique - Hôpitaux de Paris	Canada Pension Plan Investment Board
Council of Europe Development Bank (CEB) ^{6,7,10,11)}	Société du Grand Paris	Dexia Crédit Local (with government guarantee)
Corporación Andina de Fomento (CAF) ^{10,11)}	Caisse Centrale du Crédit Immobilier de France (3CIF) (with government guarantee) ^{10,11)}	

Source: DZ BANK Research

1) – 12) Important: Please read the references to possible conflicts of interest and disclaimers/disclosures at the end of this report.

I. IMPRINT

Published by:

DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main,
Platz der Republik, 60265 Frankfurt am Main

Telephone: + 49 69 7447 - 01

Telefax: + 49 69 7447 - 1685

Homepage: www.dzbank.de

E-mail: mail@dzbank.de

Represented by the Board of Managing Directors:

Uwe Fröhlich (Co-Chief Executive Officer),

Dr. Cornelius Riese (Co-Chief Executive Officer), Uwe Berghaus,

Dr. Christian Brauckmann, Ulrike Brouzi, Wolfgang Köhler,

Michael Speth, Thomas Ullrich

Chairman of the Supervisory Board: Henning Deneke-Jöhrens

Head office of the company: Registered as public limited company in Frankfurt am Main, Local Court (Amtsgericht) Frankfurt am Main, Commercial Register HRB 45651

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VAT ident. no.: DE114103491

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Responsible for the contents: Stefan Bielmeier, Head of Research and Economics

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II. MANDATORY DISCLOSURES FOR FINANCIAL ANALYSES AND FURTHER REMARKS

1. Responsible Company

1.1 This Financial Analysis has been prepared by **DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main (DZ BANK)** as an investment firm.

Financial analyses are independent client information containing **generic investment recommendations** regarding **specific issuers or specific financial instruments, but they do not** make allowance for any individual investment criteria.

1.2 The mandatory disclosures for Research Publications (Financial Analyses and Other Research Information) as well as **further remarks, especially the Conflicts of Interest Policy of DZ BANK Research**, regarding **used methods, procedures, and statistics**, can be **read and downloaded free-of-charge** under www.dzbank.com/disclosures.

2. Competent Supervisory Authorities

DZ BANK is supervised as a credit institution and as an investment firm by:

– **European Central Bank - www.ecb.europa.eu**

Sonnemannstraße 20 in 60314 Frankfurt / Main and

– **Federal Financial Supervisory Authority (BaFin) - www.bafin.de**

Marie-Curie-Straße 24 - 28 in 60439 Frankfurt / Main

Regarding Research Publications (Financial Analyses and Other Research Information) the DZ BANK linked **local cooperative banks are supervised by:**

– **Federal Financial Supervisory Authority (BaFin) - www.bafin.de**

Marie-Curie-Straße 24 - 28 in 60439 Frankfurt / Main

3. Independent Analysts

3.1 The Research Publications (Financial Analyses and Other Research Information) of DZ BANK are independently prepared by its employed analysts or by competent analysts commissioned in a given case on the basis of the binding **Conflicts of Interest Policy**.

3.2 Each analyst involved in the preparation of the contents of this Research Publication confirms that

– this Research Publication represents his independent specialist evaluation of the analysed object in compliance with the Conflicts of Interest Policy of DZ BANK and

– his compensation depends neither in full nor in part, neither directly nor indirectly, on an opinion expressed in this Research Publication.

4. Definitions of the Categories for Investment Recommendations in Financial Analyses

The **categories for investment recommendations in Financial Analyses** of DZ BANK are defined as follows:

4.1 Shares:

- Fundamental Analysis:

"Buy" means that the absolute appreciation expected in the next twelve months is greater than 10%.

"Sell" means that the absolute depreciation expected in the next twelve months is greater than 10%.

"Hold" means that the absolute *price* volatility expected in the next twelve months lies between +10% and -10%.

4.2 Fixed Income Instruments:

1. Government Bonds, SSAs, Financials and Corporate Bonds

The terms **"Low Risk"**, **"Moderate Risk"** and **"Elevated Risk"** are used as investment ratings when assessing individual issuers from the market segments Government Bonds, Agency Bonds, Financials (senior unsecured) and Corporate Bonds (senior unsecured). The classifications are independent of overriding allocation recommendations for market segments (cf. mandatory disclosures on other research information at

www.dzbank.de/mandatory-disclosures). This estimate is based on DZ BANK's expectations regarding the probability of default and/or the relative volatility of risk premiums over the next three years (cf. DZ BANK methodological studies at www.dzbank.de/mandatory-disclosures).

The investment recommendation **"Low Risk"** indicates that DZ BANK a) considers the issuer's probability of default to be extremely low over a three-year period and/or b) expects a low spread volatility of the issuer's (senior) bonds denominated in EUR compared with other issuers in the segment. Senior bonds denominated in EUR from issuers classified as "Low Risk" are therefore generally suitable for longer-term investments and thus qualify as a basic investment in a portfolio.

The investment recommendation **"Moderate Risk"** indicates that DZ BANK a) considers the issuer's probability of default to be low over a three-year period and/or b) expects a moderate spread volatility of the issuer's (senior) bonds denominated in EUR compared with other issuers in the segment. Senior bonds denominated in EUR from issuers classified as "Moderate Risk" are suitable as an addition to a portfolio.

The investment recommendation **"Elevated Risk"** indicates that DZ BANK a) considers the issuer's probability of default is slightly elevated to high over a three-year period and/or b) expects a higher spread volatility of the issuer's (senior) bonds denominated in EUR compared with other issuers in the segment. Senior bonds denominated in EUR from issuers classified as "Elevated Risk" are only suitable as a speculative investment under certain conditions specified in individual cases.

2. Covered Bonds

When assessing an issuer's covered bond programme, the terms **"Outperformer"**, **"Market Performer"** and **"Underperformer"** are used as investment recommendation. The investment recommendation is based on DZ BANK's assessment of whether the credit spread return of an issuer's covered bonds will perform better than the market ("Outperformer"), perform worse than the market ("Underperformer") or perform in line with the market ("Market Performer") for bonds of comparable covered bond programmes over the next six months. The recommendation categories refer to covered bonds ("covered bank bonds") in EUR and are only valid for the publication date. Since issuers have usually issued a large number of bonds, the expected credit return cannot be quantified (cf. DZ BANK methodological studies at www.dzbank.de/mandatory-disclosures).

5 Categories for isolated statements without investment recommendation

Statements on the **isolated evaluation of specific aspects that precede an investment recommendation** on a financial instrument and / or an issuer - **especially** according to the **sustainability criteria** defined by DZ BANK, its defined **value approach**, its defined **asset allocation** (DZ BANK Sample Portfolio), its defined sector strategy Euro-Stoxx (**DZ BANK Sector Favorites**), its defined valuation of payments to beneficiaries (**DZ BANK Dividend Aristocrats**), their **weighting recommendations for market**

¹⁾ - ¹²⁾ Important: Please read the references to possible conflicts of interest and disclaimers/disclosures at the end of this report.

segments or otherwise defined groups of different issuers, i.e. their **weighting recommendations in the overall market strategy Fixed Income**, in the *sector strategy Corporates* and their **weighting recommendations for covered bond jurisdictions** - are **not investment categories** and therefore **do not contain any investment recommendations**.

These isolated statements **alone** are **not sufficient** to form the basis of an investment decision. Reference is made to the explanation of the used relevant methods.

In the case of recommendations on market segments or otherwise defined groups of different issuers, the terms "**Overweight**", "**Underweight**" and "**Neutral weight**" are used.

"**Overweight**" means that the aforementioned bond segment is expected to perform significantly better on a six-month horizon than the average of the other bond segments in coverage, both in the event of a positive and negative overall market trend.

"**Underweight**" means that the aforementioned bond segment is expected to perform significantly worse on a six-month horizon than the average of the other bond segments in coverage, both in the event of a positive and negative overall market trend.

"**Neutral weight**" means that the bond segment in question is expected to perform approximately in line with the average of the other bond segments in the coverage over a six-month period.

The weighting recommendations for market segments or otherwise defined groups of different issuers are independent of the recommendations for individual issuers or those of superordinate or subordinate market segments. They are relative, i.e. if not all the segments mentioned are weighted "neutral", at least one bond segment is rated "overweight" and one bond segment is rated "underweight". Accordingly, the weighting recommendations are not an absolute statement about profit and loss (cf. DZ BANK methodological studies at www.dzbank.de/mandatory-disclosures).

5.1 Overall market strategy

The weighting recommendations in the overall Fixed Income market strategy refer to the comparison of bond segments relative to one another. There are currently five bond segments in the overall market strategy: 1. Government Bonds, 2. Agency Bonds, 3. Covered Bonds, 4. Bank Bonds (senior unsecured), 5. Corporate Bonds (senior unsecured). Calculations of the total return are decisive for the expected performance. The weighting recommendations in the overall market strategy are independent of the weighting recommendations within the individual bond segments themselves, because the respective peer group within each individual bond segment is a completely different one. For example, weighting recommendations within government bond sector refer to issuer countries in relation to each other, which have no relevance at the level of weightings in the overall market strategy.

5.2 Sector strategy corporate bonds

In the corporate bond segment, we summarise the relative performance we expect of a sector in comparison with the developments forecast for the other sectors in a sector assessment. Calculations of the credit spread return are decisive for the expected performance.

5.3 Strategy covered bonds

Our weighting recommendations for Covered Bond jurisdictions ("country") are based on a comparison of the respective country segment (sub-index within the iBoxx € Covered Index) with the total index (iBoxx € Covered Index). The credit spread return is decisive for the expected performance.

6. Scheduled Updates and Validity Periods of Investment Recommendations

6.1 The frequency of **updates of Financial Analyses** depends in particular on the underlying macroeconomic conditions, current developments on the relevant markets, the current development of the analyzed companies, measures undertaken by the issuers, the behavior of trading participants, the competent supervisory authorities and the competent central banks as well as a wide range of other parameters. The periods of time named below therefore merely provide a **non-binding indication** of when an updated investment recommendation may be expected.

6.2 No obligation exists to update an investment recommendation. If an investment recommendation is updated, this update **replaces the previous investment recommendation with immediate effect**.

If no update is made, investment recommendations **end / lapse on expiry** of the **validity periods** named below. These periods **begin** on the **day** and at the **time** the investment recommendation is **completed**.

6.3 The **validity periods** for investment recommendations (**financial analyses**) are as follows:

Shares:	
Fundamental analysis	six months
Fixed income instruments:	
Government bonds	twelve months
SSAs	twelve months
Financials (senior unsecured)	twelve months
Corporate Bonds (senior unsecured)	twelve months
Covered Bonds	one trading day

6.4 Evaluations of isolated aspects without investment recommendation have the following validity periods:

Sustainability analyses:	one month
Analyses according to the value approach:	one month
Asset allocation analyses (DZ BANK Sample Portfolio):	one month
Euro Stoxx sector strategy (DZ BANK Sector Favorites):	one month
Dividends (DZ BANK Dividend Aristocrats):	three months
Credit Trend Issuers	twelve months
Share indices (fundamental):	three months
Currency areas:	six to twelve months
Weighting recommendations for market segments	six months
Overall market strategy	six months
Sector strategy Corporate Bonds	six months
Strategy Covered Bonds:	six months
Derivatives:	
(Bund futures, Bobl futures, treasury futures, Buxl futures):	one month
Commodities:	one month

6.5 In a given case, updates of analyses may also be **temporarily suspended without prior announcement** on account of compliance with supervisory regulations.

6.6 If **no updates are to be made in the future** because the analysis of an object is to be discontinued, notification of this shall be made in the final publication or, if no final publication is made, the close of the analysis shall be given in a separate note.

7. General Overview of Investment Recommendations on Financial Instruments and Issuers

Each working day DZ BANK prepares a **general overview of all investment recommendations** on financial instruments and / or issuers disseminated in the last **twelve months**, containing all details specified by the supervisor. This list can be **read and downloaded free-of-charge** under www.dzbank.com/disclosures.

8. Avoiding and Managing Conflicts of Interest

8.1 DZ BANK Research has a binding **Conflicts of Interest Policy** which ensures that the relevant conflicts of interest of DZ BANK, the DZ BANK Group, the analysts and employees of the Research and Economics Division and persons closely associated with them are avoided, or - if such interests are effectively unavoidable - are appropriately identified, managed, disclosed and monitored. Material aspects of this policy, which can be **read and downloaded free-of-charge** under www.dzbank.com/disclosures are summarized as follows.

8.2 DZ BANK organizes its Research and Economics Division as a confidentiality area and protects it against all other organizational units of DZ BANK and the DZ BANK Group by means of Chinese walls. The departments and teams of the Division that produce Financial Analyses are also protected by Chinese walls and by spatial separation, a closed doors and clean desk policy. Beyond the limits of these confidentiality areas, communication may only take place in both directions according to the need-to-know principle.

8.3 The Research and Economics Division does not disseminate Research Publications on issues of DZ BANK or on financial instruments issued by companies of the DZ BANK Group.

8.4 In principle, **employees of the Research and Economics Division and persons closely associated with them may not unrestrictedly invest in financial instruments covered by them in the form of Financial Analyses.** For commodities and currencies, DZ BANK has also defined an **upper limit based on the annual gross salary of each employee which, in the opinion of DZ BANK, also excludes the possibility of personal conflicts of interest among employees in the preparation of Other Research Information.**

8.5 Other theoretically feasible, information-based personal conflicts of interest among employees of the Research and Economics Division and persons

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closely associated with them are avoided in particular by the measures explained in **sub-paragraph 8.2** and the other measures described in the policy.

- 8.6** The remuneration of employees of the Research and Economics Division depends neither in whole nor in the variable part directly or materially on the earnings from investment banking, trade in financial instruments, other securities related services and / or trade in commodities, merchandise, currencies and / or on indices of DZ BANK or the companies of the DZ BANK Group.
- 8.7** DZ BANK and companies of the DZ BANK Group issue financial instruments for trading, hedging and other investment purposes which, as underlying instruments, may refer to financial instruments, commodities, merchandise, currencies, benchmarks, indices and / or other financial ratios also covered by DZ BANK Research. Respective conflicts of interest are primarily avoided in the Research and Economics Division by means of the aforementioned organizational measures.
- 8.8 Investment recommendations for the same financial instrument / issuer that have deviated in the last 12 months are stated in the respective current Financial Analysis together with the relevant investment recommendation category and date.**
- 8.9** The **quarterly information** on the share of the investment categories stated in **sub-paragraph 4.1** and **4.2** for **shares** and **fixed income instruments** in the total number of investment recommendations of DZ BANK and the **information** on the share of these categories relating to the issuers to whom DZ BANK has rendered services in the **past twelve months** in accordance with Appendix I Sections A and B of Directive 2014/65/EU, can be **read and downloaded free-of-charge** under **www.dzbank.com/disclosures**.
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10. FIXED INCOME RESEARCH: RECOMMENDATION CHANGES WITHIN THE LAST 12 MONTHS

ABN AMRO Bank	18.09.2019	Underperformer	Hochtief	09.09.2019	Outperformer	Unicredit	30.08.2019	Outperformer
Achmea Bank	02.12.2019	Underperformer	HSBC Holdings	18.09.2019	Marketperformer	Unicredit	03.06.2019	Underperformer
Adolf Würth GmbH & Co. KG	02.12.2019	Marketperformer	HYPO NOE	02.12.2019	Underperformer	Unilever N.V.	12.02.2020	Underperformer
Aegon	07.10.2019	Marketperformer	IBM	02.12.2019	Outperformer	Vattenfall	02.12.2019	Marketperformer
Ahold Delhaize	14.05.2020	Marketperformer	ING Groep	18.09.2019	Underperformer	Veolia Environnement	02.12.2019	Underperformer
AIB Group	13.12.2019	Marketperformer	Intesa Sanpaolo	26.02.2020	Marketperformer	Vodafone Group	14.06.2019	Marketperformer
AIB Group	18.09.2019	Underperformer	Intesa Sanpaolo	30.08.2019	Outperformer	Vonovia	12.05.2020	Outperformer
AIB Group	11.09.2019	Marketperformer	Intesa Sanpaolo	03.06.2019	Underperformer	Wells Fargo	02.12.2019	Marketperformer
Airbus	02.12.2019	Marketperformer	Italy	29.08.2019	Outperformer	Westpac Banking Corp.	18.09.2019	Marketperformer
Akzo Nobel	23.04.2020	Marketperformer	Italy	03.06.2019	Underperformer	Zurich Insurance Group	29.11.2019	Underperformer
Allianz	30.10.2019	Underperformer	JPMorgan Chase & Co.	17.04.2020	Outperformer			
America Movil	17.07.2019	Outperformer	JPMorgan Chase & Co.	18.09.2019	Marketperformer			
Amgen	28.11.2019	Marketperformer	JPMorgan Chase & Co.	25.06.2019	Outperformer			
Anheuser-Busch InBev	03.03.2020	Marketperformer	KBC Groep	18.09.2019	Underperformer			
Apple	04.02.2020	Outperformer	KBC Groep	25.06.2019	Outperformer			
AT&T	02.12.2019	Marketperformer	Koninklijke KPN	24.07.2019	Marketperformer			
Australia and New Zealand Banking Group	18.09.2019	Marketperformer	LafargeHolcim	07.04.2020	Outperformer			
Austria	29.08.2019	Underperformer	LafargeHolcim	06.03.2020	Marketperformer			
Austria	25.06.2019	Marketperformer	LafargeHolcim	27.02.2020	n.a.			
AXA	02.12.2019	Marketperformer	Landesb. Baden-Württemberg	02.12.2019	Underperformer			
Bank of America	23.04.2020	Outperformer	Landesbank Hessen-Thüringen	02.12.2019	Underperformer			
Bank of America	18.09.2019	Marketperformer	Linde PLC	08.05.2020	Marketperformer			
Bank of America	25.06.2019	Outperformer	Lloyds Banking Group	13.12.2019	Marketperformer			
Bank of Ireland Group	13.12.2019	Marketperformer	Lufthansa	24.04.2020	Underperformer			
Bank of Ireland Group	18.09.2019	Underperformer	Lufthansa	26.03.2020	Marketperformer			
Bank of Ireland Group	11.09.2019	Marketperformer	Lufthansa	24.02.2020	Underperformer			
Bank of Nova Scotia	02.12.2019	Underperformer	Merck KGaA	10.03.2020	Marketperformer			
Barclays PLC	13.12.2019	Marketperformer	Microsoft	24.02.2020	Outperformer			
BASF	26.03.2020	Marketperformer	Mondelez International	13.05.2020	Outperformer			
Bayerische Landesbank	02.12.2019	Marketperformer	Mondelez International	31.07.2019	Marketperformer			
BayWa	02.12.2019	Marketperformer	Munich Re	02.12.2019	Underperformer			
Belfius Bank	18.09.2019	Underperformer	National Australia Bank	18.09.2019	Marketperformer			
Belfius Bank	25.06.2019	Outperformer	Nationwide Building Society	13.12.2019	Marketperformer			
Belgium	19.11.2019	Marketperformer	Nationwide Building Society	22.11.2019	Underperformer			
Belgium	29.08.2019	Underperformer	Nestlé	02.12.2019	Marketperformer			
Belgium	25.06.2019	Outperformer	Netherlands	29.08.2019	Underperformer			
Berlin Hyp	25.06.2019	Marketperformer	Netherlands	25.06.2019	Marketperformer			
BNP Paribas	14.02.2020	Marketperformer	NORD/LB Girozentrale	02.12.2019	Marketperformer			
BP	09.03.2020	Underperformer	Nordea Bank Abp	18.09.2019	Underperformer			
BPCE	25.06.2019	Marketperformer	Nordea Bank Abp	25.06.2019	Outperformer			
BT Group	11.09.2019	Underperformer	Novartis	02.12.2019	Marketperformer			
Carrefour	29.10.2019	Marketperformer	Nykredit Realkredit	02.12.2019	Underperformer			
Carrefour	11.09.2019	Outperformer	OMV	09.03.2020	Marketperformer			
Carrefour	18.07.2019	Marketperformer	OMV	02.12.2019	Underperformer			
Carrefour	27.05.2019	Outperformer	OP Corporate Bank	18.09.2019	Underperformer			
Caterpillar	02.12.2019	Marketperformer	OP Corporate Bank	25.06.2019	Outperformer			
CEZ	27.03.2020	Outperformer	Orange	31.03.2020	Outperformer			
Citigroup	02.12.2019	Marketperformer	PepsiCo	20.02.2020	Marketperformer			
Commonwealth Bk of Australia	18.09.2019	Marketperformer	Petrobras	02.08.2019	Marketperformer			
Coöperatieve Rabobank UA	18.09.2019	Underperformer	Peugeot SA	30.10.2019	Marketperformer			
Coöperatieve Rabobank UA	25.06.2019	Outperformer	Pfizer	18.10.2019	Marketperformer			
Crédit Agricole	25.06.2019	Marketperformer	Portugal	25.06.2019	Marketperformer			
Crédit Mutuel Arkéa SACC	25.06.2019	Outperformer	Procter & Gamble	30.09.2019	Marketperformer			
Credit Suisse Group	18.09.2019	Underperformer	Renault	21.10.2019	Underperformer			
Credit Suisse Group	25.06.2019	Outperformer	Repsol	09.03.2020	Underperformer			
Danone	06.03.2020	Marketperformer	Repsol	20.11.2019	Marketperformer			
Danone	25.07.2019	Underperformer	Rio Tinto Ltd.	02.12.2019	Outperformer			
Danske Bank	28.11.2019	Underperformer	RLB Niederösterreich	02.12.2019	Marketperformer			
DekaBank	02.12.2019	Marketperformer	RLB Oberösterreich	23.10.2019	Marketperformer			
Deutsche Bank	08.07.2019	Outperformer	Robert Bosch GmbH	02.12.2019	Underperformer			
Deutsche Bank	25.06.2019	Marketperformer	Roche	11.02.2020	Marketperformer			
Deutsche Pfandbriefbank	25.06.2019	Marketperformer	Roche	02.12.2019	Outperformer			
De Volksbank	18.09.2019	Underperformer	Rolls-Royce Holdings	12.03.2020	Underperformer			
De Volksbank	25.06.2019	Outperformer	Royal Bank of Canada	02.12.2019	Underperformer			
Dexia Group	02.12.2019	Underperformer	Royal Bank of Scotland Group	13.12.2019	Marketperformer			
DNB Bank	18.09.2019	Underperformer	Royal Dutch Shell	29.11.2019	Marketperformer			
DNB Bank	25.06.2019	Outperformer	RWE	02.12.2019	Marketperformer			
E.ON	17.09.2019	Marketperformer	Saint-Gobain	01.10.2019	Marketperformer			
Enel	03.06.2019	Underperformer	Sanofi	02.12.2019	Marketperformer			
ENGIE	02.12.2019	Marketperformer	SBAB Bank	02.12.2019	Underperformer			
ENI	09.03.2020	Marketperformer	Schlumberger	09.03.2020	Underperformer			
ENI	03.06.2019	Underperformer	Schlumberger	28.01.2020	Marketperformer			
Equinor	26.09.2019	Marketperformer	SEB	18.09.2019	Underperformer			
Erste Group Bank	18.09.2019	Underperformer	SEB	25.06.2019	Outperformer			
EWE	02.12.2019	Marketperformer	Siemens	01.08.2019	Marketperformer			
Féd. des caisses Desjardins	02.12.2019	Marketperformer	Société Générale	18.09.2019	Marketperformer			
Finland	19.11.2019	Underperformer	Sparebank 1 SMN	02.12.2019	Underperformer			
Finland	25.06.2019	Marketperformer	Sparebank 1 SR-Bank	02.12.2019	Underperformer			
Ford Motor	19.02.2020	Underperformer	Sparebank 1 Østlandet	02.12.2019	Underperformer			
France	29.08.2019	Marketperformer	Sparebanken Vest	02.12.2019	Underperformer			
France	25.06.2019	Outperformer	Standard Chartered	02.12.2019	Marketperformer			
Fresenius SE & Co. KGaA	31.07.2019	Marketperformer	SUEZ	05.03.2020	Marketperformer			
General Electric	11.05.2020	Underperformer	Svenska Handelsbanken	18.09.2019	Underperformer			
General Electric	11.11.2019	Marketperformer	Svenska Handelsbanken	25.06.2019	Outperformer			
General Electric	16.08.2019	Underperformer	Swedbank	02.12.2019	Underperformer			
Gemany	29.08.2019	Underperformer	Swiss Re	13.11.2019	Underperformer			
Germany	25.06.2019	Marketperformer	Telenor	30.04.2020	Marketperformer			
GlaxoSmithKline	09.09.2019	Marketperformer	Telenor	07.04.2020	n.a.			
Goldman Sachs Group	25.06.2019	Marketperformer	Telia Company	02.12.2019	Underperformer			
Greece	29.08.2019	Outperformer	Telstra Corp	15.01.2020	Marketperformer			
Greece	25.06.2019	Marketperformer	The Kraft Heinz Company	27.03.2020	Underperformer			
GRENKE	03.09.2019	Marketperformer	thyssenkrupp	28.02.2020	Marketperformer			
Hamburg Commercial Bank	07.05.2020	Marketperformer	Total	09.03.2020	Outperformer			
Hamburg Commercial Bank	02.12.2019	Outperformer	Total	11.09.2019	Marketperformer			
Hannover Rück	21.11.2019	Underperformer	Toyota Motor	02.12.2019	Marketperformer			
HeidelbergCement	07.04.2020	Marketperformer	UBS Group	18.09.2019	Underperformer			
HeidelbergCement	21.01.2020	Outperformer	UBS Group	25.06.2019	Outperformer			
Henkel	02.12.2019	Underperformer	Unibail-Rodamco-Westfield	20.04.2020	Marketperformer			
Hochtief	23.01.2020	Marketperformer	Unicredit	26.02.2020	Marketperformer			

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