

# Government Bonds

A Research Publication by DZ BANK AG

## Methodology EMU Government Bonds Research

### BONDS

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The bonds of 11 issuers are covered as part of the analysis work of DZ BANK's Rates Markets Research for EMU Government Bonds. These issuers are **Belgium, Germany, Finland, France, Greece, Ireland, Italy, the Netherlands, Austria, Portugal and Spain**.

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

The analysis of these bonds from EMU states consists firstly of quantitative factors (total-return expectations, risk premium, fundamental and macroeconomic data) and secondly, of qualitative factors (specific features of a country, social developments, general policies, especially economic policies and credit trend). Both factors are brought together using the analysts' expert knowledge. This knowledge is based on the analysts' experience of handling quantitative and qualitative factors, of relevant markets, of the peer group and individual issuers covered by DZ BANK's EMU Government Bonds Research. The recommendation is the result of the combination of these two factors.

The remaining euro states, **Slovakia, Slovenia, Estonia, Malta, Cyprus, Latvia and Lithuania** are only analysed in the context of their impact on the 11 issuers we do cover. We do **not** issue an **investment recommendation** for these states.

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

## THEORETICAL BASIS

Our investment recommendations for EMU government bonds are based on our assessment of the future development of the total return on the entirety of the bonds of the respective issuer in relation to the market. Another specific element in the analysis is the risk premium or credit spread. Furthermore, we determine a credit trend as an outlook for the development of the agency ratings of an issuer.

### Total return

The total return of an EMU government bond consists of the change in the market price of the bonds and the interest earned (accrued interest). The change in the market price is determined by the change in the yield and risk premium (credit spread) and the roll-down effect.

### Risk premium or credit spread

For the purpose of a relative comparison of the issuers from the point of view of risks, we look at their spread in relation to the yield of less risky Bunds. Since Bunds currently have an AAA rating, they are regarded as largely risk-free by the capital market. The spread therefore expresses a risk premium in relation to a risk-free investment. In a wider sense, the risks premiums can be compared in terms of concept with the credit spreads in DZ BANK's credit research; the difference in this instance is that it is the Bund yields which are the risk-free value and not the swap rates. Essentially, however, the risk premiums in the case of EMU sovereign bonds also reflect a different default risk in relation to an issuer without default risk and they can therefore be described virtually as credit spreads. These credit spreads change over time on the back of market-led changes in the evaluation of the issuers. In the total-return analysis, the risk premium is reflected in the spread effect, but also in the roll-down.

### Credit trend

The credit trend is the analyst's visualized forecast for the development of an issuer's agency rating (projected change in direction of the simple average of the ratings of Moody's, Fitch and S&P for the following 12 months): "positive" and/or (▲) is assigned for projected upgrades, "negative" and/or (▼) is assigned for projected downgrades, "stable" and/or (→) is assigned if ratings are expected to remain unchanged. If none of the three above mentioned agencies has assigned a rating, no credit trend projection will be made for the relevant issuer.

## SUPERORDINATE FACTORS

In any analysis of individual bonds in EMU sovereign bond research, analysts have to factor in not only the issuer-specific aspects which we describe later on, but also wider aspects. These are factors of a general nature which can have an influence on an issuer's standing as a debtor and the investment recommendation to be derived. The analyst in charge of a specific issuer has to take these factors into consideration in the analysis of the respective issuer in order for DZ BANK Research's assessments and recommendations to be based on identical criteria and be consistent per se.

DZ BANK Research's economic forecasts are key parameters. Growth rates for GDP and its components, inflation rates, data on the global economy and similar figures can be important in assessing the issuer in question. DZ BANK Research's interest

rate forecast is another superordinate reference point for the analysis of individual securities and the recommendations derived from it. Political aspects of a global nature are a further aspect. Global political uncertainties, wars and conflicts can even have an influence on the assessment of third-party issuers which are not directly involved or on the recommendation derived from it.

In addition, new, wider regulatory requirements, monetary policy and sundry factors can also be relevant for the investment recommendation.

Likewise, it is important to bear in mind the market's general risk assessment. In the event of a general rise in risk-taking in the market, the credit spreads of bonds of all issuers tend to fall, and consequently, in such conditions the bonds of issuers with a poorer rating whose credit spreads are trading at a relatively higher level tend to offer the biggest gain from carry and any spread tightening. Conversely, a deterioration in general sentiment in the market and a rise in risk aversion tend to lead to a widening in the credit spreads of all bond issuers and, in such conditions, the bonds of better rated issuers, whose credit spreads are trading at relatively tight levels, offer the biggest carry gain and gain from a widening of credit spreads.

DZ BANK Research's fundamental and interest rate forecasts have to be taken into account by analysts in their analysis of the bonds of individual issuers. As part of this process, it is the responsibility of the respective analysts to assess the potential impact of central requirements on the object of their analysis.

## RELEVANT FACTORS IN THE ANALYSIS OF EMU STATES

The bonds of 11 issuers are covered as part of the analysis work of DZ BANK's Rates Markets Research for EMU Government bonds. These issuers are Belgium, Germany, France, Greece, Ireland, Italy, the Netherlands, Austria, Portugal and Spain ("EMU states"). We issue a recommendation for the entirety of the bonds of each respective issuer. We only look at the remaining euro states, namely Slovakia, Slovenia, Estonia, Malta, Cyprus, Latvia and Lithuania, but only in so far as they have any impact on the 11 issuers covered. We do not issue a recommendation for the bonds of these other EMU states.

Our analysis of the bonds of EMU states consists firstly of quantitative factors and secondly of qualitative factors. Both are combined through the expert knowledge of the respective analysts. This knowledge is based on the analysts' experience of the relevant markets, of the peer group covered by BANK EMU Government Bonds Research and of individual issuers. The result of this combination forms the investment recommendation. The respective depth of analysis depends to a large extent on what information the respective countries provide via corresponding authorities or what information can be obtained from third-party sources such as institutions or organisations.

### » Quantitative factors

DZ BANK's EMU Sovereign Credit Research initially forms a quantitative starting point for estimating an issuer's expected total return in the next six months. In addition, current market yield levels are combined with DZ BANK's interest rate forecast and enhanced with a spread component. This spread component is based on the regression of Bund yields and the relevant spreads of an EMU state.

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

Other quantitative factors are data of the kind which describes the credit-risk profile of an EMU state and the fundamental economic situation. Especially relevant in this instance are various debt ratios, together with a country's political plans and macroeconomic figures such as growth expectations.

#### » Qualitative factors

Each EMU state is subject to specific factors arising from social developments, general policies and especially economic policies, and which are perceived in a variety of ways by the market as regards the way in which they treat this information. This information which is in the public domain, comments and news are not quantifiable, but must nevertheless be reflected in the analysis based on the professional and methodical experience of the respective analyst (expert knowledge) for a full overall picture.

The analysts form their opinion of the future performance of the EMU state in question based on their own expertise in methodology and modelling of financial and economic theory, and above all on their experience of the way in which facts, information, rumours and expectations (their own, those of the consensus) impact in specific market conditions.

The analyst compares his opinion with the assessments of the established rating agencies Moody's, S&P and Fitch. The analyst derives the credit trend from a comparison between his own opinion and the agencies' assessments.

At the same time, the result of the analysis of the quantitative factors can be outweighed by qualitative factors as the primary starting point in view of the current market situation/state of the market, e.g. if uncertainty about a major political event is so great that fundamental data based on figures is ignored. Conversely, analysts can prefer quantitative factors if they arrive at this conclusion based on an assessment founded on their experience. Accordingly, how the analysts proceed will vary on a case-by-case basis and cannot be applied universally to each market situation. The analysts' professional experience and methodological knowledge about the workings of quantitative and qualitative information/factors in EMU states in various market situations are a crucial factor in the process of forming an opinion.

During the opinion-forming process of the analysis of EMU sovereign bonds, the analysts' individual opinion is compared with DZ BANK Research's current overall assessment and adjusted if necessary in an overall context. At the end, there should be a plausible forecast picture which fits in with the overall DZ BANK Research assessment and is generated using the entire wealth of experience of those involved in the process.

## RELEVANT FACTORS IN ASSIGNING INVESTMENT RECOMMENDATIONS

In Fixed Income Research, recommendations on individual issuers are split between "**outperformer**", "**underperformer**" and "**market performer**". A key factor for the investment recommendation on a particular issuer is whether, in the opinion of the

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

analyst, its bonds are likely to perform better than, worse than or in line with the bonds of similar issuers in the next six months. "Outperformer" means that the issuer's bonds are expected to do better than those of the peer group. "Underperformer" means that the bonds of an issuer are expected to perform worse than those of the peer group. "Market performer" means that the issuer's bonds should not differ significantly from the performance of bonds of the peer group according to the assessment of analysts.

The recommendation categories "outperformer", "underperformer" and "market performer" are based on the analysts' assessment of how the bonds of the issuer in question will perform in relation to those of the peer group. The peer group does not have to be defined exactly in this respect; it generally includes the issuers in the relevant market segment covered by DZ BANK Research.

Various total-return components are the yardstick used by analysts to judge to expected performance of bonds. The focus in this respect is on the performance of the credit spreads of the entirety of the bonds of the respective issuer. This credit spread can prove to be constant during the period under consideration; it can also rise or fall. Falling spreads would be positive for investors. If the premium charged for incurring the credit risk falls, then, all else being equal, the bonds of the issuer perform better than Bunds. Taking into account the performance of the entire peer-group investment universe, the analysts must then decide whether based on their assessment, the bonds of the issuer in question will perform better, the same or worse.

The decision in this respect is based on the analysts' assessment of the credit worthiness of the issuer in question, assuming it is relevant in the respective market phase. In general, whether an improvement or deterioration in the credit quality is forecast depends on whether the capital markets also expect it, or whether the realisation of their expectations would be a surprise for the majority of market participants. Further factors have an impact. It is important to bear in mind how the general economic trend, central bank policy, geopolitical risks and the behaviour of the capital markets will have an effect on the spreads of the issuer under consideration in the forthcoming months (see above).

The investment recommendation is therefore assigned on the basis of a combination of **fundamental analysis** and **relative-value analysis**. Investment recommendations are based not only on a total-return analysis but also on the credit-worthiness/fundamental analysis described above, which allows an approximate assessment of an issuer's default risk. However, DZ BANK Research does not work out a "fair" absolute credit spread level derived from fundamental data which is then used to issue a recommendation. Instead, the evaluation is done through a comparison of the risks identified by DZ BANK for the entirety of the bonds of the respective issuer with the risks of comparable bonds issued by other issuers, taking into account the respective credit spreads. **The recommendation is therefore a relative assessment**, in other words, the analysts must not only focus on the specific issuers they are concerned with, but also on the peer group.

## SOURCES: DATA, STUDIES, INFORMATION

As regards the sources of information which DZ BANK Research uses to form an opinion, a distinction is made between concrete and non-concrete origin. Information is taken from our technical sources.

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

**» Concrete sources of information**

As part of the ongoing analysis of all relevant issuers and instruments, there may be crucial changes in the relevant environment which can lead to an adjustment (which must comply with technical and methodological requirements) of expectations regarding the evolution of issuer profiles or of the market performance of relevant financial instruments in the coverage. In such an eventuality, there will be concrete information in the form of information available in the public domain from the media, freely accessible academic analyses, publicly known/discussed legislation plans, state budget plans, regulation measures, public communication from central banks or a rating agency and/or concrete calculations carried out by the analyst which has led to a crucial change in the expectation. This is also true of tactically/strategically-driven recommendations.

**» Non-concrete sources of information**

As part of the analysis coverage of EMU sovereign credits, analysts are constantly processing relevant information which determines the current direction of the market and factoring it into the way they form their opinion. As part of this process, the analysts have to take into account as yet unverified information just as much as the ongoing public discussion (political also) regarding the market trend and balance this with their own views of the market. In addition, they have to process the general information put forward by the media or statements from the political front and/or other bodies such as institutions or central banks or general, public reporting on geopolitics. In their permanent processing, analysts have to evaluate this information, discard it or take it on board in order to adjust their opinion or stick to it.

**» Technical sources of information**

From a technical point of view, the information systems from which our analysts draw their information are Bloomberg, Reuters, Datastream and other market information service providers, along with publicly accessible websites of country-specific offices, authorities, institutions and overarching organisations. In addition, various print media and TV reporting services are used.

## I. IMPRINT

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### 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](http://www.dzbank.com/disclosures).

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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](http://www.bafin.de)

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**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:

The terms "outperformer", "market performer" and "underperformer" are used in the assessment of individual issuers. These are relative estimates, i.e. they are independent of their respective peer groups and therefore independent of any overriding allocation recommendations for market segments (cf. mandatory disclosures on other research information).

The basis for the assessment is the expectation of the credit return/total return of an issuer's bonds - defined differently depending on the segment - over the next six months (cf. DZ BANK method studies at [www.dzbank.com/disclosures](http://www.dzbank.com/disclosures)). As a rule, the analyst's main scenario is assumed. In cases where an issuer is exposed to high idiosyncratic risks, alternative spread scenarios are also taken into account when calculating the expected credit turn/total return. Since issuers have generally issued a large number of bonds, the expected credit return/total return cannot naturally be quantified.

The expected credit return/total return is compared with the expected credit return/total return of a relevant peer group, usually the respective coverage/peer group. If it is significantly higher than that of the peer group, the assessment is **"outperformer"**. Normally, a higher weighting in the portfolio than in the benchmark should be applied here.

If the credit return/total return is significantly lower than that of the peer group, the assessment is **"underperformer"**. Normally, a lower portfolio weighting should be applied here than in the benchmark.

If the expected credit return/total return essentially corresponds to that of the peer group or if the risk profile includes strong fluctuations in both directions so that no active positioning against the benchmark should be taken, the assessment is **"market performer"**.

##### 1. Government bonds

The issuer-specific investment recommendation for government bonds of a country in the covered peer group is based on whether DZ BANK estimates that the performance resulting from the total return will be better, worse or similar to the peer group of the relevant segment in the following six months.

The basis for the assessment is the expectation of the total return of the issuer's bonds on the basis of national law in the coming six months (cf. DZ BANK method studies at [www.dzbank.com/disclosures](http://www.dzbank.com/disclosures)).

##### 2. Financials (senior unsecured)

The issuer-specific investment recommendation for an issuer's euro-denominated unsecured senior bonds relative to its peer group (iBoxx Banks Senior Index) is based on whether DZ BANK estimates that the performance resulting from the credit return will be better, worse or similar to the peer group in the following six months.

The basis for the assessment is the expected credit return on the issuer's bonds over the next six months (see DZ BANK methodological studies at [www.dzbank.com/disclosures](http://www.dzbank.com/disclosures)).

##### 3. Corporate Bonds (senior unsecured)

The issuer-specific investment recommendation for the euro-denominated unsecured senior bonds of an issuer relative to its peer group (sector/rating class) is based on whether DZ BANK estimates that the performance resulting from the credit return will be better, worse or similar to that of the peer group over the next six months.

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

The basis for the assessment is the expected credit return of the issuer's bonds over the next six months (see DZ BANK method studies at [www.dzbank.com/disclosures](http://www.dzbank.com/disclosures)).

#### 4. Covered Bonds

The investment recommendation for a covered bond programme of an issuer is based on DZ BANK's assessment as to whether the covered bonds can move better, worse or in step with bonds of comparable covered bond programmes in the following six months. The recommendation categories relate to covered bonds ("collateralised bank bonds" or "covered bonds") denominated in euros and apply only to the publication date.

The basis for the assessment is the expectation of the credit return of the bonds from an issuer's covered bond programme over the next six months (validity of the recommendation: one trading day) (cf. DZ BANK Methodologies at [www.dzbank.com/disclosures](http://www.dzbank.com/disclosures)).

- 4.3 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 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.

#### 5. Scheduled Updates and Validity Periods of Investment Recommendations

- 5.1** 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.
- 5.2** **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**.

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

##### Shares:

Fundamental analysis six months

##### Fixed income instruments:

Government bonds six months

Financials (senior unsecured) six months

Corporate Bonds (senior unsecured) six months

Covered Bonds one trading day

- 5.4 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

- 5.5** In a given case, updates of analyses may also be **temporarily suspended without prior announcement** on account of compliance with supervisory regulations.
- 5.6** 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.
- 6. 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](http://www.dzbank.com/disclosures).
- 7. Avoiding and Managing Conflicts of Interest**
- 7.1** 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](http://www.dzbank.com/disclosures) are summarized as follows.
- 7.2** 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.
- 7.3** 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.
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- 7.5** Other theoretically feasible, information-based personal conflicts of interest among employees of the Research and Economics Division and persons closely associated with them are avoided in particular by the measures explained in **sub-paragraph 7.2** and the other measures described in the policy.
- 7.6** 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.
- 7.7** 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.
- 7.8** **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.**
- 7.9** 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

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**7.10** The following definitions explain the potential conflicts of interest (so-called 'keys') of DZ BANK and / or the companies of the DZ BANK Group that must be stated in accordance with supervisory regulations in respect of the issuers and / or financial instruments analyzed in a Financial Analysis:

- 1) DZ BANK owns a **net long position** exceeding 0,5% of the total issued share capital of the issuer, calculated according to Article 3 of Regulation (EU) No. 236/2012 and Chapter III and IV of Commission Delegated Regulation (EU) No. 918/2012.
- 2) DZ BANK owns a **net short position** exceeding 0,5% of the total issued share capital of the issuer, calculated according to Article 3 of Regulation (EU) No. 236/2012 and Chapter III and IV of Commission Delegated Regulation (EU) No. 918/2012
- 3) DZ BANK or any of its affiliates beneficially **owns 1 % or more** of any class of common equity securities of the issuer.
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## 10. FIXED INCOME RESEARCH: RECOMMENDATION CHANGES WITHIN THE LAST 12 MONTHS

ABN AMRO Bank	18.09.2019	Underperformer	Goldman Sachs Group	25.06.2019	Marketperformer	Swedbank	02.12.2019	Underperformer
Achmea Bank	02.12.2019	Underperformer	Greece	29.08.2019	Outperformer	Swiss Re	13.11.2019	Underperformer
Adolf Würth GmbH & Co. KG	02.12.2019	Marketperformer	Greece	25.06.2019	Marketperformer	Telefónica	10.05.2019	Marketperformer
Aegon	07.10.2019	Marketperformer	GREENKE	03.09.2019	Marketperformer	Telefónica	27.02.2019	Outperformer
AIB Group	13.12.2019	Marketperformer	Hamburg Commercial Bank	02.12.2019	Outperformer	Telia Company	02.12.2019	Underperformer
AIB Group	18.09.2019	Underperformer	Hannover Rück	21.11.2019	Underperformer	Telstra Corp	15.01.2020	Marketperformer
AIB Group	11.09.2019	Marketperformer	HeidelbergCement	21.01.2020	Outperformer	Tesco	24.04.2019	Marketperformer
AIB Group	23.05.2019	Underperformer	Henkel	02.12.2019	Underperformer	Tesco	10.04.2019	Outperformer
AIB Group	07.05.2019	Marketperformer	Hochtief	23.01.2020	Marketperformer	thyssenkrupp	10.05.2019	Underperformer
Airbus	02.12.2019	Marketperformer	Hochtief	09.09.2019	Outperformer	Total	11.09.2019	Marketperformer
Akzo Nobel	24.04.2019	Underperformer	HSBC Holdings	18.09.2019	Marketperformer	Toyota Motor	02.12.2019	Marketperformer
Allianz	30.10.2019	Underperformer	HSBC Holdings	23.05.2019	Underperformer	Turkey	12.04.2019	NR
America Movil	17.07.2019	Outperformer	HSBC Holdings	03.05.2019	Marketperformer	UBS Group	18.09.2019	Underperformer
Amgen	28.11.2019	Marketperformer	Hungary	12.04.2019	NR	UBS Group	25.06.2019	Outperformer
Anglo American PLC	22.02.2019	Underperformer	HYPONOE	02.12.2019	Underperformer	Unicredit	30.08.2019	Outperformer
Apple	04.02.2020	Outperformer	Iberdrola	25.04.2019	Underperformer	Unicredit	03.06.2019	Underperformer
AT&T	02.12.2019	Marketperformer	IBM	02.12.2019	Outperformer	Unicredit	27.03.2019	Marketperformer
Australia and New Zealand Banking Group	18.09.2019	Marketperformer	Indonesia	12.04.2019	NR	Unilever N.V.	12.02.2020	Underperformer
Austria	29.08.2019	Underperformer	ING Groep	18.09.2019	Underperformer	Vale	09.04.2019	Outperformer
Austria	25.06.2019	Marketperformer	Intesa Sanpaolo	30.08.2019	Outperformer	Vattenfall	02.12.2019	Marketperformer
AXA	02.12.2019	Marketperformer	Intesa Sanpaolo	03.06.2019	Underperformer	Veolia Environnement	02.12.2019	Underperformer
Bank of America	18.09.2019	Marketperformer	Intesa Sanpaolo	27.03.2019	Marketperformer	Vodafone Group	14.06.2019	Marketperformer
Bank of America	25.06.2019	Outperformer	Israel	12.04.2019	NR	Vodafone Group	27.02.2019	Underperformer
Bank of Ireland Group	13.12.2019	Marketperformer	Italy	29.08.2019	Outperformer	Wells Fargo	02.12.2019	Marketperformer
Bank of Ireland Group	18.09.2019	Underperformer	Italy	03.06.2019	Underperformer	Westpac Banking Corp.	18.09.2019	Marketperformer
Bank of Ireland Group	11.09.2019	Marketperformer	Italy	27.03.2019	Marketperformer	Zurich Insurance Group	29.11.2019	Underperformer
Bank of Ireland Group	23.05.2019	Underperformer	JPMorgan Chase & Co.	18.09.2019	Marketperformer			
Bank of Ireland Group	08.05.2019	Marketperformer	JPMorgan Chase & Co.	25.06.2019	Outperformer			
Bank of Nova Scotia	02.12.2019	Underperformer	KBC Groep	18.09.2019	Underperformer			
Bardays PLC	13.12.2019	Marketperformer	KBC Groep	25.06.2019	Outperformer			
Bardays PLC	23.05.2019	Underperformer	Koninklijke KPN	24.07.2019	Marketperformer			
Bardays PLC	25.04.2019	Marketperformer	Landesb. Baden-Württemberg	02.12.2019	Underperformer			
BASF	27.02.2019	Underperformer	Landesbank Hessen-Thüringen	02.12.2019	Underperformer			
Bayerische Landesbank	02.12.2019	Marketperformer	Linde PLC	06.05.2019	Underperformer			
BayWa	02.12.2019	Marketperformer	Lloyds Banking Group	13.12.2019	Marketperformer			
BayWa	06.05.2019	NR	Lloyds Banking Group	23.05.2019	Underperformer			
Belfius Bank	18.09.2019	Underperformer	Lloyds Banking Group	02.05.2019	Marketperformer			
Belfius Bank	25.06.2019	Outperformer	Merck KGaA	28.02.2019	Underperformer			
Belgium	19.11.2019	Marketperformer	Mexico	12.04.2019	NR			
Belgium	29.08.2019	Underperformer	Mondelez International	31.07.2019	Marketperformer			
Belgium	25.06.2019	Outperformer	Munich Re	02.12.2019	Underperformer			
Berlin Hyp	25.06.2019	Marketperformer	National Australia Bank	18.09.2019	Marketperformer			
BNP Paribas	02.05.2019	Underperformer	Nationwide Building Society	13.12.2019	Marketperformer			
BPCE	25.06.2019	Marketperformer	Nationwide Building Society	22.11.2019	Underperformer			
Brazil	12.04.2019	NR	Nestlé	02.12.2019	Marketperformer			
BT Group	11.09.2019	Underperformer	Netherlands	29.08.2019	Underperformer			
Bulgaria	12.04.2019	NR	Netherlands	25.06.2019	Marketperformer			
Carrefour	29.10.2019	Marketperformer	NORD/LB Girozentrale	02.12.2019	Marketperformer			
Carrefour	11.09.2019	Outperformer	Nordea Bank Abp	18.09.2019	Underperformer			
Carrefour	18.07.2019	Marketperformer	Nordea Bank Abp	25.06.2019	Outperformer			
Carrefour	27.05.2019	Outperformer	Novartis	02.12.2019	Marketperformer			
Caterpillar	02.12.2019	Marketperformer	Nykredit Realkredit	02.12.2019	Underperformer			
Chile	12.04.2019	NR	OMV	02.12.2019	Underperformer			
Citigroup	02.12.2019	Marketperformer	OP Corporate Bank	18.09.2019	Underperformer			
Colombia	12.04.2019	NR	OP Corporate Bank	25.06.2019	Outperformer			
Commonwealth Bk of Australia	18.09.2019	Marketperformer	Orange	21.02.2019	Marketperformer			
Cooperatieve Rabobank UA	18.09.2019	Underperformer	Peru	12.04.2019	NR			
Cooperatieve Rabobank UA	25.06.2019	Outperformer	Petrobras	02.08.2019	Marketperformer			
Crédit Agricole	25.06.2019	Marketperformer	Peugeot SA	30.10.2019	Marketperformer			
Crédit Mutuel Arkéa SACC	25.06.2019	Outperformer	Pfizer	18.10.2019	Marketperformer			
Credit Suisse Group	18.09.2019	Underperformer	Philippines	12.04.2019	NR			
Credit Suisse Group	25.06.2019	Outperformer	Poland	12.04.2019	NR			
Croatia	12.04.2019	NR	Portugal	25.06.2019	Marketperformer			
Czech Republic	12.04.2019	NR	Procter & Gamble	30.09.2019	Marketperformer			
Danone	25.07.2019	Underperformer	Renault	21.10.2019	Underperformer			
Danske Bank	28.11.2019	Underperformer	Renault	15.02.2019	Marketperformer			
DekaBank	02.12.2019	Marketperformer	Repsol	20.11.2019	Marketperformer			
Deutsche Bahn	01.04.2019	Outperformer	Rio Tinto Ltd.	02.12.2019	Outperformer			
Deutsche Bank	08.07.2019	Outperformer	RLB Niederösterreich	02.12.2019	Marketperformer			
Deutsche Bank	25.06.2019	Marketperformer	RLB Oberösterreich	23.10.2019	Marketperformer			
Deutsche Pfandbriefbank	25.06.2019	Marketperformer	Robert Bosch GmbH	02.12.2019	Underperformer			
Deutsche Pfandbriefbank	13.05.2019	Outperformer	Roche	11.02.2020	Marketperformer			
De Volksbank	18.09.2019	Underperformer	Roche	02.12.2019	Outperformer			
De Volksbank	25.06.2019	Outperformer	Romania	12.04.2019	NR			
Dexia Group	02.12.2019	Underperformer	Romania	19.03.2019	Marketperformer			
DNB Bank	18.09.2019	Underperformer	Royal Bank of Canada	02.12.2019	Underperformer			
DNB Bank	25.06.2019	Outperformer	Royal Bank of Scotland Group	13.12.2019	Marketperformer			
E.ON	17.09.2019	Marketperformer	Royal Bank of Scotland Group	23.05.2019	Underperformer			
Enel	03.06.2019	Underperformer	Royal Bank of Scotland Group	26.04.2019	Marketperformer			
ENGIE	02.12.2019	Marketperformer	Royal Dutch Shell	29.11.2019	Marketperformer			
ENI	03.06.2019	Underperformer	Russia	12.04.2019	NR			
ENI	25.04.2019	Marketperformer	RWE	02.12.2019	Marketperformer			
ENI	15.02.2019	Outperformer	Saint-Gobain	01.10.2019	Marketperformer			
Equinor	26.09.2019	Marketperformer	Sanofi	02.12.2019	Marketperformer			
Erste Group Bank	18.09.2019	Underperformer	SBAB Bank	02.12.2019	Underperformer			
EWE	02.12.2019	Marketperformer	Schlumberger	28.01.2020	Marketperformer			
Féd. des caisses Desjardins	02.12.2019	Marketperformer	SEB	18.09.2019	Underperformer			
Finland	19.11.2019	Underperformer	SEB	25.06.2019	Outperformer			
Finland	25.06.2019	Marketperformer	Siemens	01.08.2019	Marketperformer			
France	29.08.2019	Marketperformer	Siemens	10.05.2019	Outperformer			
France	25.06.2019	Outperformer	Société Générale	18.09.2019	Marketperformer			
Fresenius SE & Co. KGaA	31.07.2019	Marketperformer	South Africa	12.04.2019	NR			
Fresenius SE & Co. KGaA	20.02.2019	Outperformer	Sparebank 1 SMN	02.12.2019	Underperformer			
General Electric	11.11.2019	Marketperformer	Sparebank 1 SR-Bank	02.12.2019	Underperformer			
General Electric	16.08.2019	Underperformer	Sparebank 1 Østlandet	02.12.2019	Underperformer			
General Electric	25.02.2019	Outperformer	Sparebanken Vest	02.12.2019	Underperformer			
Germany	29.08.2019	Underperformer	Standard Chartered	02.12.2019	Marketperformer			
Germany	25.06.2019	Marketperformer	Svenska Handelsbanken	18.09.2019	Underperformer			
GlaxoSmithKline	09.09.2019	Marketperformer	Svenska Handelsbanken	25.06.2019	Outperformer			

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