

Equity Analysis – Basic Principles

A Research Publication by DZ BANK AG

Equity analysis

RELEVANT FACTORS IN EQUITY ANALYSIS

Fundamental equity analysis attempts to calculate the fair value of listed companies and their shares and at the same to identify any overvaluation or undervaluation, as the case may be. It is based on business data and the economic environment in which a company operates. The analysis therefore factors in not only the listed company in question but also and in particular economic conditions and conditions in the sector in question.

Economic conditions

The macroeconomic conditions in the markets/regions in which the company in question operates play an important role for its prospects. Important factors include the interest-rate and money-supply policy of central banks, the economic performance in states and economic zones, the exchange rate, inflation, commodity prices, etc. DZ BANK AG Economics Research department produces analyses and forecasts for key economic metrics, and the bank's equity analysts are guided by these forecasts in so far as they are relevant for equity analysis.

Sector analysis

The sector analysis looks at economic conditions in the sector in which the company being evaluated operates. In order to be able to measure the attractiveness of a particular sector, analysts look closely at structural aspects and at the degree of the company's dependence of on how well the economy is doing.

An analysis of the sector structure and hence also of the competitive situation in that sector primarily takes in the following five components:

- Competitive intensity within the sector:** a high degree of competitive intensity is evident either in the form of competition in terms of products and services and/or in the form of price competition. Stiff competition has a fundamentally negative impact on a company's earnings prospects and hence also how attractive a sector is.
- Threat from new entrants:** the entry into the market of a new competitor generally means an increase in supply; this in turn leads to stiffer competition within the sector, which can lead to rising price pressure. The threat of a new player entering the market depends to a large extent on the height of market entry barriers. Market entry barriers can be in the form of economies of scale, state restrictions, product differentiation, high costs for a change of supplier, proprietary technologies, high investment costs, access to distribution channels, etc. The higher the market entry barriers, the more attractive the sector for the companies currently operating within it.

EQUITIES

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- **Threat of substitutes:** substitutes are products or services which meet similar customer needs. Substitutes set a limit on the prices which a sector can demand for its products/services. The easier it is for customers to be able to fall back on such substitutes, the more unattractive the sector. One example of this is the substitution of drugs with generics once the patent protection has expired.
- **Bargaining power of customers:** if a company's customers have a strong bargaining power, then they are generally in a position to demand lower prices or better quality at the same price. Accordingly, if customers have a strong bargaining power, it has a negative impact on a company's earnings prospects. A sector is therefore all the more attractive if customers have less bargaining power.
- **Bargaining power of suppliers:** strong bargaining power for suppliers is generally likely to lead to them either imposing higher prices or being able to supply poorer quality at the same price. This means that a strong bargaining power for suppliers has a negative impact on a company's earnings. A sector is therefore all the more attractive if suppliers have less bargaining power.

In the context of sector analysis, the economic trend in that specific sector is also factored in. Among other things, the degree of dependence on the macroeconomic performance can be worked out from a look at the past. Specific, so-called cyclical sectors tend to grow disproportionately during periods of economic upturn, while others do less well and others in turn have their own sector-specific cycles.

Company analysis

The aim of company analysis is to give a comprehensive picture of a specific company. The analysis in question includes qualitative and quantitative aspects.

Qualitative aspects include the company's strategy, product portfolio and management. A distinction can be made between company strategies, depending on whether or not the company in question is aiming for cost leadership, for differentiation or whether it aims to specialise in a market niche.

Companies which adopt a cost leadership strategy try to offer lower prices than rival companies by keeping their manufacturing costs as low as possible. Cost leadership is thereby achieved mainly by producing the biggest amount possible in order to achieve economies of scale and strict cost control.

If they opt for the concept of differentiation, companies aim to stand out from their rivals through performance advantages across their entire product/service range in order thereby to be able to realise higher prices as far as possible.

If opting for niche specialisation, companies concentrate on a specific sub-market or selected sub-markets in which they can have a competitive advantage against rival firms. In view of this competitive advantage within the sub-segment in question, companies are more likely to be able to demand a higher price from their customers.

The competition and company strategy form the basis for the detailed work involved in equity analysis. They are used as the basis for analysing past annual reports (balance sheets, profit and loss accounts, cash flow statements, etc.). In this manner, the analyst gains a picture of the quality of the company's reporting, of how it generates its profit and of the stability of the company's profitability, of its ability to invest from its own resources and to pay out dividends, etc. On this basis, the analyst then forecasts the company's future financial performance. In its analysis of German equities (DAX, MDAX etc.), DZ BANK generally uses an extensive proprietary forecast and analysis model. In its analysis of other European and American companies, it is generally guided by consensus forecasts available from financial-information systems such as Bloomberg, Reuters and FactSet. In each case, the forecasts are always intrinsically linked to the respective analyst's individual experience and assessment.

Under certain circumstances, the presentation of the company's historical performance and of the analyst's estimates for the future performance for research publications can deviate from the company's own reporting. In the preparation and presentation of the balance sheet, profit and loss account, etc., analysts must find a compromise between good comparability with the figures presented by the respective company and comparability with other companies.

In view of the complexity of company analysis, of the specific features pertaining to certain sectors (e.g. banks, insurance and property companies), capital market trends and political influence factors, the main focus of the analysis can vary widely from one sector to another and over time.

MAIN SOURCES

In drafting their research publications, DZ BANK AG's equity analysts only use sources of information which can be deemed to be reliable. However, they are not in a position to verify all the facts and other information taken from these sources personally. However, where DZ BANK equity analysts have any doubts about the reliability of a source or whether facts and other information are correct in an actual analysis, this is expressly noted in the research publication. Accordingly, DZ BANK does not give any guarantees or assurances as to the accuracy, completeness or correctness of the information or opinions included in the financial analyses.

Equity research analysts use freely accessible data and information. This includes data from the companies and from external data providers.

In addition, DZ BANK's equity research analysts have access to DZ BANK Research's micro and macroeconomic forecasts and studies. The analysts do not have access to information from other DZ BANK divisions. DZ BANK organises its Research and Economics division as a confidential area which is protected by Chinese Walls from other organisational units within DZ BANK and the DZ BANK Group. The departments and teams in the division which produces financial analyses are also protected by Chinese Walls, actual physical separations and by a closed door and clean desk policy. Beyond the boundaries of these confidentiality areas, communication in both directions is on a need-to-know basis only.

Major external sources of information for DZ BANK Equity Research publications are as follows:

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

- **Company information:** the historical figures in the integrated forecast and analysis models used are taken from the companies. Key sources of information include annual financial statements and management reports in annual reports, quarterly reports and securities prospectuses, ad-hoc press announcements, press releases and company presentations which corporations publish as part of their disclosure obligations or on a voluntary basis. Equity analysts have access to information which is already published and to other non-share-price-sensitive information in the context of company visits, road shows, conference calls and in talks with management and Investor Relations managers; they need this information to do their job as analysts in order to look in greater depth at aspects of the company's accounting and issues that are specific to the company or sector in question.
- **Information and data services:** DZ BANK's equity analysts have access to information from sources which include Bloomberg, Reuters and FactSet. The fee-based offer includes general stock-market data, charts and specific company and sector news.
- **Specialist information from the relevant sector:** information from sector associations, from trade fairs and specialist magazines.

Relevant sources of information for other DZ BANK Research units are mainly as follows:

- **Macroeconomic forecasts:** these include above all the GDP trend in the relevant regions and other key economic indicators.
- **Other forecasts:** important publications for equity research are forecasts and studies on the trend in interest rates, foreign currencies, oil and gas prices and other key commodities.

CALCULATING THE FAIR VALUE - VALUATION METHODS

Building on the estimates calculated for the company's financial performance, the fair value is calculated using various models to estimate the future share-price performance. For this, analysts can use a variety of valuation approaches and a combination of valuation methods (a so-called mixed measurement model). The respective DZ BANK analyst will decide which valuation method is appropriate for a specific company or a specific sector and in a specific situation.

- **DCF model:** the discounted cash flow analysis (DCF) involves calculating an absolute value for the company (share) by discounting expected free cash flows which analysts estimate for the future.
- **RoE/CoE model:** in the RoE/CoE model, a company's fair value is calculated by adding the intrinsic value (usually the book value) and the net present value of the company's expected future residual earnings. In this context, "residual earnings" means earnings generated by a company after accounting for the cost of capital.
- **IPO prices, acquisition prices:** the precedent transactions analysis method is used as an additional tool if, close to the time of the valuation, a similar company or parts of a company were sold off and the transaction price is in the public domain. This also applies to first listings as part of IPOs, capital increases or the reallocation of blocks of shares. Such transactions can be used as reference prices, taking any changes into account.
- **Sum-of-the-parts valuation:** in the case of the sum-of-the-parts valuation, the value of a company is derived from the value of individual company divisions, subsidiaries and holdings. The appropriate valuation method can be used for each separate part being valued. In addition, the individual segments are evaluated using their respective sector-specific valuation multiples. These should be adjusted with the help of premiums or discounts if there is any marked deviation between the growth rates or operating margins of the company being valued and those of its peers.
- **Multiples comparison:** peer-group comparisons are relative valuation approaches in which the multiples of one company are compared with those of similar companies, the peer group, in order to highlight any relative overvaluation or undervaluation. The multiples in question include mainly the price-earnings ratio (PER), the price-to-cash flow ratio (PCF), enterprise value to EBIT (EV/EBIT) and enterprise value to EBITDA (EV/EBITDA). If there is a suitable peer group for the company being valued, but there are differences in margins and growth rates, costs for non-operating group units and if the company is managed relatively better or worse, then a valuation premium or discount may also be appropriate.

Historical valuation: A multiples comparison based on estimates for the years relevant to the valuation can be enhanced by a comparison with historical figures for the relevant valuation multiples. This helps to show how a company is doing at present in relation to a mean and in relation to historical valuation highs and lows.

Calculation of a fair value: the analytical combination of these approaches (mixed measurement model), or the choice of a suitable valuation approach in a given situation gives a company's theoretical value (fair value) at the time of the financial analysis. Taking into account further relevant factors, especially the market situation in the stock market, gives an assessment of the likely future share-price performance.

Sector-specific factors: in the context of a multiples comparison, analysts sometimes use other multiples which are not mentioned above which take into account specific situations or specific sector features. In view of differences in business models, there are significant differences in accounting rules from one sector to another, such as manufacturing, property, media, banks and insurance. These differences have an impact among other things on the way in which the profit and loss account, cash flow statement and balance sheet are reported. These differences, which reflect sector-specific differences, also lead to multiples and profitability ratios that are specific to certain sectors, such as the combined ratio in the case of insurance companies, the cost-income ratio in the case of banks and the net asset value (NAV) in the case of real estate companies, which can be used in those individual sectors in addition to the valuation methods which are the general norm.

DEFINITION OF RECOMMENDATIONS

The valuation and calculation of the fair value leads to an investment recommendation:

The categories for the recommendation of equities in DZ BANK AG's financial analyses are defined as follows:

"Buy" means that the absolute rise expected in the share price in the next 12 months is greater than 10%.

"Sell" means that the absolute depreciation expected in the next 12 months is greater than 5%.

"Hold" means that the absolute change in share price expected in the next 12 months is between +10% and -5%.

I. IMPRINT

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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 Reports** (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 Reports** (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 Reports** (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 Report confirms that

- this Research Report 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 Report.

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 5%.

"Hold" means that the absolute *price* volatility expected in the next twelve months lies between +10% and -5%.

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.com/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.com/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.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

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

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.com/disclosures).

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.

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.

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.

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 twelve months

SSAs twelve months

Financials (senior unsecured) twelve months

Corporate Bonds (senior unsecured) twelve months

Covered Bonds one trading day

5.4 Evaluations of isolated aspects without investment recommendation

have the following validity periods:

Sustainability analyses:

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.

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 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 Reports on issues of DZ BANK or on financial instruments issued by companies of the DZ BANK Group.

7.4 **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.**

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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 be **read and downloaded free-of-charge** under **www.dzbank.com/disclosures**.
- 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.
 - 4) The issuer holds shares of DZ BANK exceeding 5 % of its total issued share capital.
 - 5) DZ BANK, any of its affiliates or a natural or legal person involved in the preparation of the investment recommendation acting under contract, is a **market maker, designated sponsor and / or liquidity provider** in financial instruments of the issuer at the time of publication of this research report.
 - 6) DZ BANK, any of its affiliates or a natural or legal person involved in the preparation of the investment recommendation acting under contract, has **managed or co-managed a private and / or publicly disclosed offering** of financial instruments of the issuer in the past 12 months.
 - 7) The issuer is or has been a **client** to DZ BANK regarding **investment banking services** over the 12-month period preceding the date of publication of this research report.
 - 8) DZ BANK or any of its affiliates received **compensation for investment banking services** from the issuer in the past 12 months.
 - 9) DZ BANK or any of its affiliates expects to receive or intends to seek **compensation for investment banking services** from the issuer in the next 3 months.
 - 10) The issuer is or has been a **client** to DZ BANK, to any of its affiliates or a natural or legal person involved in the production of the investment recommendation acting under contract regarding **securities-related services** as set out in Sections A and B of Annex I of Directive 2014/65/EU, which agreement has been in effect or has given rise to the obligation to pay or receive compensation during the 12-months period preceding the date of publication of this research report.

- 11) The issuer is or has been a **client** to DZ BANK regarding **non-securities services** over the 12-month period preceding the date of publication of this research report.
- 12) DZ BANK and / or any of its affiliates have been a party to an **agreement** with the issuer relating to the **preparation of investment recommendations** concerning financial Instruments issued by him.

8. Recipients and Use of Financial Analyses

8.1 Recipients

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