Genossenschaftliche FinanzGruppe
Volksbanken Raiffeisenbanken

December 31, 2020

# Regulatory risk report (Pillar 3) of the DZ BANK banking group

DZ BANK Gruppe

# Contents

Contents

# 1 Basis of regulatory risk reporting

## 1.1 Legal basis

The Basel Committee on Banking Supervision has created a global regulatory framework called Basel III setting out international standards for the capital adequacy and liquidity of banks. This framework was implemented into European law by Directive 2013/36/EU on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms (**Capital Requirements Directive IV, CRD IV**) and Regulation (EU) No. 575/2013 (**Capital Requirements Regulation, CRR**).

A **new capital requirements regulation** (**Capital Requirements Regulation II, CRR II**) came into force on June 27, 2019, introducing extensive changes to the Pillar 3 banking supervision disclosure requirements. At the same time, this means that the final version of Basel III has been implemented in European law. The first reporting date to which the new requirements apply is June 30, 2021.

Articles 431 to 455 (Part 8) CRR define the quantitative and qualitative requirements in respect of regulatory disclosure. The **Guidelines on disclosure requirements under Part 8 of Regulation (EU) No. 575/2013 (EBA/GL/2016/11)** published by the European Banking Authority (EBA) dated August 7, 2017, the **Guidelines on LCR disclosure to complement the disclosure of liquidity risk management under article 435 of Regulation (EU) No. 575/2013 (EBA/GL/2017/01)** dated June 21, 2017 and, since December 31, 2019, the **Guidelines on disclosure of non-performing and forborne exposures (EBA/GL/2018/10)** apply, along with the CRR and various implementing and regulatory standards applicable to disclosure.

The guidelines set out the CRR disclosure requirements in more detail by providing specific requirements and formats, in particular by stipulating the tables and templates to be used. **Circular 05/2015 (BA)** from the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) [German Federal Financial Supervisory Authority] dated June 8, 2015 also continues to apply in relation to implementation of the EBA's guidelines on the disclosure of the materiality of information, proprietary and confidential information, and on disclosure frequency (EBA/GL/2014/14 dated December 23, 2014). The requirements regarding the frequency of disclosure have also been increased due to EBA/GL/2016/11. These guidelines remain valid until the start of the full application of CRR II. Article 434a CRR II also mandates the EBA to develop standardized disclosure formats. The EBA submitted a draft for an Implementing Technical Standard (ITS) to the European Commission by June 28, 2020 (EBA/ITS/2020/04 dated June 24, 2020). The planned effective date for the ITS is June 28, 2021.

As the parent company (EU parent institution) of the DZ BANK banking group (pursuant to section 10a (1) of the German Banking Act (KWG) in conjunction with article 11 and article 18 CRR), DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main, (DZ BANK) has fulfilled its disclosure requirement (pursuant to article 436 (1) letter a CRR) by publishing this **regulatory risk report**, consolidated at banking group level, as at December 31, 2020.

This report focuses on the regulatory **requirements in the CRR regarding disclosure**.

As well as information on **risk management** and the **scope of application**, this report, which is based on the DZ BANK banking group, contains disclosures on the following:

– **Liquidity coverage ratio** (LCR)
– **Own funds** and **capital requirements**
– **Credit risk**, including **counterparty credit risk**

- **Securitizations**
- **Market risk**
- **Operational risk** and **reputational risk**
- Macroprudential regulatory measures, such as the **countercyclical capital buffer** and the **indicators of global systemic importance**
- **Leverage ratio**
- **Asset encumbrance** (AE)
- **Remuneration policy**
- **Non-performing loans** (NPLs)
- **Action in response to the COVID-19 crisis.**

A risk-weighted assets (RWA) flow statement for counterparty credit risk under the internal model method (IMM) is not included (table EU CCR7), as DZ BANK does not have an IMM for this risk.

The **country-by-country reporting** information pursuant to the disclosure requirements defined in section 26a (1) sentence 2 et seq. KWG is not contained in this report. The country-by-country reporting is disclosed separately on DZ BANK's website in the Investor Relations section under Reports.

The **disclosure of the return on assets** required by section 26a (1) sentence 4 KWG can be found in the 2020 Annual Financial Statements and Management Report of DZ BANK AG in the management report, chapter II 'Business report', section 4 'Net assets' (pages 24 to 26).

In the year under review, there was no intra-group financial support that would have had to be disclosed pursuant to **section 35 of the German Bank Recovery and Resolution Act (SAG)**.

In line with article 434 CRR, DZ BANK publishes the regulatory risk report on its website in the Investor Relations section under Reports, while the annexes on capital instruments can be found under Bondholder Information.

Fig. 1 shows the different sources to which reference is made in this regulatory risk report and where they are published.

FIG. 1 – REFERENCES IN THE REGULATORY RISK REPORT TO OTHER SOURCES

| Source | Publication medium |
|---|---|
| DZ BANK Annual Report | https://www.dzbank.com/content/dzbank_com/en/home/DZ_BANK/investor_relations/reports/2020.html |
| Annual Financial Statements and Management Report of DZ BANK AG | |
| Country-by-country reporting | |
| Results of the collection of data to identify global systemically important institutions | |
| Regulatory risk report, including the capital instruments annex | |
| Remuneration policy disclosures | |
| Full contractual terms and conditions for capital instruments, pursuant to article 437 (1) letter c CRR | https://www.dzbank.com/content/dzbank_com/en/home/DZ_BANK/investor_relations/bondholder_information.html |

There is no statutory requirement for the regulatory risk report to contain an independent auditor's report, so no such report is included.

## 1.2 Implementation in the DZ BANK banking group

This regulatory risk report comprehensively describes the risk profile of the DZ BANK banking group as at the reporting date by fulfilling all CRR disclosure requirements relevant to the banking group, while taking account of the principle of materiality pursuant to article 432 (1) CRR. The exemptions pursuant to article 432 (1) CRR are not used.

The DZ BANK banking group makes use of the option to refer to other reports. This report contains the information required by the CRR, provided it has not already been published in other media. Where this is the case, the regulatory risk report makes reference to those sources.

The basis for regulatory risk reporting is the **disclosure policy** approved by the Board of Managing Directors. This policy sets out the principles and fundamental decisions for the methods, organizational structure, and IT systems to be used for disclosure in the DZ BANK banking group. The disclosure policy also governs the integration of risk disclosure into general financial disclosure and provides the link to internal risk reporting. By adopting the policy, the Board of Managing Directors also established the key elements of the risk-related disclosure procedures and communicated them throughout the DZ BANK banking group. With this policy, DZ BANK has therefore implemented a formal process in which the operational steps – from preparing the report to obtaining the adoption of a resolution by the Board of Managing Directors and publishing the report – are defined, along with the required controls. This process also sets out all roles and responsibilities. The policy is audited regularly to assess whether it remains appropriate and is amended in line with changes to internal and external circumstances, thereby complying with the requirements of article 431 (3) CRR.

Section 2.2 (pages 19 to 22) on the governance of the DZ BANK Group in the 'DZ BANK Group Fundamentals' chapter of DZ BANK's 2020 Annual Report, in conjunction with sections 3.5.1 (pages 85 to 87), 3.5.2 (page 87), 3.5.4 (pages 88 and 89), and 3.6.6 (page 97) of the risk report of the DZ BANK Group and DZ BANK within the group management report of the Annual Report ('commercial-law risk report'), describes the **information flow** within the DZ BANK banking group to the management body pursuant to article 435 (2) letters d and e CRR and section 26a KWG.

The **frequency** and **scope** (article 433 CRR) of the regulatory risk report are determined by the indicators regarding frequency of disclosure that are listed in Title V of EBA/GL/2016/11. These assessment criteria include not only DZ BANK's classification as an other systemically important institution (O-SII) but also the DZ BANK Group's total assets and the consolidated exposures pursuant to article 429 CRR. As at the reporting date, DZ BANK was one of the three largest banks in Germany. The assessment found that the DZ BANK banking group was again obliged in 2020 to publish certain information in an interim report. Under CRR II too, DZ BANK is classified as a large institution as defined by article 4 (1) CRR II. This classification is also based on the criteria for classifying DZ BANK as an O-SII and on the total assets of the DZ BANK Group. CRR II specifies binding rules on the frequency and scope of disclosure that are based on the principle of proportionality. However, the updated disclosure requirements do not have to be implemented until the general application start date of June 28, 2021.

To ensure the necessary transparency for market participants, **comparative figures** as at previous reporting dates or relating to a previous period are disclosed in accordance with the requirements in EBA/GL/2016/11. Any significant changes – particularly to quantitative disclosures – between the reporting periods are explained.

Unless otherwise indicated, all information in this report relates to the entities consolidated for regulatory purposes in the **DZ BANK banking group** as at the reporting date pursuant to section 10a KWG in conjunction with articles 11 to 22 CRR and CRR II.

In accordance with article 13 (1) CRR II, **large subsidiaries** must disclose the information specified in article 437 CRR (own funds), article 438 CRR (capital requirements), article 440 CRR (capital buffers), article 442 CRR (credit risk adjustments and loss allowances), article 450 CRR (remuneration), article 451 CRR (leverage ratio), article 451a (liquidity requirements), and article 453 CRR (risk mitigation) on an individual basis or, where necessary, on a sub-consolidated basis. To identify and categorize subsidiaries as large, the criteria in article 4 CRR II are applied to those subsidiaries classified as a credit institution or investment firm under the CRR. The subsidiaries identified must comply with the requirements in article 13 CRR II unless they are covered by the **waiver** pursuant to article 7 CRR. The disclosures required for these subsidiaries on the basis of article 13 CRR II can be found in the regulatory risk reports on the websites of the subsidiaries in question. The additional disclosure requirements for large subsidiaries pursuant to article 13 (1) CRR II are presented in section 4.2.5 of this report.

In previous years, all of the significant subsidiaries published their own disclosure reports pursuant to article 13 CRR. Under the new rules in article 13 CRR II concerning disclosure requirements for subsidiaries, TeamBank, DVB, and DZ PRIVATBANK are exempt from publishing their own disclosure reports because they are not deemed to be large institutions. The disclosure requirements pursuant to article 13 CRR II have to be applied to BSH, which is categorized as large.

Pursuant to article 7 CRR, this disclosure requirement is waived for DZ HYP on an individual basis. For UMH and VR Smart Finanz, this disclosure requirement is waived on an individual basis in accordance with section 2 (7) KWG.

To calculate the **regulatory capital requirements** pursuant to the CRR, the DZ BANK banking group mainly applies the foundation internal ratings-based approach (IRB approach or IRBA) for credit risk.

The regulatory credit risk measurement methods used by DVB Bank SE, Frankfurt am Main, (DVB Bank; subgroup abbreviated to DVB) are based on the advanced IRB approach. The regulatory credit risk measurement methods used by DZ BANK AG Deutsche Zentral-Genossenschaftsbank, Frankfurt am Main, (DZ BANK), Bausparkasse Schwäbisch Hall AG, Schwäbisch Hall, (Bausparkasse Schwäbisch Hall; subgroup abbreviated to BSH), DZ HYP AG, Hamburg, (DZ HYP), TeamBank AG Nürnberg, Nuremberg, (TeamBank), and DZ PRIVATBANK S.A., Strassen, Luxembourg (DZ PRIVATBANK) are based on the foundation IRB approach. The IRB approach is used to calculate the credit risk of the retail businesses of BSH, DZ HYP, TeamBank, and DZ PRIVATBANK although the probability of default (PD) and the loss given default (LGD) are based on internal accounting estimates.

Capital requirements for market risk are predominantly measured using internal calculation models and, to a minor extent, the regulatory Standardized Approaches. The Standardized Approach is used at the DZ BANK banking group level to determine operational risk in accordance with regulatory requirements, while the individual institutions are responsible for their own calculations and reporting (as a rule the Standardized Approach, although the Basic Indicator Approach is possible in exceptional cases) in accordance with article 315 et seq. CRR.

Significant components of the **qualitative regulatory risk reporting requirements** are covered in the commercial-law risk report. The DZ BANK banking group predominantly utilizes the option available under article 434 (1) CRR to make reference to the commercial-law risk report for the qualitative disclosures. The section references for each topic are included in this report.

Disclosures that are solely of relevance for regulatory purposes are published in the regulatory risk report. This also applies to information that is fundamentally integral to the internal risk management system but, because of the detailed level of disclosure required, is not included in the commercial-law risk report so as not to impair the report's usefulness in the decision-making process. In particular, this concerns the detailed information on the internal rating systems and the disclosures about the risk models approved by the European Central Bank (ECB) for calculating the regulatory capital requirements for general and specific market risk. The same applies to the accounting-related disclosures on long-term equity investments and securitizations, which are also included in this regulatory risk report. As in the procedure adopted for qualitative disclosures, however, the quantitative disclosures required in regulatory risk reporting, which are derived from the internal risk management system, are included in the commercial-law risk report rather than in the regulatory risk report.

Unless indicated otherwise, the quantitative disclosures in this risk report are rounded to the nearest whole million euros. This may give rise to small discrepancies between the totals shown in the tables and diagrams and totals calculated from the individual values shown. Table cells with a dark gray background are not relevant for disclosure purposes. The symbol – is used to indicate that a line item in a table has no value. If a line item (after rounding) amounts to less than €1 million, a value of 0 is disclosed.

In its Pillar 3 reporting, DZ BANK aims to ensure the **consistency and comparability of disclosures** over time at the level of the DZ BANK banking group and to contribute to consistency and comparability across the industry. The quantitative disclosures in this report are therefore based, in particular, on the requirements in EBA/GL/2016/11. Some of them are still based on the table formats (referred to as 'use cases') recommended by the specialist disclosure subcommittee (as at September 2012) and the applicable (EU) implementing regulations in order to fully comply with the disclosure requirements of Part 8 CRR.

On June 24, 2020, the European Commission adopted a regulation amending the CRR in response to the COVID-19 pandemic (Regulation (EU) 2020/873) and published it in the EU's Official Journal on June 26, 2020. Given the urgency of the measures, the regulation took effect on the day after it was published in the Official Journal. The package of measures is also referred to as the CRR 'quick fix'. The main changes are as follows:

– Consideration of the various effects on own funds of applying IFRS 9
– Preferential treatment of non-performing loans under the NPL backstop, provided that they have a government or other public guarantee from an eligible protection provider with a risk weight of 0 percent in the Standardized Approach to credit risk (CRSA)
– Exclusion of central bank reserves from the total exposure measure for the leverage ratio and, at the same time, scaling up of the leverage ratio
– Early application of supporting factors for exposures to small and medium-sized enterprises and to certain infrastructure finance projects
– Possibility of disregarding, on a case-by-case basis, the overshooting of value-at-risk (VaR) levels by institutions using an internal model-based approach (IMA)
– Early application of the exemption from CET1 deductions for prudently valued software assets.

In general, all disclosure requirements pursuant to Part 8 CRR are met. The following requirements are currently **not relevant** to the DZ BANK banking group, and the corresponding data has therefore not been included in this regulatory risk report:

– Disclosure of the alpha factor pursuant to article 439 sentence 1 letter i CRR is not necessary since no internal DZ BANK banking group models approved by the supervisory authority were used in 2020 to calculate capital requirements for derivative counterparty risk exposure.
– The same applies to securitizations under the early amortization approach pursuant to article 449 sentence 1 letter n (iv) CRR. Such securitizations were not carried out by entities in the DZ BANK banking group during the reporting year, nor are they part of any existing business.
– In the case of risk in connection with fair value changes in the correlation trading portfolio (CTP, article 455 sentence 1 letter a (ii) CRR), no internal model approved by the supervisory authority is currently available, so the capital requirements for these exposures are calculated using the Standardized Approach.
– An RWA flow statement for counterparty credit risk under the internal model method (IMM) (table EU CCR7) is not included, as DZ BANK does not have an IMM for this risk.
– As the banking group's operational risks are calculated in accordance with the Standardized Approach, there are no disclosures about the use of Advanced Measurement Approaches for operational risk (article 454 CRR).
– International Financial Reporting Standard 9 (IFRS 9) came into effect on January 1, 2018. Since June 30, 2020, the DZ BANK banking group has been using the regulatory transitional provisions for the effects of initial application of IFRS 9 in accordance with the revised article 473a CRR (Regulation (EU) 2020/873) at institution level and group level.

## 1.3 Risks covered in the regulatory risk report

The regulatory risk report covers the risk types listed in section 1.1 for the subsidiaries that must be consolidated as part of the DZ BANK banking group for regulatory purposes in accordance with article 4 (1) no. 16 CRR and section 10a (4) and (5) KWG. Risks arising at subsidiaries that are not consolidated for regulatory purposes are disclosed in the commercial-law risk report at the DZ BANK Group level.

Regulatory capital requirements mainly relate to the following **risk types**: credit risk (including equity investment risk), market risk, and operational risk. In addition to these risk types, the technical risk of a home savings and loan company, actuarial risk, and business risk are also backed by economic risk capital as part of the internal economic capital management process (Pillar 2). The internal model for determining market risk in Pillar 2 is based on the internal model for calculating regulatory market risk. Liquidity risk is also taken into account in a separate liquidity-related analysis of risk-bearing capacity.

There are also **differences between economic and regulatory risk coverage**, in particular:

– When the **regulatory capital requirements** and the related disclosures **are being determined**, risk-bearing exposures are treated differently in terms of quantification of their risk depending on whether they are allocated to the trading book or banking book. For example, on-balance-sheet and off-balance-sheet exposures in the banking book and counterparty risk arising from derivatives exposure in the banking book and trading book are classified under credit risk. The issuer-related exposures in the trading book are treated as market risk exposures and are therefore backed with regulatory own funds, whereas they are treated as issuer risks and classified under credit risk for internal management purposes.

- As a result of this approach, the **credit risk exposures** presented in this risk report are based on regulatory bases of assessment and therefore differ from the lending volume presented in the commercial-law risk report, which is based on figures in the internal management accounts.
- Furthermore, **equity investment risk** is recognized as a separate type of risk in the internal management accounts. Credit risk and equity investment risk are determined in the internal management accounts using their own portfolio models.
- The **market risk** disclosed using the methods in Pillar 1 essentially corresponds to the market risk managed on the basis of the rules of Pillar 2. In the context of the economic management of market risk, interest-rate risk also includes interest-rate risk in the banking book for which no backing with own funds is required for regulatory purposes under Pillar 1.
- In the DZ BANK banking group, the Standardized Approach was used as at December 31, 2020 to calculate the regulatory own funds (as described in section 1.2 above) for **operational risk** in accordance with article 317 et seq. CRR. In respect of the economic capital requirements, however, a statistical model is used for the management units (see section 2.1 of the group management report, page 18) that satisfies the criteria for an Advanced Measurement Approach (AMA). The results from this portfolio model, combined with the materiality limits for collation of loss data, scenario-based risk self-assessments, and risk indicators, are used to manage operational risk.

## 1.4 Developments in relation to transparency rules in banking regulation

On October 16, 2019, the EBA published a consultation paper on the disclosure requirements pursuant to Titles II and III Part 8 CRR (EBA/CP/2019/09). The aim is to specify and formalize the requirements in CRR II and to aggregate the disclosure requirements – with a few exceptions – in one place. The deadline for submitting comments was January 16, 2020. The EBA presented the final draft of the Implementing Technical Standard (EBA/ITS/2020/04) for the disclosure requirements on June 24, 2020. The final draft of the ITS was submitted to the European Commission for adoption. The ITS will have to be applied with effect from June 28, 2021, at the same time as CRR II.

The EBA also published a consultation paper on the disclosure and reporting of TLAC and MREL on November 22, 2019 (EBA/CP/2019/14). The consultation period ended on February 22, 2020. The TLAC disclosure requirements will apply from when the ITS is adopted by the European Commission, so they will also have to be applied with effect from June 28, 2021. The MREL disclosure requirements will have to be applied with effect from January 1, 2024.

In November 2019, the Basel Committee published proposals for implementing the disclosure of market risk (BCBS 484) and sovereign exposures (BCBS 485) into European law and asked for feedback. The consultation phase for the two publications ended on February 14, 2020.

# 2 Risk management, objectives, and rules

## 2.1 Risk management objectives and policies

(ARTICLE 435 (1) CRR)

### 2.1.1 Principles and objectives of risk management

The principles and objectives of risk management and the methods used to manage risk are covered in the qualitative reporting, which – as stated in section 1.2 of this report – is based on the information in the commercial-law risk report. The governance structure of risk management in the DZ BANK Group is presented as a schematic diagram in figure 7 (page 86) in the commercial-law risk report. Supplementary disclosures relating to the DZ BANK Group and its management are described in chapter I 'DZ BANK Group fundamentals' (pages 10 to 17) in the group management report. The information required according to article 435 (2) CRR that is not presented in DZ BANK's 2020 Annual Report is set out in the following sections of this regulatory risk report.

FIG. 2 – DISCLOSURES IN THE REGULATORY RISK REPORT RELATING TO ARTICLE 435 (1) CRR

| | | This disclosure report | | Commercial-law risk report | |
|---|---|---|---|---|---|
| **Article** | **Subject** | **Section** | **Page** | **Section** | **Page** |
| Article 435 sentence 1 CRR | **Risk management objectives and policies for each individual risk category** | 1.2, 1.3, 2.1, 5.1, 6.1, 6.8.1, 8.1, 9, 10, 11.1 | 7 to 10, 10 to 11, 12 to 14, 59, 65, 148, 171, 183, 184, 185 | 3.1, 4.2.2, 5.1, 6.2, 7.2, 8.2, 9.2, 10.2, 11.1, 12.2 | 84, 98 and 99, 106 and 107, 119 and 120, 144 and 145, 146 and 147, 152, 153, 158, 159 |
| Article 435 sentence 1 letter a CRR | **Strategies and processes for the management of risk** | 2.1.3 | 13 to 14 | 3.3, 3.4, 3.5.2 | 85, 87 |
| Article 435 sentence 1 letter b CRR | **Description of the structure and organization of the risk management function, including information on its authority and status or other appropriate arrangements** | | | 3.5 | 85 to 93 |
| Article 435 sentence 1 letter c CRR | **Scope and nature of risk reporting and measurement systems** | | | 3.6 | 93 to 98 |
| Article 435 sentence 1 letter d CRR | **Guidelines for mitigating and hedging risk as well as strategies and procedures for monitoring the ongoing effectiveness of the measures taken to mitigate and hedge risk** | | | 3.6.5, 4.2.5, 5.2.2, 6.5.7, 7.4, 8.5.5, 9.4, 10.5, 11.4, 12.4.4 | 96 to 97, 100 to 101, 107, 127 to 129, 145, 149 to 150, 152 to 153, 157, 158, 161 |
| Article 435 sentence 1 letter e CRR | **Adequacy declarations to be made by the Board of Managing Directors** | 2.1.2 | 13 | | |
| Article 435 sentence 1 letter f CRR | **Risk statement to be made by the Board of Managing Directors** | 2.1.4 | 14 | | |

For the definitions of the individual risks, please see figure 4 (pages 76 and 77) and the relevant sections of the commercial-law risk report.

### 2.1.2 Adequacy declarations to be made by the Board of Managing Directors
(ARTICLE 435 (1) LETTER E CRR)

The Board of Managing Directors of DZ BANK considers that the risk management system in place is adequate with regard to the risk profile and risk strategy of the DZ BANK Group. DZ BANK continuously develops the risk management system and ensures that any identified need for improvement is addressed systematically without delay.

### 2.1.3 Strategies and processes for the management of risk in the context of stress tests
(ARTICLE 435 (1) LETTER A CRR)

The DZ BANK Group regularly conducts stress tests comprising scenarios for internal capital and risk management (internal capital adequacy assessment process, ICAAP), liquidity management (internal liquidity adequacy assessment process, ILAAP), and the planning for capital, funding, and the balance sheet. Stress tests are also carried out as part of bank recovery and resolution planning. In addition, the DZ BANK Group participates in stress tests organized by the supervisory authorities, such as those of the EBA and ECB.

The aforementioned ICAAP stress tests are broken down into the groupwide stress tests for adverse stress scenarios, reverse stress tests, risk-type-specific stress tests, ad hoc stress tests, and the stress tests at the level of the management units (DZ BANK AG and the material subsidiaries).

In-depth discussions on the results of the stress tests are held regularly by DZ BANK's various steering committees, providing vital management input. Potential management action may consist of both business planning and liquidity- and capital-related measures. The regular tests of whether the stress tests are appropriate are generally integrated by means of the various scenarios.

The aforementioned stress tests cover all of the relevant portfolios within the risk types that are examined.

The DZ BANK Group publishes detailed information on the strategy and processes for managing the risks in accordance with article 435 (1) letter a CRR in the commercial-law risk report. This information can be found in the sections of the 2020 commercial-law risk report indicated below.

**General information on stress testing**

Section 3.6.3 'Stress tests' and section 3.6.6 'Risk reporting and risk manual'

**Information on risk management in respect of liquidity adequacy**

Section 4.2.5 'Risk management' in conjunction with section 4.2.2 'Business background and risk strategy'

**Information on risk management in respect of capital adequacy**

Section 5.4 'Stress tests for types of risk covered by capital' in conjunction with section 8.5.3 'Backtesting and stress tests'

The aforementioned information also applies to the performance of ad hoc stress tests and the stress tests carried out as part of bank recovery and resolution planning. The methods and processes for the ICAAP stress tests are also used for the stress tests organized by the supervisory authorities, taking account of the different requirements imposed by the supervisory authorities. Because of their public nature, and the possible implications for the Supervisory Review and Evaluation Process (SREP), the EBA/ECB stress tests are a particularly effective management instrument.

### 2.1.4 Risk statement to be made by the Board of Managing Directors

(ARTICLE 435 (1) LETTER F CRR)

The requirements regarding a concise risk statement approved by the management body pursuant to article 435 (1) letter f CRR are met by means of the information provided in the 2020 commercial-law risk report within the 2020 Annual Report and the approval of the 2020 Annual Report by the Board of Managing Directors. Furthermore, no material intra-group transactions were carried out in the DZ BANK Group in 2020.

| **Requirements in article 435 (1) letter f CRR** | **Reference to the commercial-law risk report** |
|---|---|
| Risk profile of the DZ BANK Group | Formation of the risk profile based on the DZ BANK Group's business model (section 2.5 in conjunction with figure 4) |
| Risks in the DZ BANK Group's business model and disclosure of the risks | Features of managed risks (section 2.2, incl. figure 4 therein)<br>Disclosure of the risks (sections 6 to 12) |
| Interaction between the risk profile and risk tolerance | Explanation of the risk strategy (section 3.3) and risk appetite (section 3.4) and the interaction between the risk profile and risk appetite in respect of liquidity adequacy (section 4) and in respect of capital adequacy (section 5, incl. figure 14 therein for limits by risk type)<br>Risk-related KPIs, incl. internal minimum targets (section 2.5) |
| Key figures and disclosures | Risk management system (section 2.1)<br>Risk-related KPIs (section 2.5)<br>Regulatory capital ratios (sections 5.3.1 and 5.3.3)<br>Leverage ratio (section 5.3.3)<br>Liquidity adequacy (section 2.5 in conjunction with section 4)<br>Capital adequacy (section 2.5 in conjunction with section 5, incl. figure 14 therein for limits by risk type) |

## 2.2 Corporate governance arrangements

### 2.2.1 Number of executive or supervisory directorships held by members of the management body

(ARTICLE 435 (2) LETTERS A AND B CRR)

Fig. 3 to Fig. 5 provide an overview of the number of executive or supervisory directorships held by members of the Board of Managing Directors and Supervisory Board, counted in accordance with article 91 (3) and (4) CRD IV.

FIG. 3 – NUMBER OF EXECUTIVE OR SUPERVISORY DIRECTORSHIPS HELD BY MEMBERS OF THE BOARD OF MANAGING DIRECTORS

| | **Number of executive directorships** | | **Number of supervisory directorships** | |
|---|---|---|---|---|
| | **Dec. 31, 2020**[1] | Dec. 31, 2019 | **Dec. 31, 2020**[1] | Dec. 31, 2019 |
| Uwe Fröhlich<br>Co-Chief Executive Officer | 1 | 1 | 1 | 1 |
| Dr. Cornelius Riese<br>Co-Chief Executive Officer | 1 | 1 | 1 | 1 |
| Uwe Berghaus | 1 | 1 | 2 | 2 |
| Dr. Christian Brauckmann | 1 | 1 | 2 | 2 |
| Ulrike Brouzi | 1 | 1 | 2 | 2 |
| Wolfgang Köhler | 1 | 1 | 2 | 2 |
| Michael Speth | 1 | 1 | 2 | 2 |
| Thomas Ullrich | 1 | 1 | 2 | 2 |

[1] Disclosure of directorships pursuant to article 91 (3) to (5) of Directive 2013/36/EU.

FIG. 4 – NUMBER OF EXECUTIVE OR SUPERVISORY DIRECTORSHIPS HELD BY MEMBERS OF THE BOARD OF MANAGING DIRECTORS

| | Number of executive directorships | Number of supervisory directorships |
|---|---|---|
| | 2021[1] | |
| Uwe Fröhlich<br>Co-Chief Executive Officer | 1 | 1 |
| Dr. Cornelius Riese<br>Co-Chief Executive Officer | 1 | 1 |
| Uwe Berghaus | 1 | 2 |
| Dr. Christian Brauckmann | 1 | 2 |
| Ulrike Brouzi | 1 | 2 |
| Wolfgang Köhler | 1 | 2 |
| Michael Speth | 1 | 2 |
| Thomas Ullrich | 1 | 2 |

1 Disclosure of directorships pursuant to article 91 (3) to (5) of Directive 2013/36/EU.

FIG. 5 – NUMBER OF EXECUTIVE OR SUPERVISORY DIRECTORSHIPS HELD BY MEMBERS OF THE SUPERVISORY BOARD[1]

| | Number of executive directorships | | Number of supervisory directorships | |
|---|---|---|---|---|
| | Dec. 31, 2020[1] | Dec. 31, 2019[1] | Dec. 31, 2020[1] | Dec. 31, 2019[1] |
| Henning Deneke-Jöhrens[2] | 1 | 1 | 1 | 1 |
| Ulrich Birkenstock[3] | — | — | 1 | 1 |
| Martin Eul[3] | 1 | 1 | 2 | 2 |
| Heiner Beckmann | — | — | 1 | 1 |
| Timm Häberle | 1 | 1 | 1 | 1 |
| Dr. Peter Hanker | 1 | 1 | 1 | 1 |
| Andrea Hartmann | — | — | 1 | 1 |
| Pilar Herrero Lerma | — | — | 1 | 1 |
| Dr. Dierk Hirschel | — | — | 2 | 2 |
| Marija Kolak | — | — | 3 | 3 |
| Renate Mack | — | — | 1 | 1 |
| Rainer Mangels | — | — | 1 | 1 |
| Sascha Monschauer[4] | 1 | — | 1 | — |
| Rolf Dieter Pogacar[4] | — | — | 1 | — |
| Stephan Schack | 1 | 1 | 1 | 1 |
| Gregor Scheller | 1 | 1 | 1 | 1 |
| Uwe Spitzbarth | — | — | 2 | 2 |
| Sigrid Stenzel | — | — | 2 | 1 |
| Ingo Stockhausen | 1 | 1 | 1 | 1 |
| Dr. Wolfgang Thomasberger | 1 | 1 | 1 | 1 |

1 As a significant institution, DZ BANK calculated the number of executive or supervisory directorships held by members of the Supervisory Board in 2019 and 2020 in accordance with clause 57 sentences 1 and 2 of EBA/GL/2016/11 in conjunction with article 91 (3) to (5) of Directive 2013/36/EU.
2 Chairman of the Supervisory Board.
3 Deputy Chairman.
4 Member of the Supervisory Board since May 27, 2020.

### 2.2.2 Recruitment policy for the selection of members of the management body and their actual knowledge, skills and expertise

(ARTICLE 435 (2) LETTER B CRR)

#### 2.2.2.1 Supervisory Board

The Articles of Association of DZ BANK state that the Supervisory Board consists of 20 members, nine of whom are elected by the Annual General Meeting and ten of whom are elected by employees pursuant to the provisions of the 1976 German Codetermination Act (MitbestG). The Bundesverband der Deutschen Volksbanken und Raiffeisenbanken e.V., Berlin, (BVR) [National Association of German Cooperative Banks], has the right to delegate one member of its Board of Managing Directors to the Supervisory Board. Only members of the managing body of a cooperative enterprise that is a shareholder of DZ BANK may be elected as shareholder representatives on the Supervisory Board. The term of appointment of a Supervisory Board member is terminated prematurely

a) at the end of the next ordinary Annual General Meeting if the member no longer meets the above requirements, or
b) at the end of the ordinary Annual General Meeting in the calendar year in which the member reaches the age of 67.

In accordance with section 25d (11) sentence 2 no. 1 KWG, the Supervisory Board has adopted a process for preparing nominations for the election of members of the DZ BANK Supervisory Board that includes job descriptions and candidate profiles. This process is regularly put into practice when new Supervisory Board members are nominated.

In accordance with section 25d (11) sentence 2 nos. 3 and 4 KWG, a process has also been implemented by the Supervisory Board for regularly evaluating the Supervisory Board and its members. The self-evaluation conducted by the Supervisory Board in February 2021 found that the structure, size, composition, and performance of the Supervisory Board and the knowledge, skills, and experience of the individual Supervisory Board members and the Supervisory Board as a whole fulfilled the requirements laid down by law and in the Articles of Association. The Supervisory Board therefore confirmed the individual suitability of the individual members of the Supervisory Board and the collective suitability of the Supervisory Board as a whole. The Supervisory Board also signed off the profile of skills and expertise for the Supervisory Board.

DZ BANK also offers training opportunities to the members of the Supervisory Board, regardless of the period of time that they have been board members. This includes running inhouse training courses and covering the cost of supervisory board-related training programs offered by external providers.

Mr. Martin Eul, Mr. Gregor Scheller, and Dr. Wolfgang Thomasberger are stepping down from the Supervisory Board in 2021. Mr. Uwe Barth, Mr. Josef Hodrus, and Dr. Gerhard Willy Walther have been nominated as their successors on the Supervisory Board. Elections for the employees' councils will also be held in the DZ BANK Group this year, which means that there is likely to be at least one other personnel change in 2021 in addition to the new employee representative who joined in 2020 following the appointment by the courts of the employee representatives on the Supervisory Board.

#### 2.2.2.2 Board of Managing Directors

The Articles of Association of DZ BANK state that the Board of Managing Directors consists of at least three members. The number of members is determined by the Supervisory Board, which also appoints and removes members. The Supervisory Board can appoint up to two Chief Executive Officers and one Deputy Chief Executive Officer. As at the reporting date, the Board of Managing Directors of DZ BANK consisted of eight full members of the Board of Managing Directors including two Chief Executive Officers. Detailed career histories of the members of the Board of Managing Directors are presented on the DZ BANK website.

Only persons who have the professional qualifications specified in section 25c KWG and comply with other regulatory and stock corporation law requirements can be appointed to the Board of Managing Directors. In accordance with the rules of procedure for the Supervisory Board, the Nominations Committee assists the Supervisory Board in determining suitable candidates for appointment to the Board of Managing Directors. For this purpose, the Supervisory Board has approved principles for the selection and appointment of managing directors, including job descriptions and candidate profiles as required by section 25d (11) sentence 2 nos. 1 and 2 KWG. When selecting suitable candidates, the Nominations Committee takes into account the balance and diversity of the knowledge, skills, and experience of all the members of the Board of Managing Directors.

In accordance with section 25d (11) sentence 2 nos. 3 and 4 KWG, a process has also been implemented for regularly evaluating the Board of Managing Directors as a whole. The evaluation conducted by the Supervisory Board in February 2021 found that the structure, size, composition, and performance of the Board of Managing Directors, and the knowledge, skills, and experience of the individual members and the Board of Managing Directors as a whole fulfilled the requirements laid down by law and in the Articles of Association. The Supervisory Board therefore confirmed the individual suitability of the individual members of the Board of Managing Directors and the collective suitability of the Board of Managing Directors as a whole.

DZ BANK also offers various training courses to the members of the Board of Managing Directors, regardless of the period of time that they have been board members. For example, they can undertake training through DZ BANK's Corporate Campus for Management & Strategy. This is an interactive platform with the objective of facilitating the development of new perspectives and ideas at top-management level, thereby reinforcing the sustainability of the DZ BANK Group and the Volksbanken Raiffeisenbanken cooperative financial network.

#### 2.2.3 Diversity policy for selecting members of the management body, objectives and targets of the policy, and achievement

(ARTICLE 435 (2) LETTER C CRR)

##### 2.2.3.1 Supervisory Board

In accordance with section 25d (11) sentence 2 no. 2 KWG, the Supervisory Board has adopted a strategy aimed at promoting the nomination of women, who are currently under-represented on the DZ BANK Supervisory Board. In a resolution passed on November 29, 2018, the Supervisory Board modified this strategy and reset the target. Under this strategy, the Supervisory Board's objective is, by 2023, to at least stabilize the proportion of female members (who are currently under-represented) at the current level (on the date of the adopted resolution and as at December 31, 2020: five members or 25 percent). This quota was met throughout 2020.

##### 2.2.3.2 Board of Managing Directors

In a resolution passed on November 29, 2018, the Supervisory Board set a target of 12.5 percent for the proportion of women (who are currently under-represented) on the Board of Managing Directors of DZ BANK for the period up to October 31, 2023. This quota was met throughout 2020.

### 2.3 Disclosures regarding the formation of a risk committee and the number of times it has met

(ARTICLE 435 (2) LETTER D CRR)

The DZ BANK banking group has formed a separate Risk Committee, which met five times in 2020.

### 2.4 Information flow to the Board of Managing Directors and Supervisory Board

(ARTICLE 435 (2) LETTER E CRR)

The disclosures required pursuant to article 435 (2) letter e CRR are published in the 'Report of the Supervisory Board' (pages 420 to 427) in the 2020 Annual Report.

Pursuant to article 435 (2) letter e CRR, the information flow to the Board of Managing Directors is generally presented in the commercial-law risk report, section 3.5.1 (pages 85 to 87) 'Governance structure', section 3.5.2

(page 87) ‘Risk control’, section 3.5.4 (pages 88 and 89) ‘Compliance’, and section 3.6.6 (page 97) ‘Risk reporting and risk manual’. Within the commercial-law risk report, the information flow regarding capital adequacy is described in section 5.1 (pages 106 to 107) ‘Strategy, organization, and responsibility’, regarding liquidity management in section 4.3.2 (page 105) ‘Organization, responsibility, and reporting’, regarding stress tests for types of risk covered by capital in section 5.4 (pages 117 to 118), regarding credit risk in section 6.4 (page 121) ‘Organization, responsibility, and reporting’ and section 6.5.5 (pages 125 to 126) ‘Management of credit exposure in trading transactions’, regarding equity investment risk in section 7.2 (pages 144 and 145) ‘Risk strategy, responsibility, and reporting’, regarding market risk in section 8.4 (pages 147 and 148) ‘Organization, responsibility, and reporting’, regarding the technical risk of a home savings and loan company in section 9.4 (pages 152 and 153) ‘Responsibility, reporting, and risk management’, regarding business risk in section 10.4 (page 157) ‘Organization, responsibility, and reporting’, regarding reputational risk in section 11.4 (page 158) ‘Responsibility and risk management’, and regarding operational risk in section 12.3 (pages 159 and 160) ‘Organization, responsibility, and reporting’.

# 3 Scope of application

## 3.1 Definitions and determination of materiality

In the reporting, a disclosure is material if its omission or misstatement could change or influence the assessment or decision of a user who is relying on this disclosure to make economic decisions (use test).

The use test for regulatory risk reporting is enshrined in article 432 CRR, which sets out the information that does not have to be disclosed if it is not regarded as material pursuant to article 432 (1) CRR. However, this explicitly does not apply to the disclosures required pursuant to article 435 (2) letter c (diversity policy for members of the management body), article 437 (own funds), and article 450 (remuneration policy) CRR and the disclosures required pursuant to Part 8 Title III CRR that are not at the discretion of the individual institution. The disclosures in this risk report relate to all entities that are consolidated for regulatory purposes pursuant to article 432 (1) CRR. All entities consolidated for regulatory purposes are included in these disclosures to ensure that the key regulatory figures are consistent with the figures reported. The quantitative information presented (apart from the exceptions referred to above) relates to the significant entities in the DZ BANK banking group.

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

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

As part of the DZ BANK financial conglomerate, the DZ BANK banking group and the R+V Versicherung AG insurance group are subject to the provisions of the German Supervision of Financial Conglomerates Act (FKAG). In conjunction with article 49 (1) CRR on the requirements for waiving capital deductions for long-term equity investments in insurance companies and the regulatory technical standards for the application of the calculation methods of capital adequacy requirements for financial conglomerates (Delegated Regulation (EU) No. 342/2014 dated January 21, 2014) published in April 2014, the FKAG governs the capital adequacy requirements for the DZ BANK financial conglomerate. The additional regulation of financial conglomerates applies to groups of financial institutions that operate to a large degree across both the banking and the insurance sectors and includes requirements for capital adequacy, for recording and monitoring material risk concentrations and transactions within the conglomerate, and for cross-sectoral risk management. In this regard, it has to meet the relevant requirements with respect to **financial conglomerates' solvency** and the establishment of an overarching risk management structure.

All subsidiaries in the financial conglomerate are integrated into the DZ BANK Group's centralized risk management system. All subsidiaries that are consolidated for regulatory purposes are included in this report, subject to the principle of materiality pursuant to article 432 (1) CRR. Materiality is determined on the basis of the materiality concept that is used in the commercial-law risk report. The risk types and risk capital requirements that are measured in the DZ BANK Group, combined with the limits set for the risk and buffer capital amounts by the individual management units, are used to determine materiality.

## 3.2 Differences between the scope of consolidation for accounting purposes and the scope of consolidation for regulatory purposes

(ARTICLE 436 SENTENCE 1 LETTER B CRR)

The entities in which DZ BANK has a direct or indirect long-term equity investment are aggregated and consolidated both for financial reporting purposes and in order to satisfy regulatory requirements. The commercial-law provisions to be applied for consolidation in accordance with IFRS differ in some regards from the provisions applicable to consolidation for regulatory purposes, in terms of both the consolidation methods used and the entities to be included. The consolidation matrix below (Fig. 6) shows the entities that are significant for internal risk management purposes and the companies that are consolidated for regulatory purposes. It is limited to the consolidated subgroup parent companies and other entities. As required by EBA/GL/2016/11 (updated on July 6, 2017), the description in column f of the matrix classifies the entities according to the nature of their business and based on the definitions in article 4 CRR. The entities are also categorized according to the nature of their treatment for regulatory purposes (columns b to e) and the nature of their consolidation for commercial-law purposes (column a).

FIG. 6 – EU LI3 – DIFFERENCES IN THE SCOPES OF CONSOLIDATION (ENTITY BY ENTITY) – CONSOLIDATION MATRIX

| | a | b | c | | d | e | f |
|---|---|---|---|---|---|---|---|
| Name of the entity | Method of accounting consolidation | Method of regulatory consolidation | | | | | Description of the entity |
| | | Full consolidation | Proportional consolidation | Equity method | Neither consolidated nor deducted | Deducted | |
| DZ BANK AG Deutsche Zentral-Genossenschafts-bank,Frankfurt am Main, (DZ BANK) | Full consolidation | ● | | | | | Credit institution |
| AGIMA Aktiengesellschaft für Immobilien-Anlage, Frankfurt am Main | Full consolidation | ● | | | | | Rental and leasing of land |
| Bausparkasse Schwäbisch Hall AG, Schwäbisch Hall, (BSH) | Full consolidation | ● | | | | | Credit institution |
| Beteiligungsgesellschaft Westend 1 mbH & Co. KG, Frankfurt am Main | Full consolidation | ● | | | | | Management of long-term equity investments |
| Deutsche WertpapierService Bank AG, Frankfurt am Main, (dwpbank) | Equity method | | ● | | | | Credit institution |
| DVB Bank SE, Frankfurt am Main, (DVB) | Full consolidation | ● | | | | | Credit institution |
| DZ BANK Capital Funding LLC I, Wilmington, USA | Full consolidation | ● | | | | | Other activities linked to financial services |
| DZ BANK Capital Funding LLC II, Wilmington, USA | Full consolidation | ● | | | | | Other activities linked to financial services |
| DZ BANK Capital Funding LLC III, Wilmington, USA | Full consolidation | ● | | | | | Other activities linked to financial services |
| DZ BANK Capital Funding Trust I, Wilmington, USA | Full consolidation | ● | | | | | Other activities linked to financial services |

| | a | b | c | | d | e | f |
|---|---|---|---|---|---|---|---|
| **Name of the entity** | **Method of accounting consolidation** | **Method of regulatory consolidation** | | | | | **Description of the entity** |
| | | **Full consolidation** | **Proportional consolidation** | **Equity method** | **Neither consolidated nor deducted** | **Deducted** | |
| DZ BANK Capital Funding Trust II, Wilmington, USA | Full consolidation | ● | | | | | Other activities linked to financial services |
| DZ BANK Capital Funding Trust III, Wilmington, USA | Full consolidation | ● | | | | | Other activities linked to financial services |
| DZ BANK Perpetual Funding (Jersey) Limited, St. Helier, Jersey | Full consolidation | ● | | | | | Other activities linked to financial services |
| DZ BANK Perpetual Funding Issuer (Jersey) Limited, St. Helier, Jersey | Full consolidation | | | | ● | | Other activities linked to financial services |
| DZ Beteiligungs-gesellschaft mbH Nr. 18, Frankfurt am Main | Full consolidation | ● | | | | | Management of long-term equity investments |
| DZ HYP AG, Hamburg/ Münster, (DZ HYP) | Full consolidation | ● | | | | | Credit institution |
| DZ PRIVATBANK (Schweiz) AG, Zurich, Switzerland | Full consolidation | ● | | | | | Credit institution |
| DZ PRIVATBANK S.A., Strassen, Luxembourg (DZ PRIVATBANK) | Full consolidation | ● | | | | | Credit institution |
| DZ Vierte Beteiligungs-gesellschaft mbH, Frankfurt am Main | Full consolidation | ● | | | | | Management of long-term equity investments |
| GAF Active Life 1 Renditebeteiligungs-GmbH & Co. KG, Nidderau | Not consolidated | ● | | | | | Other financial services |
| GAF Active Life 2 Rendite-beteiligungs- GmbH & Co. KG, Nidderau | Not consolidated | ● | | | | | Other financial services |
| Immobilien-Gesellschaft 'DG Bank-Turm, Frankfurt am Main, Westend' mbH & Co. KG des genossenschaft-lichen Verbundes, Frankfurt am Main | Full consolidation | ● | | | | | Rental and leasing of land and buildings |
| IMPETUS Bietergesellschaft mbH, | Full consolidation | ● | | | | | Management of long-term equity investments |
| IPConcept (Luxemburg) S.A., Strassen, Luxembourg | Full consolidation | ● | | | | | Other financial services |
| IPConcept (Schweiz) AG, Zurich, Switzerland | Full consolidation | ● | | | | | Other financial services |
| KBIH Beteiligungsgesell-schaft für Industrie und Han-del mbH, Frankfurt am Main | Full consolidation | ● | | | | | Management of long-term equity investments |
| Phoenix Beteiligungs-gesellschaft mbH, Düsseldorf | Full consolidation | ● | | | | | Management of long-term equity investments |
| R+V Versicherung AG insurance group, Wiesbaden, (R+V) | Full consolidation | | | ● | | | Insurance company |

| | a | b | c | d | e | f |
|---|---|---|---|---|---|---|
| Name of the entity | Method of accounting consolidation | Method of regulatory consolidation | | | | Description of the entity |
| | | Full consolidation | Proportional consolidation | Equity method | Neither consolidated nor deducted | Deducted | |
| ReiseBank Aktiengesell-schaft, Frankfurt am Main | Full consolidation | ● | | | | | Credit institution |
| TeamBank AG Nürnberg, Nuremberg, (TeamBank) | Full consolidation | ● | | | | | Credit institution |
| Union Asset Management Holding AG, Frankfurt am Main, (UMH) | Full consolidation | ● | | | | | Financial services |
| VR Equitypartner GmbH, Frankfurt am Main | Full consolidation | ● | | | | | Management of long-term equity investments |
| VR Factoring GmbH, Eschborn | Full consolidation | ● | | | | | Financial services |
| VR GbR, Frankfurt am Main | Full consolidation | ● | | | | | Management of long-term equity investments |
| VR Payment GmbH, Frankfurt am Main | Full consolidation | ● | | | | | Other activities linked to financial services |
| VR Smart Finanz AG, Eschborn | Full consolidation | ● | | | | | Financial services |

The significant entities are consolidated for both regulatory and commercial-law purposes. However, insurance companies and companies not in the financial sector are not required to be consolidated in the banking group for regulatory purposes. In this context, R+V is fully consolidated for commercial-law purposes but is not directly subject to banking regulation. Instead, it is factored into the procedure used to determine the DZ BANK banking group's capital requirements and disclosures using the risk-weighted carrying amount of DZ BANK's investment in R+V. Furthermore, R+V is included in the cross-sectoral surveillance by the banking supervisory authority of the DZ BANK financial conglomerate at consolidated level (based on the consolidation of the entire R+V Versicherung AG insurance group) in the legal framework applicable to financial conglomerates.

In both cases, the scope of consolidation includes a large number of other entities that are not shown because they are less material.

The regulatory liquidity ratios, the liquidity coverage ratio (LCR) and the net stable funding ratio (NSFR), are calculated for the DZ BANK banking group at consolidated level in accordance with article 11 (4) CRR. The companies consolidated for regulatory purposes, on the basis of which the LCR and NSFR requirements are calculated and complied with, are determined in accordance with article 18 CRR and differ from the scope of consolidation that has to be used to determine regulatory own funds. The difference is that the requirements of article 18 (3) to (6) and (9) CRR are not used to determine the consolidated liquidity position pursuant to article 11 (4) CRR. Accordingly, voluntarily consolidated entities, entities that are proportionally consolidated, and entities that are not subsidiaries are not taken into account for the purpose of calculating and complying with the requirements in Part 6 CRR (liquidity purposes) at consolidated level. In addition, requests to waive consolidation of certain subsidiaries for the purposes of meeting liquidity requirements pursuant to article 19 (2) CRR were granted by BaFin in 2014 and the ECB in 2016. This means that the regulators have agreed that subsidiaries that can be disregarded in the banking regulators' liquidity risk targets for the DZ BANK banking group do not have to be consolidated for liquidity purposes. This ruling applies specifically to entities that are almost entirely funded by equity or are funded to a large degree from within the group. As at December 28, 2020, ancillary services undertakings and asset management companies were consolidated for liquidity purposes for the first time due to application of the consolidation rules in CRR II. A request pursuant to article 19 (2) CRR to exclude further companies – particularly ancillary services undertakings and asset management companies – from the scope of consolidation was submitted to the ECB in 2020, but had not yet been approved by the reporting date.

Including the entities listed in Fig. 6, a total of 71 companies were **consolidated for regulatory purposes** pursuant to articles 11 to 20 and article 22 CRR as at December 31, 2020 (September 30, 2020: 67).

Of this total, 65 companies were fully consolidated (September 30, 2020: 62) and can be broken into the following types:

– 10 banks (September 30, 2020: 10),
– 3 financial institutions in the form of other credit institutions pursuant to KWG (September 30, 2020: 3),
– 9 financial institutions that are asset management companies (September 30, 2020: 8),
– 26 financial institutions considered to be finance companies under KWG (September 30, 2020: 25),
– 5 financial institutions categorized as other financial institutions (September 30, 2020: 5),
– 3 investment firms (September 30, 2020: 3),
– 2 payment institutions (September 30, 2020: 2), and
– 7 ancillary services undertakings (September 30, 2020: 6).

Furthermore, 2 ancillary services undertakings were consolidated on a voluntary basis as at the reporting date (September 30, 2020: 1). In addition, 3 banks (September 30, 2020: 3) and 1 asset management company (September 30, 2020: 1) were proportionally consolidated.

DZ BANK is either directly or indirectly the major shareholder in the long-term equity investments consolidated for regulatory purposes. Most of the companies are based either in Germany or elsewhere in the European Union. On the reporting date there were no **restrictions on the transfer of cash or own funds** as defined in article 436 sentence 1 letter c CRR within the DZ BANK banking group imposed by third-party individuals, private or public-sector companies, supranational organizations, or sovereign states.

The **waiver** according to which – provided certain conditions are met – the regulatory supervision of individual Germany-based institutions within a banking group may be replaced by supervision of the entire banking group, is used in the DZ BANK banking group for DZ HYP (group waiver pursuant to article 7 (1) CRR).

Deutsche Genossenschafts-Hypothekenbank AG, Hamburg (DG HYP), which was the predecessor institution of DZ HYP, reported this to the banking supervisory authority in November 2012 together with evidence that the application criteria had been met. In the context of the merger of the former WL BANK with DG HYP, the ECB was notified that the waiver would continue to be used for DZ HYP. The prerequisites for this waiver continue to be met following this merger (article 436 letter e CRR).

The **waiver** can only be used if the subordinate entity is closely integrated into the group structure. This is particularly assumed to be the case if the parent company is able to exercise control over the subordinated entity because it holds the majority of its voting rights and it has issued an unrestricted letter of comfort in relation to the subordinated entity. Furthermore, the regulatory management of the subordinated institution by the parent company must meet ECB requirements. The entity that is the subject of the waiver must be included in the strategy, risk-bearing capacity, and risk management processes of the parent institution. The parent company must also be able to issue direct instructions within the group in order to ensure the integration of the subordinated entity. DZ HYP is fully integrated into the internal processes and risk management of DZ BANK as the parent company of the banking group. In addition to legal, organizational, and structural integration, this particularly applies to the structure of its decision-making bodies, ICAAP, the strategic planning process, business and risk strategies, and the reporting and disclosure system. There are no current or foreseeable legal or actual material obstacles to the immediate transfer of own funds to DZ HYP or to the repayment of liabilities to DZ HYP by DZ BANK.

Fig. 7 shows how the entities included in the DZ BANK banking group are integrated into the quantitative regulatory disclosures pursuant to article 432 (1) CRR. The effects of intragroup consolidation have been taken into account.

As a rule, all subsidiaries that are consolidated for regulatory purposes are integrated into the quantitative disclosures where the risk is relevant to the subsidiary in question. This information is shown in Fig. 7 below.

FIG. 7 – INCLUSION OF ENTITIES IN THE DZ BANK BANKING GROUP IN QUANTITATIVE REGULATORY DISCLOSURES[1]

| Entity | Liquidity ratios | Own funds | Capital requirements | Capital ratios | Indicators of global systemic importance | Loss allowances for loans and advances | Standardized Approach exposure | IRBA[2] exposure | Collateralized lending volume | Counterparty credit risk | Securitizations | Market risk | Market risk (IMA) | Interest-rate risk in the banking book | Risk on long-term equity investments not included in the trading | Countercyclical capital buffer | Leverage ratio | Asset encumbrance | Remuneration policy | Non-performing loans | Action in response to COVID-19 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DZ BANK | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| BSH | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | ● | | ● | ● | ● | ● | ● | ● | ● | ● |
| DZ HYP | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | ● | ● | ● | ● | ● | ● | ● | ● |
| DVB | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | ● | | ● | ● | ● | ● | ● | ● | ● | ● |
| DZ PRIVATBANK | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | ● | ● | ● | ● | ● | ● | ● | ● |
| TeamBank | ● | ● | ● | ● | ● | ● | ● | ● | | | | ● | | ● | ● | ● | ● | ● | ● | ● | ● |
| UMH | | ● | ● | ● | ● | ● | ● | | | ● | | ● | | ● | ● | ● | ● | ● | | ● | |
| VR Smart Finanz AG | ● | ● | ● | ● | ● | ● | | | ● | ● | | ● | | ● | ● | ● | ● | ● | | ● | ● |
| Other companies of relevance for regulatory purposes | ● | ● | ● | ● | ● | ● | ● | ● | | | | ● | | | | ● | ● | ● | ● | ● | ● |

[1] Companies consolidated for regulatory purposes with the exception of companies that are not consolidated under the liquidity rules pursuant to article 11 CRR in conjunction with article 19 (2) CRR.
[2] IRBA – internal ratings-based approach.

## 3.3 Differences in the basis of consolidation for accounting and regulatory purposes

(ARTICLE 436 SENTENCE 1 LETTER B CRR)

Fig. 8 compares the carrying amounts – as published in the DZ BANK Group's consolidated financial statements on the basis of the scope of consolidation for accounting purposes (column a) – with the carrying amounts resulting from application of the scope of consolidation for regulatory purposes (column b). Furthermore, the amounts stated in the consolidated financial statements and applied to the scope of consolidation for regulatory purposes are broken down by the risk categories described in Part 3 Title II CRR (columns c to g). The breakdown for columns c to f in the following table EU LI1 thus follows the frameworks for

- credit risk (column c),
- counterparty credit risk (column d),
- securitizations (column e), and
- market risk (column f).

Column g shows amounts that are subject to direct deduction or are not subject to capital requirements. Please note that the amounts in columns c to g do not necessarily match the carrying amounts disclosed in column b. This is due to the fact that, in the context of capital requirements, individual asset and liability items on the balance sheet are subject to more than one of the risk types described in Fig. 10. For reasons of consistency, securities financing transactions are assigned to the credit risk category. Consequently, securities classed as investments subject to sale and repurchase agreements are recognized twice in the credit risk category because not only the credit risk but also an existing counterparty risk is recognized for the underlying securities.

The equity components are reconciled separately, so they are not shown in Fig. 8. There is therefore no reconciliation of total assets to total equity and liabilities. For the reconciliation of the equity reported on the balance sheet with the regulatory own funds of the DZ BANK banking group, please see Fig. 16.

FIG. 8 – EU LI1 – DIFFERENCES BETWEEN ACCOUNTING AND REGULATORY SCOPES OF CONSOLIDATION AND RECONCILIATION OF FINANCIAL STATEMENTS CATEGORIES TO REGULATORY RISK CATEGORIES AS AT DECEMBER 31, 2020

| | a | b | c | d | e | f | g |
|---|---|---|---|---|---|---|---|
| | | | Carrying amounts of items | | | | |
| € million | Carrying amounts as reported in published consolidated financial statements | Carrying amounts under scope of regulatory consolidation | Subject to the credit risk framework | Subject to the CCR framework | Subject to the securitization framework | Subject to the market risk framework | Subject to deduction from capital or not subject to capital requirements |
| **Assets** | | | | | | | |
| Cash and cash equivalents | 68,354 | 68,504 | 68,305 | - | - | 289 | - |
| Loans and advances to banks | 103,020 | 102,921 | 102,965 | - | - | 120 | - |
| Loans and advances to customers | 190,294 | 193,116 | 190,586 | - | 1,931 | 5,527 | - |
| Hedging instruments (positive fair values) | 161 | 161 | - | 160 | - | 72 | - |
| Financial assets held for trading | 42,846 | 41,881 | 6,751 | 22,280 | 415 | 12,550 | - |
| Investments | 60,232 | 67,584 | 64,179 | - | 1,919 | 1,091 | 2 |
| Investments held by insurance companies | 121,668 | - | - | - | - | - | - |

| | a | b | c | d | e | f | g |
|---|---|---|---|---|---|---|---|
| | Carrying amounts as reported in published consolidated financial statements | Carrying amounts under scope of regulatory consolidation | Carrying amounts of items | | | | |
| € million | | | Subject to the credit risk framework | Subject to the CCR framework | Subject to the securitization framework | Subject to the market risk framework | Subject to deduction from capital or not subject to capital requirements |
| Property, plant and equipment, investment property, and right-of-use assets | 1,744 | 1,767 | 1,339 | - | - | 37 | - |
| Income tax assets | 879 | 563 | 1,076 | - | - | 12 | 99 |
| Other assets | 5,516 | 2,638 | 1,842 | - | - | 96 | 689 |
| Loss allowances | -2,320 | -2,360 | -2,350 | - | - | -441 | - |
| Non-current assets and disposal groups classified as held for sale | 199 | 84 | 84 | - | - | 64 | - |
| Fair value changes of the hedged items in portfolio hedges of interest-rate risk | 1,980 | 1,980 | 1,980 | - | - | - | - |
| **Total assets** | **594,573** | **478,839** | **436,758** | **22,440** | **4,265** | **19,416** | **790** |
| **Liabilities** | | | | | | | |
| Deposits from banks | 177,852 | 177,934 | 0 | - | - | 7 | 187,529 |
| Deposits from customers | 133,925 | 138,695 | - | - | - | 2,823 | 137,539 |
| Debt certificates issued including bonds | 70,500 | 70,707 | - | - | - | 288 | 70,468 |
| Hedging instruments (negative fair values) | 2,638 | 2,638 | - | 2,639 | - | 4 | - |
| Financial liabilities held for trading | 50,404 | 50,496 | 3,202 | 20,061 | 2 | 52 | 27,298 |
| Provisions | 4,003 | 4,044 | 9 | - | - | 116 | 3,801 |
| Insurance liabilities | 111,213 | - | - | - | - | - | - |
| Income tax liabilities | 1,229 | 214 | - | - | - | 4 | 265 |
| Other liabilities | 10,243 | 2,882 | - | - | - | 83 | 2,840 |
| Subordinated capital | 3,090 | 3,110 | - | - | - | 213 | 3,149 |
| Liabilities included in disposal groups classified as held for sale | 2 | 1 | - | - | - | 1 | - |
| Fair value changes of the hedged items in portfolio hedges of interest-rate risk | 315 | 315 | - | - | - | - | 315 |
| **Total liabilities** | **565,414** | **451,036** | **3,211** | **22,701** | **2** | **3,590** | **433,203** |

The difference of €115,734 million between the total assets in columns a and b is mainly the result of the deconsolidation of R+V (€130,027 million) and the recognition of this entity in the scope of consolidation for regulatory purposes at its carrying amount of €7,043 million calculated using the equity method. There are also differences totaling €1,646 million in the scopes of consolidation of the subgroups, mainly BSH. The discrepancies between the scopes of consolidation also give rise to differences of €5,604 million in the consolidation of intragroup transactions.

FIG. 9 – EU LI1 – DIFFERENCES BETWEEN ACCOUNTING AND REGULATORY SCOPES OF CONSOLIDATION AND RECONCILIATION OF FINANCIAL STATEMENTS CATEGORIES TO REGULATORY RISK CATEGORIES AS AT DECEMBER 31, 2019

| | a | b | c | d | e | f | g |
|---|---|---|---|---|---|---|---|
| | | | Carrying amounts of items | | | | |
| € million | Carrying amounts as reported in published consolidated financial statements | Carrying amounts under scope of regulatory consolidation | Subject to the credit risk framework | Subject to the CCR framework | Subject to the securitization framework | Subject to the market risk framework | Subject to deduction from capital or not subject to capital requirements |
| **Assets** | | | | | | | |
| Cash and cash equivalents | 52,545 | 52,674 | 52,674 | 0 | 0 | 375 | 0 |
| Loans and advances to banks | 97,544 | 97,330 | 109,630 | 0 | 0 | 205 | 0 |
| Loans and advances to customers | 186,244 | 188,947 | 187,373 | 0 | 1,420 | 9,809 | 0 |
| Hedging instruments (positive fair values) | 201 | 201 | 3 | 246 | 0 | 136 | 0 |
| Financial assets held for trading | 44,781 | 43,949 | 9,973 | 19,503 | 26 | 14,447 | 0 |
| Investments | 56,927 | 64,200 | 60,199 | 0 | 3,121 | 2,374 | 0 |
| Investments held by insurance companies | 113,549 | 0 | 0 | 0 | 0 | 0 | 0 |
| Property, plant and equipment, investment property, and right-of-use assets | 1,632 | 1,639 | 1,633 | 0 | 0 | 41 | 0 |
| Income tax assets | 1,018 | 654 | 1,178 | 0 | 0 | 10 | 112 |
| Other assets | 5,444 | 2,213 | 1,829 | 0 | 0 | 87 | 499 |
| Loss allowances | -2,277 | -2,312 | -2,312 | 0 | 0 | -500 | 0 |
| Non-current assets and disposal groups classified as held for sale | 516 | 376 | 375 | 0 | 0 | 347 | 0 |
| Fair value changes of the hedged items in portfolio hedges of interest-rate risk | 1,275 | 1,275 | 1,275 | 0 | 0 | 0 | 0 |
| **Total assets** | **559,379** | **451,146** | **423,830** | **9,749** | **4,567** | **27,332** | **611** |
| **Liabilities** | | | | | | | |
| Deposits from banks | 141,121 | 141,284 | 5,008 | 0 | 0 | 323 | 143,943 |
| Deposits from customers | 131,516 | 135,977 | 0 | 0 | 0 | 2,843 | 135,321 |
| Debt certificates issued including bonds | 85,123 | 85,324 | 0 | 0 | 0 | 880 | 85,312 |
| Hedging instruments (negative fair values) | 1,306 | 1,306 | 0 | 1,308 | 0 | 12 | 0 |
| Financial liabilities held for trading | 51,762 | 51,780 | 0 | 18,868 | 1 | 166 | 32,956 |
| Provisions | 3,835 | 3,894 | 8 | 0 | 0 | 5 | 3,883 |
| Insurance liabilities | 104,346 | 0 | 0 | 0 | 0 | 0 | 0 |
| Income tax liabilities | 1,069 | 236 | 0 | 0 | 0 | 5 | 336 |
| Other liabilities | 9,173 | 2,457 | 0 | 0 | 0 | 89 | 2,594 |
| Subordinated capital | 2,187 | 2,208 | 0 | 0 | 0 | 234 | 2,251 |
| Liabilities included in disposal groups classified as held for sale | 1 | 1 | 0 | 0 | 0 | 1 | 0 |
| Fair value changes of the hedged items in portfolio hedges of interest-rate risk | 144 | 144 | 0 | 0 | 0 | 0 | 143 |
| **Total liabilities** | **531,583** | **424,631** | **5,016** | **20,176** | **1** | **4,559** | **406,739** |

## 3.4 Differences between the carrying amounts in the consolidated financial statements and the exposures recognized for regulatory purposes

(ARTICLE 436 SENTENCE 1 LETTER B CRR)

Fig. 10 shows the differences between the carrying amounts in the consolidated financial statements and the exposures used for regulatory purposes, unless already included in Fig. 8. To provide a comparison, Fig. 11 shows the same differences as at December 31, 2019.

FIG. 10 – EU LI2 – MAIN SOURCES OF DIFFERENCES BETWEEN REGULATORY EXPOSURE AMOUNTS AND CARRYING AMOUNTS IN FINANCIAL STATEMENTS AS AT DECEMBER 31, 2020

| | | a | b | c | d | e |
|---|---|---|---|---|---|---|
| | | **Total** | **Items subject to** | | | |
| **€ million** | | | **Credit risk framework** | **CCR framework** | **Securitization framework** | **Market risk framework** |
| 1 | Carrying amount of assets under the scope of regulatory consolidation (as per | 482,879 | 436,758 | 22,440 | 4,265 | 19,416 |
| 2 | Carrying amount of liabilities under the scope of regulatory consolidation (as per | 29,503 | 3,211 | 22,701 | 2 | 3,590 |
| 3 | Total net amount under the regulatory scope of consolidation | 453,375 | 433,547 | -261 | 4,263 | 15,826 |
| 4 | Off-balance-sheet amounts | 76,034 | 32,132 | - | 2,910 | 0 |
| 5 | Adjustment due to use of conversion factors (off-balance-sheet transactions) | - | 40,991 | - | - | - |
| 6 | Adjustment for multiple recognition (SFTs, market risk)[1] | 4,005 | - | - | - | - |
| 7 | Adjustment of exposures in the internal model (market risk) | -12,411 | - | - | - | -12,411 |
| 8 | Differences in valuations | 11,414 | 1,607 | 13,026 | - | -3,219 |
| 9 | Differences due to different netting rules, other than those already included in row | -516 | -7,473 | 5,808 | - | 1,149 |
| 10 | Differences due to consideration of provisions | 1,646 | 1,646 | - | - | - |
| 11 | Adjustment due to foreign currency exposures | 108 | 3 | - | - | 105 |
| 12 | Differences in brokerage transactions | 2,780 | - | 2,780 | - | - |
| 13 | Other reconciliation items | 1,905 | - | - | - | - |
| **14** | **Exposure amounts considered for regulatory purposes** | **538,340** | **511,096** | **19,389** | **7,154** | **700** |

[1] SFTs = securities financing transactions.

FIG. 11 – EU LI2 – MAIN SOURCES OF DIFFERENCES BETWEEN REGULATORY EXPOSURE AMOUNTS AND CARRYING AMOUNTS IN FINANCIAL STATEMENTS AS AT DECEMBER 31, 2019

| | | a | b | c | d | e |
|---|---|---|---|---|---|---|
| | | Total | Items subject to | | | |
| **€ million** | | | **Credit risk framework** | **CCR framework** | **Securitization framework** | **Market risk framework** |
| 1 | Carrying amount of assets under the scope of regulatory consolidation (as per | 449,868 | 423,830 | 19,749 | 4,567 | 27,332 |
| 2 | Carrying amount of liabilities under the scope of regulatory consolidation (as per | 26,891 | 5,016 | 20,176 | 1 | 4,559 |
| 3 | Total net amount under the regulatory scope of consolidation | 422,977 | 418,814 | -427 | 4,566 | 22,773 |
| 4 | Off-balance-sheet amounts | 65,684 | 26,612 | 0 | 1,952 | 2 |
| 5 | Adjustment due to use of conversion factors (off-balance-sheet transactions) | 0 | 37,118 | 0 | 0 | 0 |
| 6 | Adjustment for multiple recognition (SFTs, market risk)[1] | 16,999 | 0 | 0 | 0 | 0 |
| 7 | Adjustment of exposures in the internal model (market risk) | -14,456 | 0 | 0 | 0 | -14,456 |
| 8 | Differences in valuations | 12,923 | 4,470 | 14,181 | 0 | -5,728 |
| 9 | Differences due to different netting rules, other than those already included in row | -1,711 | -7,734 | 6,540 | 0 | -517 |
| 10 | Differences due to consideration of provisions | 2,440 | 2,439 | - | 1 | 0 |
| 11 | Adjustment due to foreign currency exposures | 92 | 0 | 0 | 0 | 92 |
| 12 | Differences in brokerage transactions | 611 | 0 | 611 | 0 | 0 |
| 13 | Other reconciliation items | 2,131 | - | - | - | - |
| **14** | **Exposure amounts considered for regulatory purposes** | **507,692** | **479,524** | **19,462** | **6,659** | **2,046** |

1 SFTs = securities financing transactions.

Rows 1 and 2 are attributable to the carrying amounts of the assets and liabilities under the regulatory scope of consolidation and are transferred from Fig. 8 to Fig. 10 without the exposures that are subject to direct deduction or are not subject to capital requirements (Fig. 8, column g).

Row 3 therefore shows the total net amount for these items under the regulatory scope of consolidation. In respect of the off-balance-sheet amounts (row 4), please note that the off-balance-sheet exposures in column a are recognized before application of the credit conversion factors (CCFs), whereas the CCFs have been applied in columns b to e. Consequently, an adjustment to the reconciliation is necessary in row 5 because the exposures recognized for regulatory purposes include off-balance-sheet exposures to which CCFs have not been applied.

To ensure consistency between column a and columns b to e, the carrying amounts of exposures are shown in column a that are assigned to multiple risk categories (row 6), for example credit risk exposures denominated in a foreign currency. Further differences between the regulatory and accounting amounts arise due to the disclosure of market risk exposures in the internal model in Fig. 8, because these exposures are not included in the regulatory basis of assessment for the market risk category. The related adjustment is made in row 7.

The reconciliation of the carrying amounts under the regulatory scope of consolidation to the total of the regulatory bases of assessment is continued with the determination of the valuation differences. Among other items, the add-on for derivative exposures is included in row 8. After the total net amount has been calculated in row 3 of Fig. 10, it has to be adjusted to reflect the actual regulatory netting (row 9). In the liquidation netting of derivatives, for example, a netting rule is used that differs from the simple calculation of the net amount in row 3.

Another difference affects the recognition of loan loss allowances and provisions in the IRB approach that are not part of the regulatory basis of assessment and are adjusted through row 10. Row 11 contains adjustments resulting, in particular, from foreign currency exposures for which different exchange rates are used in the accounts and for regulatory purposes. Brokerage transactions in the context of derivatives business, which are not accounted for pursuant to commercial law, are disclosed (row 12). The other reconciliation items in row 13 include regulatory risk adjustments to exposures in internal models.

# 4 Capital adequacy

## 4.1 Economic capital adequacy

(Article 438 sentence 1 letter a CRR)

All material risks affecting capital resources are managed on the basis of groupwide risk capital management. The aim of risk capital management is to ensure the availability of capital resources that are commensurate with the risks assumed (capital adequacy).

Information on the management of economic capital and on capital adequacy is disclosed in section 5.2 (pages 107 to 110) 'Economic perspective' of the commercial-law risk report. Economic capital management is based on internal risk measurement methods that take into account all types of risk that are material from a capital adequacy perspective. The risk capital requirement is determined by aggregating the relevant risk types of all management units. The methods selected serve to meet the statutory requirements for a groupwide integrated risk capital management system.

In the risk-bearing-capacity analysis, the risk capital requirement (including capital buffer) is compared with the available internal capital (internally defined capital) in order to determine the economic capital adequacy. The Board of Managing Directors determines a limit for the risk capital requirement (including capital buffer) for a particular year on the basis of the available internal capital. This limit is then broken down by risk type and entity for operational management purposes. If necessary, the limits can be adjusted during the year, e.g. if economic conditions change.

Available internal capital is the economic value of equity as at the date on which risk-bearing capacity is calculated. It corresponds to the internal capital, as defined using economic criteria, that is available to cover unexpected losses. It is reviewed on a quarterly basis.

## 4.2 Regulatory capital adequacy

Regulatory capital adequacy is defined as the holding of sufficient capital to cover the risks assumed by the business. At DZ BANK, the Group Finance division is responsible for monitoring regulatory capital adequacy. Regular monitoring is designed to ensure that the applicable minimum regulatory requirements for solvency are met at all times. Monitoring takes place monthly for the DZ BANK financial conglomerate, the DZ BANK banking group, DZ BANK, and the R+V Versicherung AG insurance group. The Board of Managing Directors and the supervisory authority are notified of the results within the monthly reports on capital management.

### 4.2.1 Own funds

(Article 437 CRR)

The regulatory own funds of the DZ BANK banking group are derived from the provisions of the CRR/CRD IV. The new rules in CRR II had to be applied to some components of own funds as at the reporting date. Pursuant to the provisions of the CRR (article 25 et seq.), regulatory own funds consist of common equity Tier 1 capital (CET1), additional Tier 1 capital (AT1), and Tier 2 capital (T2). They are based on the carrying amounts recognized under IFRS and essentially comprise the equity reported on the balance sheet, hybrid capital instruments, and subordinated liabilities.

Fig. 12 shows the DZ BANK banking group's own funds as defined by article 437 (1) letters d and e CRR in conjunction with Commission Implementing Regulation (EU) No. 1423/2013 dated December 20, 2013. These disclosures relate to all the entities consolidated for regulatory purposes in the DZ BANK banking group.

The following table presents the own funds as calculated in accordance with IFRS, including the deductions that are relevant for regulatory purposes. It takes into account both the transitional provisions pursuant to Commission Implementing Regulation (EU) No. 1423/2013 dated December 20, 2013 and the adjustment to the CRR relating to the transitional provisions to soften the impact of implementing IFRS 9 pursuant to article 473a CRR (Regulation (EU) 2020/873):

FIG. 12 – STRUCTURE OF OWN FUNDS AS AT DECEMBER 31, 2020
(ARTICLE 437 (1) LETTERS D AND E CRR IN CONJUNCTION WITH ANNEX IV OF IMPLEMENTING REGULATION (EU) NO. 1423/2013)

| | | (A) | (A) | (B) |
|---|---|---|---|---|
| | | **Amount on disclosure reporting date** | Amount on disclosure reporting date | Reference to article of Regulation (EU) No. 575/2013 |
| **€ million** | | **Dec. 31, 2020** | Sep. 30, 2020 | |
| **Common equity Tier 1 (CET1): instruments and reserves** | | | | |
| 1 | Capital instruments and related share premium accounts | 10,478 | 10,478 | 26 (1), 27, 28, 29 |
| 1a | of which: financial instrument type 1 | - | - | EBA list in |
| 1b | of which: financial instrument type 2 | - | - | |
| 1c | of which: financial instrument type 3 | - | - | |
| 2 | Retained earnings | 7,926 | 7,921 | 26 (1) (c) |
| 3 | Accumulated other comprehensive income (and other reserves) | 4,072 | 3,599 | 26 (1) |
| 3a | Fund for general banking risks | - | - | 26 (1) (f) |
| 4 | Amount of qualifying items referred to in article 484 (3) CRR and the related share premium accounts subject to phase out from CET1 | - | - | 486 (2) |
| 5 | Non-controlling interests (amount allowed in consolidated CET1) | 28 | 28 | 84 |
| 5a | Independently reviewed interim profits net of any foreseeable charge or | 635 | 205 | 26 (2) |
| 5b | Transitional adjustments due to additional non-controlling interests | 114 | 114 | |
| **6** | **Common equity Tier 1 (CET1) before regulatory adjustments** | 23,253 | 22,345 | Sum of rows 1 to 5b |
| **Common equity Tier 1 (CET1): regulatory adjustments** | | | | |
| 7 | Additional value adjustments (negative amount) | -254 | -236 | 34, 105 |
| 8 | Intangible assets (net of related tax liability) (negative amount) | -480 | -554 | 36 (1) (b), 37 |
| 9 | Empty set in the EU | | | |
| 10 | Deferred tax assets that rely on future profitability, excluding those arising from temporary differences (net of related tax liability where the conditions | -11 | -12 | 36 (1) (c), 38 |
| 11 | Fair value reserves related to gains and losses on cash flow hedges | 0 | - | 33 (1) (a) |
| 12 | Negative amounts resulting from the calculation of expected loss amounts | -174 | -168 | 36 (1) (d), 40, 159 |
| 13 | Any increase in equity arising from securitized assets (negative amount) | - | - | 32 (1) |
| 14 | Gains or losses on liabilities recognized at fair value resulting from changes in own credit standing | 163 | -326 | 32 (1) (b) |
| 14a | Fair value gains and losses arising from the institution's own credit risk related to derivative liabilities | -29 | -28 | |
| 15 | Defined benefit pension fund assets (negative amount) | 0 | -1 | 36 (1) (e), 41 |
| 16 | Direct and indirect holdings by an institution of own CET1 instruments (negative amount) | - | - | 36 (1) (f), 42 |
| 17 | Direct, indirect and synthetic holdings by the institution of the CET1 instruments of financial-sector entities where those entities have reciprocal | -2 | -2 | 36 (1) (g), 44 |
| 18 | Direct, indirect and synthetic holdings by the institution of CET1 instruments of financial-sector entities where the institution does not have a significant | - | - | 36 (1) (h), 43, 45, 46, 49 (2) and (3), |
| 19 | Direct, indirect and synthetic holdings by the institution of CET1 instruments of financial-sector entities where the institution has a significant investment | - | - | 36 (1) (i), 43, 45, 47, 48 (1) (b), 49 (1) to |
| 20 | Empty set in the EU | | | |
| 20a | Exposure arising from the following items qualifying for a risk weight of 1,250%, where the institution opts for the deduction alternative | -38 | -38 | 36 (1) (k) |
| 20b | of which: qualifying holdings outside the financial sector (negative amount) | - | - | 36 (1) (k) (i), 89 to |
| 20c | of which: securitization exposures (negative amount) | -38 | -38 | 36 (1) (k) (ii), 243 |
| 20d | of which: free deliveries (negative amount) | - | - | 36 (1) (k) (iii), 379 |

| € million | | (A) Amount on disclosure reporting date Dec. 31, 2020 | (A) Amount on disclosure reporting date Sep. 30, 2020 | (B) Reference to article of Regulation (EU) No. 575/2013 |
|---|---|---|---|---|
| 21 | Deferred tax assets that rely on future profitability, arising from temporary differences (amount above 10% threshold, net of related tax liability where | - | - | 36 (1) (c), 38, 48 (1) (a) |
| 22 | Amount exceeding the 15% threshold (negative amount) | - | - | 48 (1) |
| 23 | of which: direct and indirect holdings by the institution of CET1 instruments of financial-sector entities where the institution has a | - | - | 36 (1) (i), 48 (1) (b) |
| 24 | Empty set in the EU | | | |
| 25 | of which: deferred tax assets that rely on future profitability, arising from temporary differences | - | - | 36 (1) (c), 38, 48 (1) (a) |
| 25a | Losses for the current financial year (negative amount) | - | - | 36 (1) (a) |
| 25b | Foreseeable tax charges relating to CET1 items (negative amount) | - | - | 36 (1) (l) |
| 27 | Qualifying AT1 deductions that exceed the AT1 capital of the institution (negative amount) | - | - | 36 (1) (j) |
| 27a | Other capital elements or deductions from common equity Tier 1 | -88 | -88 | |
| 27b | Other adjustments to common equity Tier 1 under the transitional guidance pursuant to article 473a CRR | 136 | 91 | 473a |
| **28** | **Total regulatory adjustments to common equity Tier 1 (CET1)** | -777 | -1,364 | Sum of rows 7 to |
| **29** | **Common equity Tier 1 (CET1)** | 22,476 | 20,981 | Row 6 minus row 28 |
| **Additional Tier 1 capital (AT1): instruments** | | | | |
| 30 | Capital instruments and related share premium accounts | 2,150 | 2,150 | 51, 52 |
| 31 | of which: classified as equity under applicable accounting standards | 2,150 | 2,150 | |
| 32 | of which: classified as liabilities under applicable accounting standards | - | - | |
| 33 | Amount of qualifying items referred to in article 484 (4) CRR and the related share premium accounts subject to phase out from AT1[1] | 493 | 493 | 486 (3) |
| 34 | Qualifying Tier 1 capital instruments included in consolidated AT1 capital (including non-controlling interests not included in row 5) issued by | 24 | 24 | 85, 86 |
| 35 | of which: instruments issued by subsidiaries subject to phase out | - | - | 486 (3) |
| **36** | **Additional Tier 1 capital (AT1) before regulatory adjustments** | 2,667 | 2,667 | Sum of rows 30, 33 |
| 37 | Direct and indirect holdings by an institution of its own AT1 instruments (negative amount) | -65 | -65 | 52 (1) (b), 56 (a), 57 |
| 38 | Direct, indirect and synthetic holdings by the institution of the AT1 instruments of financial-sector entities where those entities have reciprocal | - | - | 56 (b), 58 |
| 39 | Direct, indirect and synthetic holdings by the institution of AT1 instruments of financial-sector entities where the institution does not have a significant | - | - | 56 (c), 59, 60, 79 |
| 40 | Direct, indirect and synthetic holdings by the institution of AT1 instruments of financial-sector entities where the institution has a significant investment | - | - | 56 (d), 59, 79 |
| 41 | Empty set in the EU | | | |
| 42 | Qualifying T2 deductions that exceed the T2 capital of the institution (negative amount) | - | - | 56 (e) |
| **43** | **Total regulatory adjustments to additional Tier 1 capital (AT1)** | -65 | -65 | Sum of rows 37 to |
| **44** | **Additional Tier 1 capital (AT1)** | 2,602 | 2,602 | Row 36 minus row |
| **45** | **Tier 1 capital (T1 = CET1 + AT1)** | **25,078** | **23,583** | **Sum of rows 29** |
| **Tier 2 capital (T2): instruments and reserves** | | | | |
| 46 | Capital instruments and related share premium accounts | 2,341 | 2,413 | 62, 63 |
| 47 | Amount of qualifying items referred to in article 484 (5) CRR and the related share premium accounts subject to phase out from T2 | 918 | 918 | 486 (4) |
| 48 | Qualifying own funds instruments in consolidated T2 capital (including non-controlling interests and AT1 instruments not included in rows 5 or 34) issued by subsidiaries and held by third parties | 63 | 41 | 87, 88 |
| 49 | of which: instruments issued by subsidiaries subject to phase out | - | - | 486 (4) |
| 50 | Credit risk adjustments | 405 | 327 | 62 (c) and (d) |
| **51** | **Tier 2 capital (T2) before regulatory adjustments** | 3,726 | 3,699 | |
| **Tier 2 capital (T2): regulatory adjustments** | | | | |
| 52 | Direct and indirect holdings by an institution of its own T2 instruments and subordinated loans (negative amount) | -51 | -51 | 63 (b) (i), 66 (a), 67 |

| € million | | (A) Amount on disclosure reporting date Dec. 31, 2020 | (A) Amount on disclosure reporting date Sep. 30, 2020 | (B) Reference to article of Regulation (EU) No. 575/2013 |
|---|---|---|---|---|
| 53 | Holdings of T2 instruments and subordinated loans of financial-sector entities where those entities have reciprocal cross-holdings with the institution designed to artificially inflate the institution's own funds (negative | - | - | 66 (b), 68 |
| 54 | Direct and indirect holdings by the institution of T2 instruments and subordinated loans of financial-sector entities where the institution does not have a significant investment in those entities (less than 10% and net of | - | - | 66 (c), 69, 70, 79 |
| 55 | Direct and indirect holdings by the institution of T2 instruments and subordinated loans of financial-sector entities where the institution has a significant investment in those entities (net of eligible short positions) | -1 | -1 | 66 (d), 69, 79 |
| 56 | Empty set in the EU | | | |
| 56a | Other adjustments to Tier 2 capital under the transitional guidance pursuant to article 473a CRR[2] | -83 | -36 | |
| **57** | **Total regulatory adjustments to Tier 2 capital (T2)** | -135 | -88 | Sum of rows 52 to |
| **58** | **Tier 2 capital (T2)** | 3,591 | 3,611 | Row 51 minus row |
| **59** | **Total capital (TC = T1 + T2)** | **28,669** | **27,195** | **Sum of rows 45** |
| **60** | **Total risk-weighted assets** | **147,252** | **146,295** | |
| **Capital ratios and buffers** | | | | |
| 61 | Common equity Tier 1 capital ratio (as a percentage of total exposure)[3] | 15.26 | 14.34 | 92 (2) (a) |
| 62 | Tier 1 capital ratio (as a percentage of total exposure) | 17.03 | 16.12 | 92 (2) (b) |
| 63 | Total capital ratio (as a percentage of total exposure) | 19.47 | 18.59 | 92 (2) (c) |
| 64 | Institution-specific requirement (minimum CET1 requirement pursuant to article 92 (1) letter a CRR, plus capital conservation and countercyclical capital buffer requirements, systemic risk buffer and systemically important institution buffer (G-SII or O-SII buffer), expressed as a percentage of total | 9.00 | 9.00 | CRD 128, 129, 130, 131, 133 |
| 65 | of which: capital conservation buffer | 2.50 | 2.50 | |
| 66 | of which: countercyclical capital buffer | 0.01 | 0.01 | |
| 67 | of which: systemic risk buffer | 1.00 | 1.00 | |
| 67a | of which: buffer for global systemically important institutions (G-SII) or other systemically important institutions (O-SII) | 1.00 | 1.00 | |
| 68 | Available common equity Tier 1 (as a percentage of total exposure)[4] | 5.33 | 5.29 | CRD 128 |
| 69 | Not relevant in EU regulation | | | |
| 70 | Not relevant in EU regulation | | | |
| 71 | Not relevant in EU regulation | | | |
| **Amounts below threshold for deductions (before risk weight)** | | | | |
| 72 | Direct and indirect holdings by the institution of capital instruments of financial-sector entities where the institution does not have a significant investment in those entities (less than 10% and net of eligible short | 835 | 706 | 36 (1) (h), 46, 45, 56 (c), 59, 60, 66 (c), 69, 70 |
| 73 | Direct and indirect holdings by the institution of CET1 instruments of financial-sector entities where the institution holds a significant investment in those entities (above 10% and net of eligible short positions) | 203 | 233 | 36 (1) (i), 45, 48 |
| 74 | Empty set in the EU | | | |
| 75 | Deferred tax assets that rely on future profitability, arising from temporary differences (amount below 10% threshold, net of related tax liability where the conditions in article 38 (3) CRR are met) | 309 | 361 | 36 (1) (c), 38, 48 |
| **Applicable caps on the inclusion of provisions in Tier 2 capital** | | | | |
| 76 | Credit risk adjustments included in Tier 2 capital in respect of exposures subject to the standardized approach (prior to application of cap) | - | - | 62 |
| 77 | Cap on inclusion of credit risk adjustments in Tier 2 capital under standardized approach | 405 | 327 | 62 |
| 78 | Credit risk adjustments included in Tier 2 capital in respect of exposures subject to internal ratings-based approach (prior to application of cap) | 405 | 327 | 62 |
| 79 | Cap on inclusion of credit risk adjustments in Tier 2 capital under internal ratings based approach | 579 | 575 | 62 |
| **Capital instruments subject to phase-out arrangements (only applicable between January 1, 2014 and January 1, 2022)** | | | | |

| € million | | (A) Amount on disclosure reporting date Dec. 31, 2020 | (A) Amount on disclosure reporting date Sep. 30, 2020 | (B) Reference to article of Regulation (EU) No. 575/2013 |
|---|---|---|---|---|
| 80 | Current cap on CET1 instruments subject to phase-out arrangements | - | - | 484 (3), 486 (2) and |
| 81 | Amount excluded from CET1 due to cap (excess over cap after redemptions and maturities) | - | - | 484 (3), 486 (2) and (5) |
| 82 | Current cap on AT1 instruments subject to phase-out arrangements | 493 | 493 | 484 (4), 486 (3) and (5) |
| 83 | Amount excluded from AT1 due to cap (excess over cap after redemptions and maturities) | 918 | 918 | 484 (4), 486 (3) and (5) |
| 84 | Current cap on T2 instruments subject to phase-out arrangements | - | - | 484 (5), 486 (4) and |
| 85 | Amount excluded from T2 due to cap (excess over cap after redemptions and maturities) | - | - | 484 (5), 486 (4) and (5) |

1 Since January 1, 2018: additional Tier 1 capital instruments that, although subject to the provisions of article 486 CRR, were still eligible as additional Tier 1 capital as at the reporting date.
2 Reporting change in conjunction with the transitional provisions pursuant to IFRS 9.
3 Common equity Tier 1 capital ratio applying CRR I in full: 15.18 percent.
4 Including Pillar 2 requirement (of 0.98 percent, i.e. a minimum of 75 percent of the P2R Tier 1 requirement of 1.31 percent or a minimum of 56.25 percent of the P2R requirement of 1.75 percent).

**Tier 1 capital (T1)** is the sum of common equity Tier 1 capital (CET1) and additional Tier 1 capital (AT1).

**Common equity Tier 1 capital** largely consists of paid-in capital plus the capital reserve, retained earnings, and non-controlling interests. Under the CRR, certain assets have to be deducted directly from capital. Apart from a few exceptions, all of these deductions have to be made from common equity Tier 1 capital. They are largely derived from additional regulatory valuation adjustments, from intangible assets, from deferred income tax assets, from reciprocal cross-holdings, and from shortfalls resulting from the comparison between expected losses (ELs) and the loss allowances recognized in this regard.

CET1 amounted to €22,476 million as at the reporting date, an increase of €1,495 million compared with the amount of €20,981 million as at September 30, 2020 (Fig. 12, row 29). This increase was primarily due to the €473 million rise in cumulative other comprehensive income (Fig. 12, row 3) and the €430 million rise in the independently reviewed interim profit net of any foreseeable charge or dividend (Fig. 12, row 5a). Another reason for the increase in CET1 was the €74 million reduction in the deduction of intangible assets (Fig. 12, row 8). Moreover, the amount that could be included under the IFRS 9 transitional provisions pursuant to article 473a CRR (Fig. 12, row 27b) was €45 million higher as at December 31, 2020 than at September 30, 2020. By contrast, CET1 was reduced by additional valuation adjustments of €18 million (Fig. 12, row 7) and a €6 million higher deduction for negative amounts resulting from the calculation of expected loss amounts (Fig. 12, row 12) compared with September 30, 2020. The row 'Gains or losses on liabilities recognized at fair value resulting from changes in own credit standing' (Fig. 12, row 14) neutralized the relevant CET1 effects on the balance sheet.

The **additional Tier 1 capital** of €2,602 million was unchanged on the figure of €2,602 million reported as at September 30, 2020. It consists of profit-sharing rights and subordinated capital that is bound by certain conditions. Subordinated debt instruments, which are being phased out from eligibility for AT1 capital, were included in an amount of €493 million (Fig. 12, row 33) in the reporting year.

As at the reporting date, **Tier 2 capital (T2)** amounted to €3,591 million, which was down by €20 million compared with the amount of €3,611 million as at September 30, 2020. The main reason for this was the €72 million reduction to €2,341 million in the amount of subordinated capital recognized pursuant to article 63 CRR II (Fig. 12, row 46).

The deduction recognized separately in T2 for the first time as at September 30, 2020 (Fig. 12, row 56a) as a result of application of the IFRS 9 transitional provisions went up by €47 million to €83 million (September 30, 2020: €36 million). Furthermore, the credit risk adjustments in the form of the excess over receivables in default (Fig. 12, row 50) rose by €78 million, from €327 million to €405 million. Also within T2, non-controlling interests (Fig. 12, row 48) increased to €63 million as at December 31, 2020 (September 30, 2020: €41 million).

The option provided by the CRR quick fix to exclude certain public-sector unrealized gains and losses measured at fair value through other comprehensive income (FVTOCI) from the calculation of CET1 in the period January 1, 2020 to December 31, 2022 (article 468 CRR) was not used as at the reporting date.

The DZ BANK banking group had already applied the IFRS 9 transitional provisions pursuant to article 473a CRR as at June 30, 2020. TeamBank applied this relief on an individual institution basis for the first time as at December 31, 2020.

FIG. 13 – IFRS 9/ARTICLE 468 FULLY IMPLEMENTED: COMPARISON OF THE INSTITUTIONS' OWN FUNDS, CAPITAL RATIOS, AND LEVERAGE RATIOS, APPLYING AND NOT APPLYING THE IFRS 9 TRANSITIONAL PROVISIONS OR COMPARABLE EXPECTED CREDIT LOSSES AND APPLYING AND NOT APPLYING THE TEMPORARY TREATMENT PURSUANT TO ARTICLE 468 CRR

| € million | | Dec. 31, 2020 | Sep. 30, 2020 | Jun. 30, 2020 |
|---|---|---|---|---|
| | | **Available capital (amounts)** | | |
| 1 | Common equity Tier 1 capital (CET1) | 22,476 | 20,981 | 21,251 |
| 2 | Common equity Tier 1 capital (CET1) not applying the IFRS 9 transitional provisions or comparable expected credit losses | 22,340 | 20,890 | 21,145 |
| 3 | Tier 1 capital | 25,078 | 23,583 | 23,854 |
| 4 | Tier 1 capital not applying the IFRS 9 transitional provisions or comparable expected credit losses | 24,942 | 23,493 | 23,748 |
| 5 | Total capital | 28,669 | 27,195 | 26,155 |
| 6 | Total capital not applying the IFRS 9 transitional provisions or comparable expected credit losses | 28,616 | 27,140 | 26,101 |
| 6a | Total capital not applying the temporary treatment of unrealized gains | - | - | - |
| **Risk-weighted assets (amounts)** | | | | |
| 7 | Total amount of risk-weighted assets | 147,252 | 146,295 | 149,851 |
| 8 | Total amount of risk-weighted assets not applying the IFRS 9 transitional provisions or comparable expected credit losses | 147,173 | 146,229 | 149,781 |
| **Capital ratios** | | | | |
| 9 | Common equity Tier 1 capital (as a percentage of total exposure) | 15.26 | 14.34 | 14.18 |
| 10 | Common equity Tier 1 capital (as a percentage of total exposure) | 15.18 | 14.29 | 14.12 |
| 10a | Common equity Tier 1 capital (as a percentage of total exposure) | - | - | - |
| 11 | Tier 1 capital (as a percentage of total exposure) | 17.03 | 16.12 | 15.85 |
| 12 | Tier 1 capital (as a percentage of total exposure) not applying the IFRS 9 transitional provisions or comparable expected credt losses | 16.95 | 16.07 | 17.45 |
| 12a | Tier 1 capital (as a percentage of total exposure) not applying the temporary treatment of unrealized gains and losses recognied at fair value through other comprehensive income pursunt to article 468 CRR | - | - | - |
| 13 | Total capital (as a percentage of total exposure) | 19.47 | 18.59 | 14.18 |
| 14 | Total capital(as a percentage of total exposure) not applying the IFRS 9 transitional provisions or comparable expected credit losses | 19.44 | 18.56 | 14.12 |

| € million | | Dec. 31, 2020 | Sep. 30, 2020 | Jun. 30, 2020 |
|---|---|---|---|---|
| | | Available capital (amounts) | | |
| 14a | Total capital (as a percentage of total exposure) not applying the temporary treatment of unrealized gains and losses recognized at fair value through other comprehensive income pursuant to article 468 CRR | - | - | - |
| **Leverage ratio** | | | | |
| 15 | Leverage ratio total exposure measure (full application of CRR I) | 435,145 | 444,665 | 503,576 |
| | Leverage ratio total exposure measure (under the transitional guidance) | 435,307 | 444,767 | 503,576 |
| | Leverage ratio total exposure measure (full application of CRR I) not applying the IFRS 9 transitional provisions or comparable expected credit losses | 435,145 | 444,665 | 503,454 |
| | Leverage ratio total exposure measure (under the transitional guidance) not applying the IFRS 9 transitional provisions or comparable expected credit losses | 435,145 | 444,665 | 503,454 |
| | Leverage ratio under the transitional guidance (as a percentage of the total exposure measure) | 5.76 | 5.30 | 4.74 |
| | Leverage ratio under the transitional guidance (as a percentage of the total exposure measure) not applying the IFRS 9 transitional provisions or comparable expected credit losses | 5.73 | 5.28 | 4.72 |
| 16 | Leverage ratio applying CRR I in full (as a percentage of the total exposure measure) | 5.59 | 5.15 | 4,60 |
| 17 | Leverage ratio applying CRR I in full (as a percentage of the total exposure measure) not applying the IFRS 9 transitional provisions or comparable expected credit losses | 5.59 | 5.15 | 4.58 |
| 17a | Leverage ratio not applying the temporary treatment of unrealized gains and losses recognized at fair value through other comprehensive income pursuant to article 468 CRR | - | - | - |

1 Full application of CRR I, i.e. with regard to own funds pursuant to the CRR I rules and the currently applicable CRR II transitional provisions.

Use of the IFRS 9 transitional provisions pursuant to article 473a CRR affects total capital – particularly CET1 and T2 – and the RWAs. CET1 increased by €45 million to €136 million as at December 31, 2020 (September 30, 2020: increase of €91 million). By contrast, T2 declined to €83 million owing to the required adjustment of the excess of €47 million (September 30, 2020: adjustment of €36 million). Overall, total capital therefore went up by €53 million (September 30, 2020: increase of €55 million). Although the RWAs also had to be increased, by €13 million to €79 million (September 30, 2020: increase of €66 million), due to application of these transitional provisions, the CET1 ratio and the T1 ratio each improved by 0.08 percent (September 30, 2020: improvement in CET1 ratio of 0.05 percent and improvement in T1 ratio of 0.05 percent) compared with the ratio when the transitional provisions are not applied. This effect ultimately influenced the total capital ratio, which improved by 0.03 percent (September 30, 2020: improvement of 0.03 percent).

Consequently, the leverage ratio total exposure measure had to be adjusted by €162 million (September 30, 2020: €102 million). This resulted in a leverage ratio pursuant to the transitional guidance of 5.76 percent (applying CRR I in full: 5.59 percent). If these IFRS 9 transitional provisions were not applied, the leverage ratio pursuant to the transitional guidance would have been 5.73 percent (applying CRR I in full: 5.59 percent).

Fig. 14 shows the **items, features, and terms and conditions** of the additional Tier 1 capital instruments classified as **additional Tier 1 capital** (AT1) before consolidation.

FIG. 14 – ADDITIONAL TIER 1 CAPITAL INSTRUMENTS AS AT DECEMBER 31, 2020 (PURSUANT TO ANNEX II OF IMPLEMENTING REGULATION (EU) NO. 1423/2013)

| Issuer | Volume (€ million) | Interest rate (%)[2] | Start date | Maturity | Next call date |
|---|---|---|---|---|---|
| DZ BANK Capital Funding LLC, Wilmington[1] | 300 | 3m EURIBOR + 250bp | Nov. 7, 2003 | Perpetual | Feb. 7, 2021 |
| DZ BANK Capital Funding LLC II, Wilmington[1] | 500 | 3m EURIBOR + 160bp | Nov. 22, 2004 | Perpetual | Feb. 22, 2021 |
| DZ BANK Capital Funding LLC III, Wilmington[1] | 350 | 3m EURIBOR + 150bp | Jun. 6, 2005 | Perpetual | Mar. 4, 2021 |
| DZ BANK Perpetual Funding (Jersey) Limited, St. Helier[1] | 45 | 3m EURIBOR + 110bp | Jan. 9, 2006 | Perpetual | Jan. 9, 2021 |
| DZ BANK Perpetual Funding (Jersey) Limited, St. Helier[1] | 84 | 3m EURIBOR + 80bp | Feb. 13, 2006 | Perpetual | Feb. 13, 2021 |
| DZ BANK Perpetual Funding (Jersey) Limited, St. Helier[1] | 4 | 3m EURIBOR + 100bp | Mar. 17, 2006 | Perpetual | Mar. 17, 2021 |
| DZ BANK Perpetual Funding (Jersey) Limited, St. Helier[1] | 87 | 3m EURIBOR + 80bp | Sep. 4, 2006 | Perpetual | Jan. 4, 2021 |
| DZ BANK Perpetual Funding (Jersey) Limited, St. Helier[1] | 40 | 3m EURIBOR + 50bp | Apr. 16, 2007 | Perpetual | Jan. 16, 2021 |
| **Subtotal I** | **1,410** | | | | |
| DZ BANK | 221 | 12m EURIBOR + 420bp | Nov. 11, 2015 | Perpetual | Aug. 1, 2021 |
| DZ BANK | 221 | 12m EURIBOR + 420bp | Nov. 11, 2015 | Perpetual | Aug. 1, 2021 |
| DZ BANK | 74 | 4.85%, from Aug. 1, 2021 12m EURIBOR + 420bp | Nov. 11, 2015 | Perpetual | Aug. 1, 2021 |
| DZ BANK | 134 | 5.5%, from Aug. 1, 2026 12m EURIBOR + 420bp | Nov. 11, 2015 | Perpetual | Aug. 1, 2026 |
| DZ BANK | 100 | 4.85%, from Aug. 1, 2021 fixed rate based on 5-year euro mid-swap rate + 440bp | Nov. 11, 2015 | Perpetual | Aug. 1, 2021 |
| DZ BANK | 624 | 12m EURIBOR + 305bp | Nov. 19, 2019 | Perpetual | Aug. 1, 2025 |
| DZ BANK | 147 | 3.00%, from Aug. 1, 2025 fixed-rate swap rate + 305bp | Nov. 19, 2019 | Perpetual | Aug. 1, 2025 |
| DZ BANK | 382 | 3.29%, from Aug. 1, 2030 fixed-rate swap rate + 305bp | Nov. 19, 2019 | Perpetual | Aug. 1, 2030 |
| DZ BANK | 246 | 3.03%, from Aug. 1, 2025 fixed rate based on 5-year euro mid-swap rate + 318bp | Nov. 19, 2019 | Perpetual | Aug. 1, 2025 |
| **Subtotal II** | **2,150** | | | | |
| **Total** | **3,560** | | | | |

1. Instruments subject to phase-out arrangements pursuant to articles 484 and 486 CRR.
2. bp = basis points.

**Tier 2 capital (T2)** amounted to €3,591 million as at the reporting date (September 30, 2020: €3,611 million). The bulk of this amount (€2,341 million) was attributable to own funds instruments as at December 31, 2020 (September 30, 2020: €2,413 million). In the last five years before their maturity date, these components of Tier 2 capital are only included after they have been amortized on a straight-line basis.

Fig. 15 provides an overview of the items, features, and terms and conditions related to this subordinated capital.

FIG. 15 – SUBORDINATED CAPITAL AS AT DECEMBER 31, 2020 (PURSUANT TO ANNEX II OF IMPLEMENTING REGULATION (EU) NO. 1423/2013)

| Issuer | Volume | | Interest rate (%) | Start date | Maturity |
|---|---|---|---|---|---|
| | € million | Currency million | | | |
| DZ BANK | 15 | €15 | 7.000 to 7.070 | 2009 | 2021 |
| DZ BANK | 224 | €224 | 3.640 to 5.000 | 2013 to 2014 | 2021 |
| DZ BANK | 6 | USD 7 | 2.600 | 2015 | 2021 |
| DZ BANK | 156 | €156 | 3.300 to 6.350 | 2009 to 2013 | 2022 |
| DZ BANK | 30 | €30 | 4.039 to 7.250 | 2003 | 2023 |
| DZ BANK | 281 | €281 | 3.230 to 4.370 | 2013 | 2023 |
| DZ BANK | 111 | CHF 120 | 3.240 | 2013 | 2023 |
| DZ BANK | 38 | €38 | 1.750 | 2015 | 2023 |
| DZ BANK | 72 | €72 | 6.500 | 2009 | 2024 |
| DZ BANK | 5 | €5 | 0.425 to 0.430 | 2019 | 2024 |
| DZ BANK | 3 | €3 | 5.700 | 2010 | 2025 |
| DZ BANK | 278 | €278 | 2.250 to 2.890/ | 2015 | 2025 |
| DZ BANK | 20 | €20 | 0.565 | 2020 | 2025 |
| DZ BANK | 1 | €1 | 3.080 | 2015 | 2027 |
| DZ BANK | 235 | €235 | 0.500 to 1.259 | 2020 | 2027 |
| DZ BANK | 13 | €13 | 0.990 to 1.040 | 2019 | 2029 |
| DZ BANK | 64 | €64 | 3.085 to 3.300 | 2015 | 2030 |
| DZ BANK | 50 | €50 | 3.500 fixed/ | 2015 | 2030 |
| DZ BANK | 81 | USD 100 | 4.800 to 4.900 | 2015 | 2030 |
| DZ BANK | 1,123 | €1,123 | 0.780 to 1.800 | 2020 | 2030 |
| DZ BANK | 5 | €5 | 1.000 | 2020 | 2032 |
| DZ BANK | 18 | €18 | 1.780 | 2020 | 2035 |
| DZ BANK | 75 | €75 | 1.860 | 2020 | 2040 |
| DVB | 100 | €100 | 2.000 | 2015 | 2021 |
| DVB | 77 | €77 | 2.300 to 2.560 | 2015 | 2022 |
| DVB | 50 | €50 | 2.000 | 2015 | 2023 |
| **Total** | **3,131** | | | | |

1 bp = basis points.

Another component of own funds derives from the **comparison of loan loss allowances** pursuant to article 159 CRR, which DZ BANK carries out at banking group level. In this comparison, the expected losses computed on the IRBA exposure classes of central governments and central banks, institutions, corporates, and retail business are compared with the amounts that can effectively be recognized in the annual or interim financial statements for actual or potential impairment losses (split into receivables that are in default and not in default).

This **comparison of loan loss allowances for receivables that are in default** produced an **excess**, i.e. the loss allowances recognized for the IRBA exposures in the exposure classes listed above exceeded the expected losses for these exposures. The comparison of loan loss allowances for receivables that are not in default produced a shortfall, i.e. the expected losses for the IRBA exposures in the exposure classes listed above exceeded the loss allowances recognized for these exposures.

The bank classifies the **excess** computed for the DZ BANK banking group for **receivables that are in default** as Tier 2 capital in accordance with article 62 sentence 1 letter d CRR. This classification is consequently capped at 0.6 percent of the risk-weighted IRBA exposure amounts. This cap had no effect as at December 31, 2020. The amount included in Tier 2 capital was calculated at €322 million (September 30, 2020: €274 million).

The total eligible amount (Fig. 12, row 50) for the DZ BANK banking group was calculated at €405 million (September 30, 2020: €327 million).

The bank classifies the excess computed for the DZ BANK banking group for receivables that are not in default as Tier 2 capital in accordance with article 159 CRR. The amount included in Tier 2 capital was calculated at €83 million (September 30, 2020: €17 million).

As at the reporting date, there was a **shortfall** (Fig. 12, row 12) totaling €174 million (September 30, 2020: €168 million) for **long-term equity investments** that was deducted from common equity Tier 1 capital pursuant to article 36 (1) letter d CRR II.

Pursuant to article 437 (1) letter b CRR II, the DZ BANK banking group is obliged to disclose a description of the **main features of the common equity Tier 1, additional Tier 1, and Tier 2 capital instruments issued** in accordance with Implementing Regulation (EU) No. 1423/2013.

This description is published in a separate annex on DZ BANK's website in the Investor Relations section under Bondholder Information, subsection Capital Instruments, together with the **full terms and conditions connected with these capital instruments**, whose publication is required pursuant to article 437 (1) letter c CRR II

(https://www.dzbank.de/content/dzbank_de/de/home/unser_profil/investorrelations/info_fuer_fremdkapitalgeber/kapitalinstrumente.disclaimer.disclaimer_kapitalinstrumente.html).

### 4.2.2 Reconciliation of equity reported on the balance sheet with regulatory own funds of the DZ BANK banking group

(Article 437 (1) letter a CRR)

One of the disclosure requirements is a reconciliation of equity reported under IFRS with equity reported for companies consolidated for regulatory purposes (Financial Reporting, FINREP) and regulatory own funds (Common Reporting, COREP).

This reconciliation as at the reporting date is shown in Fig. 16.

FIG. 16 – RECONCILIATION OF EQUITY REPORTED ON THE BALANCE SHEET WITH REGULATORY OWN FUNDS AS AT DECEMBER 31, 2020 (ARTICLE 437 (1) LETTER A CRR IN CONJUNCTION WITH ANNEX I OF IMPLEMENTING REGULATION (EU) NO. 1423/2013)

| € million | Carrying amounts on consolidated balance sheet in accordance with financial reporting (IFRS) | Consolidation/deconsolidation of entities | Carrying amounts under scope of regulatory console-dation (FINREP) | Regulatory law (COREP) | Reference to Fig. 12 – Structure of own funds |
|---|---|---|---|---|---|
| **Assets** | | | | | |
| Cash and cash equivalents | 68,354 | 150 | 68,504 | - | |
| Loans and advances to banks | 103,020 | -99 | 102,921 | - | |
| Loans and advances to | 190,294 | 2,822 | 193,116 | - | |
| Hedging instruments (positive fair values) | 161 | - | 161 | - | |
| Financial assets held for | 42,846 | -965 | 41,881 | - | |
| Investments | 60,232 | 7,352 | 67,584 | - | |
| Investments held by insurance companies | 121,668 | -121,668 | - | - | |
| Property, plant and equipment, investment property, and right-of-use assets | 1,744 | 23 | 1,767 | - | |

| € million | Carrying amounts on consolidated balance sheet in accordance with financial reporting (IFRS) | Consolidation/deconsolidation of entities | Carrying amounts under scope of regulatory console-dation (FINREP) | Regulatory law (COREP) | Reference to Fig. 12 – Structure of own funds |
|---|---|---|---|---|---|
| Income tax assets | 879 | -316 | 563 | 287 | |
| Other assets | 5,516 | -2,878 | 2,638 | 714 | |
| Loss allowances | -2,320 | -40 | -2,360 | - | |
| Non-current assets and disposal groups classified as | 199 | -115 | 84 | - | |
| Fair value changes of the hedged items in portfolio hedges of interest-rate risk | 1,980 | - | 1,980 | - | |
| **Total assets** | **594,573** | **-115,734** | **478,839** | - | |
| **Equity and liabilities** | | | | | |
| Deposits from banks | 177,852 | 82 | 177,934 | - | |
| Deposits from customers | 133,925 | 4,770 | 138,695 | - | |
| Debt certificates issued including bonds | 70,500 | 207 | 70,707 | - | |
| Hedging instruments (negative fair values) | 2,638 | - | 2,638 | - | |
| Financial liabilities held for trading | 50,404 | 92 | 50,496 | - | |
| Provisions | 4,003 | 41 | 4,044 | - | |
| Insurance liabilities | 111,213 | -111,213 | - | - | |
| Income tax liabilities | 1,229 | -1,015 | 214 | 33 | |
| Other liabilities | 10,243 | -7,361 | 2,882 | - | |
| Subordinated capital | 3,090 | 20 | 3,110 | - | |
| Liabilities included in disposal groups classified as held for | 2 | -1 | 1 | - | |
| Fair value changes of the hedged items in portfolio hedges of interest-rate risk | 315 | - | 315 | - | |
| **Common equity Tier 1 (CET1) before regulatory adjustments** | | | | | |
| Subscribed capital | 4,926 | - | 4,926 | 4,926 | |
| Capital reserve | 5,551 | - | 5,551 | 5,552 | |
| Retained earnings | 10,553 | -537 | 10,016 | 10,511 | |
| Reserve from other comprehensive income | 2,212 | 49 | 2,261 | 1,487 | |
| Non-controlling interests | 3,093 | -1,210 | 1,883 | 143 | |
| Unappropriated earnings | 579 | 342 | 921 | 635 | |
| **Total common equity Tier 1 (CET1) before regulatory adjustments** | | | | 23,253 | |
| **Common equity Tier 1 (CET1): regulatory adjustments** | | | | | |
| **Capital deductions** | | | | | |
| Loan loss allowances resulting from prudent valuation requirements (negative amount) | | | | -254 | 7 |
| Intangible assets (negative amount) | -715 | 1 | -714 | -514 | 8 |
| Deferred taxes related to other intangible assets (negative amount) | 27 | 6 | 33 | 33 | 8 |
| Deferred tax assets that rely on future profitability, not arising from temporary differences (negative amount) | -14 | 3 | -11 | -11 | 10 |
| Hedge reserve (cash flow hedge reserve) | 0 | 0 | 0 | 0 | 11 |

| € million | Carrying amounts on consolidated balance sheet in accordance with financial reporting (IFRS) | Consolidation/deconsolidation of entities | Carrying amounts under scope of regulatory console-dation (FINREP) | Regulatory law (COREP) | Reference to Fig. 12 – Structure of own funds |
|---|---|---|---|---|---|
| Negative amounts resulting from the calculation of expected loss amounts | | | | -174 | 12 |
| Effects resulting from measurement of own liabilities | | | | 134 | 14/14a |
| Defined benefit pension fund assets | | | | 0 | 15 |
| Holdings of the CET1 instruments of financial-sector entities where those entities have reciprocal cross-holdings with the institution | | | | -2 | 17 |
| Exposure arising from the following items qualifying for a risk weight of 1,250%, where the institution opts for the deduction alternative | | | | -38 | 20a |
| Deductible deferred tax assets that rely on future profitability, arising from temporary differences (negative amount) | -497 | 221 | -276 | - | 21 |
| Other adjustments to common equity Tier 1 under the transitional guidance pursuant to article 473a CRR | | | | 136 | 27b |
| Other capital elements or deductions from common equity Tier 1 | | | | -88 | 27a |
| **Total regulatory adjustments to common equity Tier 1 (CET1)** | | | | **-777** | **28** |
| **Common equity Tier 1 (CET1) after regulatory adjustments** | | | | **22,476** | **29** |
| **Additional Tier 1 capital (AT1) before regulatory adjustments** | | | | | |
| Capital instruments and related share premium accounts (additional equity components) | 2,245 | - | 2,245 | 2,150 | 30<br>31 |
| Amount of qualifying items referred to in article 484 (4) CRR and the related share premium accounts subject to phase out from AT1 | 1,410 | - | 1,410 | 493 | 33 |
| Non-controlling interests in subsidiaries | | | | 24 | 34 |
| Qualifying Tier 1 capital instruments included in consolidated AT1 capital (including non-controlling interests not included in row 5) issued by subsidiaries and held by third parties | | | | - | 35 |
| **Additional Tier 1 capital (AT1) before regulatory adjustments** | | | | **2,667** | **36** |
| **Additional Tier 1 capital (AT1): regulatory adjustments** | | | | | |

| € million | Carrying amounts on consolidated balance sheet in accordance with financial reporting (IFRS) | Consolidation/deconsolidation of entities | Carrying amounts under scope of regulatory console-dation (FINREP) | Regulatory law (COREP) | Reference to Fig. 12 – Structure of own funds |
|---|---|---|---|---|---|
| Direct and indirect holdings by an institution of its own AT1 instruments (negative amount) | 47 | -20 | 27 | -65 | 37 |
| Holdings of AT1 instruments of financial-sector entities where those entities have reciprocal cross-holdings with the institution designed to artificially inflate the institution's own funds (negative amount) | | | | - | 38 |
| Direct and indirect holdings by the institution of AT1 capital instruments of financial-sector entities where the institution does not have a significant investment in those entities (above 10% and net of eligible short positions) (negative amount) | | | | - | 39 |
| Direct and indirect holdings by the institution of AT1 capital instruments of financial-sector entities where the institution has a significant investment in those entities (above 10% and net of eligible short positions) (negative amount) | | | | - | 40 |
| Qualifying T2 deductions that exceed the T2 capital of the institution (negative amount) | | | | - | 42 |
| **Total regulatory adjustments to additional Tier 1 capital (AT1)** | | | | -65 | 43 |
| **Additional Tier 1 capital (AT1) after regulatory adjustments** | | | | **2,602** | **44** |
| **Tier 1 capital (T1 = CET1 + AT1)** | | | | **25,078** | **45** |
| **Tier 2 capital (T2) before regulatory adjustments** | | | | | |
| Capital instruments and related share premium accounts | 3,090 | 20 | 3,110 | 2,341 | 46 |
| Amount of qualifying items referred to in article 484 (5) CRR and the related share premium accounts subject to phase out from T2 | | | | 918 | 47 |
| Qualifying own funds instruments in consolidated T2 capital (including non-controlling interests and AT1 instruments not included in rows 5 or 34) issued by subsidiaries and held by third parties | | | | 63 | 48 |
| of which: instruments issued by subsidiaries subject to phase out | | | | - | 49 |

| € million | Carrying amounts on consolidated balance sheet in accordance with financial reporting (IFRS) | Consolidation/deconsolidation of entities | Carrying amounts under scope of regulatory console-dation (FINREP) | Regulatory law (COREP) | Reference to Fig. 12 – Structure of own funds |
|---|---|---|---|---|---|
| Credit risk adjustments | | | | - | - |
| IRB excess of provisions over expected losses, eligible | | | | 405 | 50 |
| **Tier 2 capital (T2) before regulatory adjustments** | | | | **3,726** | **51** |
| **Tier 2 capital (T2): regulatory adjustments** | | | | | |
| Direct and indirect holdings by an institution of its own T2 instruments and subordinated loans (negative amount) | | | | -51 | 52 |
| Holdings of T2 instruments and subordinated loans of financial-sector entities where those entities have reciprocal cross-holdings with the institution designed to artificially inflate the institution's own funds (negative amount) | | | | - | 53 |
| Direct and indirect holdings by the institution of T2 instruments and subordinated loans of financial-sector entities where the institution does not have a significant investment in those entities (above 10% and net of eligible short positions) (negative amount) | | | | - | 54 |
| of which: new holdings not subject to transitional arrangements | | | | - | 54a |
| of which: holdings existing before January 1, 2013 and subject to transitional arrangements | | | | - | 54b |
| Direct and indirect holdings by the institution of T2 instruments and subordinated loans of financial-sector entities where the institution has a significant investment in those entities (above 10% and net of eligible short positions) (negative amount) | | | | -1 | 55 |
| Regulatory adjustments to Tier 2 capital in respect of amounts subject to pre-CRR treatment and transitional treatments subject to phase out pursuant to Regulation (EU) No. 575/2013 (i.e. CRR residual amounts) | | | | -83 | 56 |
| Total regulatory adjustments to Tier 2 capital (T2) | | | | -135 | 57 |
| **Tier 2 capital (T2) after regulatory adjustments** | | | | **3,591** | **58** |

| € million | Carrying amounts on consolidated balance sheet in accordance with financial reporting (IFRS) | Consolidation/deconsolidation of entities | Carrying amounts under scope of regulatory console-dation (FINREP) | Regulatory law (COREP) | Reference to Fig. 12 – Structure of own funds |
|---|---|---|---|---|---|
| Equity (IFRS/FINREP)/own funds (COREP) | 29,159 | -1,356 | 27,803 | 28,669 | 59 |
| Total equity and liabilities | 594,573 | -115,734 | 478,839 | | |

FIG. 17 – RECONCILIATION OF EQUITY REPORTED ON THE BALANCE SHEET WITH REGULATORY OWN FUNDS AS AT JUNE 30, 2020 (ARTICLE 437 (1) LETTER A CRR IN CONJUNCTION WITH ANNEX I OF IMPLEMENTING REGULATION (EU) NO. 1423/2013)

| € million | Carrying amounts on consolidated balance sheet in accordance with financial reporting (IFRS) | Consolidation/deconsolidation of entities | Carrying amounts under scope of regulatory consolidation (FINREP) | Regulatory law (COREP) | Reference to Fig. 5 in the half-yearly report |
|---|---|---|---|---|---|
| **Assets** | | | | | |
| Cash and cash equivalents | 75,764 | 127 | 75,891 | - | |
| Loans and advances to banks | 105,968 | -186 | 105,782 | - | |
| Loans and advances to customers | 190,097 | 2,574 | 192,671 | - | |
| Hedging instruments (positive fair | 225 | - | 225 | - | |
| Financial assets held for trading | 50,063 | -754 | 49,309 | - | |
| Investments | 59,096 | 7,103 | 66,199 | - | |
| Investments held by insurance | 115,430 | -115,430 | - | - | |
| Property, plant and equipment, investment property, and right-of-use assets | 1,545 | 23 | 1,568 | - | |
| Income tax assets | 935 | -420 | 515 | 360 | |
| Other assets | 5,483 | -3,069 | 2,414 | 526 | |
| Loss allowances | -2,628 | -37 | -2,665 | - | |
| Non-current assets and disposal groups classified as held for sale | 237 | -138 | 99 | - | |
| Fair value changes of the hedged items in portfolio hedges of interest-rate risk | 1,981 | - | 1,981 | - | |
| Total assets | 604,196 | -110,207 | 493,989 | - | |
| **Equity and liabilities** | | | | | |
| Deposits from banks | 168,130 | 140 | 168,270 | - | |
| Deposits from customers | 143,403 | 4,466 | 147,869 | - | |
| Debt certificates issued including | 78,773 | 192 | 78,965 | - | |
| Hedging instruments (negative fair | 1,672 | - | 1,672 | - | |
| Financial liabilities held for trading | 61,605 | 35 | 61,640 | - | |
| Provisions | 3,658 | 47 | 3,705 | - | |
| Insurance liabilities | 106,296 | -106,296 | - | - | |
| Income tax liabilities | 1,325 | -1,066 | 259 | 12 | |
| Other liabilities | 8,777 | -6,549 | 2,228 | - | |
| Subordinated capital | 2,081 | 21 | 2,102 | - | |
| Liabilities included in disposal groups classified as held for sale | 1 | - | 1 | - | |
| Fair value changes of the hedged items in portfolio hedges of interest-rate risk | 300 | - | 300 | - | |
| **Common equity Tier 1 (CET1) before regulatory adjustments** | | | | | |
| Subscribed capital | 4,926 | - | 4,926 | 4,926 | 1 |
| Capital reserve | 5,551 | - | 5,551 | 5,552 | 1 |
| Retained earnings | 10,372 | -246 | 10,126 | 10,525 | 2 |
| Reserve from other comprehensive | 1,770 | 118 | 1,888 | 1,208 | 3 |
| Non-controlling interests | 2,980 | -1,122 | 1,858 | 145 | 5 |
| Unappropriated earnings | 331 | 53 | 384 | 205 | 5a |

| € million | Carrying amounts on consolidated balance sheet in accordance with financial reporting (IFRS) | Consolidation/deconsolidation of entities | Carrying amounts under scope of regulatory consolidation (FINREP) | Regulatory law (COREP) | Reference to Fig. 5 in the half-yearly report |
|---|---|---|---|---|---|
| **Total common equity Tier 1 (CET1) before regulatory adjustments** | | | | **22,561** | **6** |
| **Common equity Tier 1 (CET1): regulatory adjustments** | | | | | |
| **Capital deductions** | | | | | |
| Loan loss allowances resulting from prudent valuation requirements (negative amount) | | | | -258 | 7 |
| Intangible assets (negative amount) | -527 | 1 | -526 | -526 | 8 |
| Deferred taxes related to other intangible assets (negative amount) | 7 | 5 | 12 | 12 | 8 |
| Deferred tax assets that rely on future profitability, not arising from temporary differences (negative amount) | -37 | 25 | -12 | -12 | 10 |
| Hedge reserve (cash flow hedge reserve) | 0 | - | 0 | - | 11 |
| Negative amounts resulting from the calculation of expected loss amounts | | | | -165 | 12 |
| Effects resulting from measurement of own liabilities | | | | -349 | 14/14a |
| Defined benefit pension fund assets | | | | -1 | 15 |
| Holdings of the CET1 instruments of financial-sector entities where those entities have reciprocal cross-holdings with the institution | | | | -2 | 17 |
| Exposure arising from the following items qualifying for a risk weight of 1,250%, where the institution opts for the deduction alternative | | | | -28 | 20a |
| Deductible deferred tax assets that rely on future profitability, arising from temporary differences (negative amount) | -574 | 226 | -348 | - | 21 |
| Other adjustments to common equity Tier 1 under the transitional guidance pursuant to article 473a CRR | | | | 106 | 27b |
| Other capital elements or deductions from common equity Tier 1 | | | | -88 | 27a |
| **Total regulatory adjustments to common equity Tier 1 (CET1)** | | | | **1,310** | **28** |
| **Common equity Tier 1 (CET1) after regulatory adjustments** | | | | **21,251** | **29** |
| **Additional Tier 1 capital (AT1) before regulatory adjustments** | | | | | |
| Capital instruments and related share premium accounts (additional equity components) | 2,245 | - | 2,245 | 2,150 | 30<br>31 |
| Amount of qualifying items referred to in article 484 (4) CRR and the related share premium accounts subject to phase out from AT1 | 1,410 | - | 1,410 | 493 | 33 |

| € million | Carrying amounts on consolidated balance sheet in accordance with financial reporting (IFRS) | Consolidation/deconsolidation of entities | Carrying amounts under scope of regulatory consolidation (FINREP) | Regulatory law (COREP) | Reference to Fig. 5 in the half-yearly report |
|---|---|---|---|---|---|
| Qualifying Tier 1 capital instruments included in consolidated AT1 capital (including non-controlling interests not included in row 5) issued by subsidiaries and held by third parties | | | | - | 35 |
| **Additional Tier 1 capital (AT1) before regulatory adjustments** | | | | **2,668** | **36** |
| **Additional Tier 1 capital (AT1): regulatory adjustments** | | | | | |
| Direct and indirect holdings by an institution of its own AT1 instruments (negative amount) | 35 | -20 | 15 | -65 | 37 |
| Holdings of AT1 instruments of financial-sector entities where those entities have reciprocal cross-holdings with the institution designed to artificially inflate the institution's own funds (negative amount) | | | | - | 38 |
| Direct and indirect holdings by the institution of AT1 capital instruments of financial-sector entities where the institution does not have a significant investment in those entities (above 10% and net of eligible short positions) (negative amount) | | | | - | 39 |
| Direct and indirect holdings by the institution of AT1 capital instruments of financial-sector entities where the institution has a significant investment in those entities (above 10% and net of eligible short positions) (negative amount) | | | | - | 40 |
| Qualifying T2 deductions that exceed the T2 capital of the institution (negative amount) | | | | - | 42 |
| **Total regulatory adjustments to additional Tier 1 capital (AT1)** | | | | **-65** | **43** |
| **Additional Tier 1 capital (AT1) after regulatory adjustments** | | | | **2,603** | **44** |
| **Tier 1 capital (T1 = CET1 + AT1)** | | | | **23,854** | **45** |
| **Tier 2 capital (T2) before regulatory adjustments** | | | | | |
| Capital instruments and related share premium accounts | 2,081 | 21 | 2,102 | 1,055 | 46 |
| Amount of qualifying items referred to in article 484 (5) CRR and the related share premium accounts subject to phase out from T2 | | | | 918 | 47 |
| Qualifying own funds instruments in consolidated T2 capital (including non-controlling interests and AT1 instruments not included in rows 5 or 34) issued by subsidiaries and held by third parties | | | | 51 | 48 |

| € million | Carrying amounts on consolidated balance sheet in accordance with financial reporting (IFRS) | Consolidation/deconsolidation of entities | Carrying amounts under scope of regulatory consolidation (FINREP) | Regulatory law (COREP) | Reference to Fig. 5 in the half-yearly report |
|---|---|---|---|---|---|
| of which: instruments issued by subsidiaries subject to phase out | | | | - | 49 |
| Credit risk adjustments | | | | - | - |
| IRB excess of provisions over expected losses, eligible | | | | 330 | 50 |
| **Tier 2 capital (T2) before regulatory adjustments** | | | | **2,354** | **51** |
| **Tier 2 capital (T2): regulatory adjustments** | | | | | |
| Direct and indirect holdings by an institution of its own T2 instruments and subordinated loans (negative amount) | | | | -51 | 52 |
| Holdings of T2 instruments and subordinated loans of financial-sector entities where those entities have reciprocal cross-holdings with the institution designed to artificially inflate the institution's own funds (negative amount) | | | | - | 53 |
| Direct and indirect holdings by the institution of T2 instruments and subordinated loans of financial-sector entities where the institution does not have a significant investment in those entities (above 10% and net of eligible short positions) (negative amount) | | | | - | 54 |
| of which: new holdings not subject to transitional arrangements | | | | - | 54a |
| of which: holdings existing before January 1, 2013 and subject to transitional arrangements | | | | - | 54b |
| Direct and indirect holdings by the institution of T2 instruments and subordinated loans of financial-sector entities where the institution has a significant investment in those entities (above 10% and net of eligible short positions) (negative amount) | | | | -1 | 55 |
| Regulatory adjustments to Tier 2 capital in respect of amounts subject to pre-CRR treatment and transitional treatments subject to phase out pursuant to Regulation (EU) No. 575/2013 (i.e. CRR residual amounts) | | | | - | 56 |
| **Total regulatory adjustments to Tier 2 capital (T2)** | | | | **-52** | **57** |
| **Tier 2 capital (T2) after regulatory adjustments** | | | | **2,302** | **58** |
| **Equity (IFRS/FINREP)/own funds (COREP)** | **28,175** | **-1,197** | **26,978** | **26,155** | **59** |
| **Total equity and liabilities** | **604,196** | **-110,207** | **493,989** | | |

The differences between the assets and the equity and liabilities reported in the IFRS consolidated financial statements and the DZ BANK banking group's assets and equity and liabilities under FINREP arose from different entities being included in each scope of consolidation and from different consolidation methods.

The variance in the consolidation methods relates to R+V, which was consolidated using the equity method in the DZ BANK banking group's financial statements under FINREP but was fully consolidated in the consolidated financial statements. As a result, the figure for non-controlling interests was €1,236 million lower (June 30, 2020: €1,153 million lower).

Differences in the scope of consolidation also arose at the level of the consolidated subgroups BSH, DVB, and UMH.

The differences between the equity under FINREP and the common equity Tier 1 capital under the CRR/COREP arise solely from the provisions of the CRR. The reconciliation figures shown in Fig. 16 are explained below.

– The retained earnings according to FINREP include the losses arising from revaluation of defined benefit pension plans in an amount of €778 million. In COREP, this line item is included in accumulated other comprehensive income (Fig. 12, row 3). The retained earnings according to FINREP include other reserves in an amount of €2,586 million that, under COREP, are also recognized in accumulated other comprehensive income (Fig. 12, row 3). By contrast, the fund for home savings risk is not eligible as CET1 according to COREP and the amount of €3 million can therefore not be included for regulatory purposes.
– According to article 35 CRR in conjunction with article 468 CRR II, 100 percent of the total volume of the reserve from other comprehensive income is eligible as CET1.
– The capital instruments (including related share premium accounts) amounting to €2,245 million contain the €750 million included in additional Tier 1 capital (AT1) under COREP, further AT1 bonds of €1,400 million that had been issued in 2019, and instruments of €95 million that, in accordance with article 63 CRR, may only be shown as Tier 2 capital.
– The non-controlling interests contain further AT1 capital instruments of €1,410 million that, under COREP, have to be shown as additional Tier 1 capital in an amount of €493 million according to the transitional guidance.

As previously explained, the Tier 2 capital (T2) mainly consists of subordinated capital instruments. Under IFRS, these are included in the 'capital instruments and related share premium accounts' line item on the balance sheet. The eligibility of the instruments under the CRR is limited if their term to maturity is less than five years. This is the main reason for the reduction in eligibility for regulatory purposes. Furthermore, use of the pro rata interest reported on the balance sheet is not permitted according to the regulatory requirements.

### 4.2.3 Capital requirements

(Article 438 CRR)

Fig. 18, Fig. 19, and Fig. 20 give an overview of risk-weighted assets and the corresponding capital requirements.

The **DZ BANK banking group's** regulatory **capital requirements** totaled €11,780 million as at the reporting date (September 30, 2020: €11,704 million).

Fig. 18 provides an overview of risk-weighted assets and the associated capital requirements in accordance with the stipulations in EBA/GL/2016/11. The capital requirements in the table below are shown for **credit risk excluding** counterparty credit risk in accordance with the **Standardized Approach to credit risk (CRSA)** and in accordance with the **internal ratings-based approach (IRB approach)** and for **counterparty credit risk (CCR)**. The capital requirement for **securitizations** also differs under the SEC-SA and SEC-ERBA standardized approaches and under the Internal Assessment Approach (SEC-IAA). The capital requirement for **market risk** is determined using the **Standardized Approach** and internal models approach (IMA); for **operational risk**, only the Standardized Approach is used. Row 27 contains amounts below the thresholds for deductions that relate to significant long-term equity investments within the financial sector that are subject to a risk weight of 250 percent and deductions for deferred taxes resulting from temporary differences.

The preferential treatment of infrastructure projects that is allowed under the CRR quick fix in accordance with article 501 CRR reduced DZ BANK AG’s RWAs by €583 million in the IRB corporates – specialized lending exposure class.

FIG. 18 – EU OV1 – OVERVIEW OF RISK-WEIGHTED ASSETS (RWAS)

| Reference to CRR | | | Dec. 31, 2020 | | Sep. 30, 2020 | |
|---|---|---|---|---|---|---|
| € million | | | Risk-weighted assets | Capital requirements | Risk-weighted assets | Capital requirements |
| | 1 | **Credit risk (excluding CCR)** | **117,282** | **9,383** | **116,538** | **9,323** |
| Article 438 (c) and (d) | 2 | of which: Standardized Approach | 23,205 | 1,856 | 22,998 | 1,840 |
| | 3 | of which: foundation IRB (FIRB) approach | 51,619 | 4,129 | 51,456 | 4,116 |
| | 4 | of which: advanced IRB (AIRB) approach | 15,706 | 1,256 | 16,193 | 1,295 |
| Article 438 (d) | 5 | of which: long-term equity investments in the IRB approach under the simple risk-weighted approach or IMA | 26,753 | 2,140 | 25,890 | 2,071 |
| Article 107 | 6 | **Counterparty credit risk (CCR)** | **4,743** | **379** | **4,690** | **375** |
| Article 438 (c) and (d) | 7 | of which: mark-to-market method | 3,344 | 267 | 3,364 | 269 |
| | 8 | of which: original exposure method | - | - | - | - |
| | 9 | of which: Standardized Approach | - | - | - | - |
| | 10 | of which: internal model method (IMM) | - | - | - | - |
| Article 438 (c) and (d) | 11 | of which: risk exposure amount for contributions to the default fund of a central counterparty (CCP) | 309 | 25 | 252 | 20 |
| | 12 | of which: credit valuation adjustments (CVA) | 1,091 | 87 | 1,074 | 86 |
| Article 438 (e) | 13 | **Settlement risk** | **1** | **0** | **3** | **0** |
| Article 449 (o) and (i) | 14 | **Securitization exposure in the banking book (after the cap)** | **4,788** | **383** | **4,774** | **382** |
| | 15 | of which: SEC-IRBA | - | - | - | - |
| | 16 | of which: SEC-SA | 608 | 49 | 612 | 49 |
| | 17 | of which: SEC-ERBA | 785 | 63 | 887 | 71 |
| | 18 | of which: SEC-IAA | 3,395 | 272 | 3,276 | 262 |
| Article 438 (e) | 19 | **Market risk** | **8,388** | **671** | **8,203** | **656** |
| | 20 | of which: Standardized Approach | 1,003 | 80 | 1,024 | 82 |
| | 21 | of which: IMA | 7,386 | 591 | 7,179 | 574 |
| Article 438 (e) | 22 | **Large exposures** | **-** | **-** | - | - |
| Article 438 (f) | 23 | **Operational risk** | **10,608** | **849** | **10,608** | **849** |
| | 24 | of which: Basic Indicator Approach | - | - | - | - |
| | 25 | of which: Standardized Approach | 10,608 | 849 | 10,608 | 849 |
| | 26 | of which: Advanced Measurement | - | - | - | - |
| Article 437 (2), article 48, and article 60 | 27 | Amounts below the thresholds for deduction (subject to 250% risk weight) | 1,441 | 115 | 1,479 | 118 |
| Article 500 | 28 | Floor adjustment | - | - | - | - |
| | 29 | **Total** | **147,252** | **11,780** | **146,295** | **11,704** |

With a capital requirement of €9,383 million, credit risk is particularly important within the DZ BANK banking group. The €957 million rise in risk-weighted assets compared with the previous reporting date (row 29) was largely due to the increase under the internal market risk model (row 21) and the growth of risk-weighted assets resulting from using the equity method for R+V (row 5).

Fig. 19 and Fig. 20 show the capital requirements in relation to the risk types of relevance for regulatory purposes (credit risk, market risk, and operational risk) as at December 31, 2020. These disclosures cover all the entities consolidated for regulatory purposes in the DZ BANK banking group.

FIG. 19 – CAPITAL REQUIREMENTS (PART 1)

| € million | Dec. 31, 2020 Capital requirements | Dec. 31, 2020 Risk-weighted assets | Sep. 30, 2020 Capital requirements | Sep. 30, 2020 Risk-weighted assets |
|---|---|---|---|---|
| **1 Credit risk** | | | | |
| **1.1 Standardized Approach to credit risk** | | | | |
| Central governments or central banks | 69 | 859 | 79 | 989 |
| Regional governments or local authorities | 22 | 275 | 22 | 269 |
| Other public-sector entities | 13 | 158 | 15 | 186 |
| Multilateral development banks | - | - | 0 | 3 |
| International organizations | - | - | - | - |
| Institutions | 48 | 594 | 34 | 427 |
| Corporates | 939 | 11,741 | 965 | 12,066 |
| Retail business | 286 | 3,575 | 297 | 3,715 |
| Exposures secured by mortgages on immovable property | 112 | 1,395 | 113 | 1,408 |
| Exposures in default | 42 | 521 | 45 | 568 |
| Exposures associated with particularly high risk | 69 | 861 | 69 | 861 |
| Covered bonds | 3 | 40 | 3 | 35 |
| Institutions and corporates with a short-term credit assessment | 0 | 0 | 0 | 0 |
| Units or shares in collective investment undertakings (‘CIUs’) | 208 | 2,601 | 198 | 2,475 |
| Other items | 188 | 2,356 | 165 | 2,059 |
| **Total credit risk under the Standardized Approach** | **1,998** | **24,976** | **2,005** | **25,062** |
| **1.2 IRB approaches to credit risk** | | | | |
| Central governments or central banks | 53 | 668 | 60 | 747 |
| Institutions | 632 | 7,900 | 629 | 7,860 |
| Corporates | 3,509 | 43,862 | 3,522 | 44,021 |
| of which: SMEs | 204 | 2,544 | 229 | 2,860 |
| Retail business | 1,205 | 15,060 | 1,208 | 15,103 |
| of which: mortgage-backed | 778 | 9,721 | 765 | 9,560 |
| qualified revolving | - | - | - | - |
| other retail business | 427 | 5,339 | 443 | 5,543 |
| Other non-credit-obligation assets | 142 | 1,777 | 129 | 1,614 |
| **Total under IRB approaches** | **5,541** | **69,267** | **5,548** | **69,345** |
| **1.3 Securitizations** | | | | |
| SEC-IRBA | - | - | - | - |
| of which: re-securitizations | - | - | - | - |
| SEC-SA | 49 | 608 | 49 | 612 |
| of which: re-securitizations | - | - | - | - |
| SEC-ERBA | 63 | 785 | 71 | 887 |
| of which: re-securitizations | - | - | - | - |
| SEC-IAA | 272 | 3,395 | 262 | 3,276 |
| of which: re-securitizations | - | - | - | - |
| **Total securitizations** | **383** | **4,788** | **382** | **4,774** |
| **1.4 Long-term equity investments** | | | | |
| Long-term equity investments under IRB approaches | 2,184 | 27,302 | 2,119 | 26,488 |
| of which: internal modeling approach | - | - | - | - |
| PD/LGD approaches | 9 | 114 | 9 | 116 |
| equity investments subject to threshold deduction (250%) | 35 | 435 | 38 | 481 |
| simple risk-weight approach | 2,140 | 26,753 | 2,071 | 25,890 |
| of which: exchange-traded equity investments | 0 | 6 | - | - |
| equity investments not exchange-traded, but part of a | 4 | 53 | 4 | 53 |
| other equity investments | 2,136 | 26,694 | 2,067 | 25,837 |
| Equity investments exempted from IRB approaches and included in Standardized Approach to credit risk | 5 | 64 | 3 | 33 |
| of which: grandfathering | - | - | - | - |
| **Total long-term equity investments** | **2,189** | **27,367** | **2,122** | **26,521** |
| **1.5 Exposure amount for contributions to default fund of a central counterparty (CCP)** | 25 | 309 | 20 | 252 |
| **1.6 Credit valuation adjustments (CVA charge)** | 87 | 1,091 | 86 | 1,074 |

| € million | Dec. 31, 2020 | | Sep. 30, 2020 | |
|---|---|---|---|---|
| | Capital requirements | Risk-weighted assets | Capital requirements | Risk-weighted assets |
| 1.7 Exposure amount for counterparty and settlement risk | 0 | 1 | 0 | 3 |
| 1.8 Large exposure excess amounts in the trading book | - | - | - | - |
| **Total credit risk** | **10,224** | **127,798** | **10,163** | **127,032** |

FIG. 20 – CAPITAL REQUIREMENTS (PART 2)

| € million | Dec. 31, 2020 | | Sep. 30, 2020 | |
|---|---|---|---|---|
| | Capital requirements | Risk-weighted assets | Capital requirements | Risk-weighted assets |
| **2 Market risk** | | | | |
| **Standardized approach** | 80 | 1,003 | 82 | 1,024 |
| of which: trading book risk exposures | 8 | 103 | 11 | 132 |
| of which: interest-rate risk | 8 | 103 | 11 | 132 |
| of which: general and specific price risk (net interest-rate exposure) | 8 | 103 | 11 | 132 |
| of which: specific price risk for securitization exposures in trading book | 8 | 103 | 11 | 132 |
| of which: specific price risk in correlation trading portfolio | - | - | 0 | 0 |
| of which: equity risk | 0 | 0 | 0 | 0 |
| of which: special approach for position risk from CIUs | 0 | 1 | 0 | 4 |
| of which: currency risk | 71 | 887 | 70 | 876 |
| of which: commodity risk | 1 | 12 | 1 | 11 |
| **Internal modeling approach** | 591 | 7,386 | 574 | 7,179 |
| **Total market risk** | **671** | **8,388** | **656** | **8,203** |
| **3 Operational risk** | | | | |
| Operational risk under Basic Indicator Approach | - | - | - | - |
| Operational risk under Standardized Approach | 849 | 10,608 | 849 | 10,608 |
| Operational risk under AMA | - | - | - | - |
| **Total operational risk** | **849** | **10,608** | 849 | 10,608 |
| **4 Other** | | | | |
| Additional exposures pursuant to article 3 CRR | 37 | 457 | 36 | 452 |
| **Total other exposures** | **37** | **457** | 36 | 452 |
| **Sum total** | **11,780** | **147,252** | **11,704** | **146,295** |

Under the Standardized Approach to credit risk, risk-weighted assets had fallen by €86 million as at the reporting date compared with September 30, 2020. This was mainly due to transactions that matured in the overall DZ BANK Group.

A rise in R+V's carrying amount, calculated in accordance with the equity method, caused a €954 million increase in the exposure for long-term equity investments and can be seen in row 1.4 (long-term equity investments in the IRB approach under the simple risk-weighted approach).

The rise in market risk of €185 million was primarily due to the increase under the internal market risk model, which was attributable to an increase in the external VaR and the incremental risk charge (IRC).

The growth of the total risk amount was largely due to a number of countervailing effects, such as transactions that matured under the Standardized Approach to credit risk and under the foundation IRB approach on the one hand and, on the other, the increase under the internal market risk model and the rise in R+V's carrying amount, calculated in accordance with the equity method.

### 4.2.4 Risk-weighted exposure amounts for specialized lending and long-term equity investments

(Article 438 sentence 2 CRR)

Fig. 21 shows the risk exposures contained in the portfolio as at the reporting date for the banking group's specialized lending under the supervisory slotting approach (assignment of risk weights prescribed by the supervisory authority). It also contains exposures for long-term equity investments under the simple risk-weighted approach, for which prescribed risk weights have to be used.

FIG. 21 – EU CR10 – IRB (SPECIALIZED LENDING AND LONG-TERM EQUITY INVESTMENTS)[1]

**Specialized lending**

€ million

| Regulatory categories | Remaining maturity | On-balance-sheet amount | Off-balance-sheet amount | Risk weight (%) | Exposure amount | RWAs | Expected losses |
|---|---|---|---|---|---|---|---|
| Category 1 | Less than 2.5 years | 299 | 248 | 50% | 473 | 218 | - |
| | Equal to or more than 2.5 years | 3,039 | 455 | 70% | 3,566 | 2,122 | 14 |
| Category 2 | Less than 2.5 years | 237 | 432 | 70% | 530 | 361 | 2 |
| | Equal to or more than 2.5 years | 3,178 | 760 | 90% | 3,812 | 3,196 | 30 |
| Category 3 | Less than 2.5 years | 3 | 21 | 115% | 19 | 22 | 1 |
| | Equal to or more than 2.5 years | 81 | 6 | 115% | 96 | 110 | 3 |
| Category 4 | Less than 2.5 years | - | 22 | 250% | 11 | 27 | 1 |
| | Equal to or more than 2.5 years | 11 | 2 | 250% | 12 | 30 | 1 |
| Category 5 | Less than 2.5 years | - | - | - | - | - | - |
| | Equal to or more than 2.5 years | - | - | - | - | - | - |
| **Total as at Dec. 31, 2020** | **Less than 2.5 years** | **539** | **724** | **-** | **1,032** | **628** | **4** |
| | **Equal to or more than 2.5 years** | **6,308** | **1,223** | **-** | **7,486** | **5,458** | **48** |
| Total as at Jun. 30, 2020 | Less than 2.5 years | 606 | 582 | | 1,033 | 606 | 46 |
| | Equal to or more than 2.5 years | 6,354 | 1,115 | | 7,548 | 6,062 | 87 |

**Long-term equity investments under the simple risk-weighted approach**

| Regulatory categories | On-balance-sheet amount | Off-balance-sheet amount | Risk weight (%) | Exposure amount | RWAs | Capital requirements |
|---|---|---|---|---|---|---|
| Private long-term equity investments | 28 | 0 | 190% | 28 | 53 | 4 |
| Exchange-traded long-term equity investments | 2 | - | 290% | 2 | 6 | 0 |
| Other long-term equity investments | 7,215 | - | 370% | 7,215 | 26,694 | 2,136 |
| **Total as at Dec. 31, 2020** | **7,244** | **0** | | **7,245** | **26,753** | **2,140** |
| Total as at Jun. 30, 2020 | 6,862 | - | | 6,862 | 25,339 | 2,027 |

1 Adjustment of the figures for long-term equity investments as at June 30, 2020 (R+V now recognized at its carrying amount calculated using the equity method).

The exposure amount and RWAs were lower than at June 30, 2020. This decrease was due to transactions that matured in the second half of 2020.

DZ BANK has a significant long-term equity investment in R+V. The carrying amount (before risk weight) of this long-term equity investment is not deducted from DZ BANK's own funds. Instead, it is deemed a risk-weighted asset and backed by own funds. Fig. 22 summarizes the effects for the DZ BANK banking group of the long-term equity investment in R+V.

FIG. 22 – EU INS1 – NON-DEDUCTED PARTICIPATIONS IN INSURANCE UNDERTAKINGS

| | Value | |
|---|---|---|
| € million | **Dec. 31, 2020** | Jun. 30, 2020 |
| Holdings of own funds instruments of a financial-sector entity where the institution has a significant investment not deducted from own funds (before risk-weighting) | 7,043 | 6,635 |
| Total risk-weighted assets (RWAs) | 26,059 | 24,549 |

The €1,510 million increase in risk-weighted assets was mainly the result of the adjustment to R+V's carrying amount, calculated in accordance with the equity method.

### 4.2.5 Capital ratios

The **total capital ratio of the DZ BANK banking group** rose to 19.47 percent as at December 31, 2020 (September 30, 2020: 18.6 percent). The **Tier 1 capital ratio** of 17.03 percent as at the reporting date was also higher than the figure of 16.1 percent as at September 30, 2020. Furthermore, the **common equity Tier 1 capital ratio** of 15.26 percent as at December 31, 2020 was higher than the ratio of 14.3 percent as at September 30, 2020.

FIG. 23 – REGULATORY CAPITAL RATIOS OF THE DZ BANK BANKING GROUP IN ACCORDANCE WITH THE CRR

| % | Total capital ratio | | | Tier 1 capital ratio | | | Common equity Tier 1 capital ratio | | |
|---|---|---|---|---|---|---|---|---|---|
| **Entity** | **Dec. 31, 2020** | Sep. 30, 2020 | Dec. 31, 2019 | **Dec. 31, 2020** | Sep. 30, 2020 | Dec. 31, 2019 | **Dec. 31, 2020** | Sep. 30, 2020 | Dec. 31, 2019 |
| DZ BANK (banking group) | 19.5 | 18.6 | 17.9 | 17.0 | 16.1 | 16.4 | 15.3 | 14.3 | 14.4 |
| DZ BANK (individual institution) | 20.8 | | 19.5 | 16.7 | | 16.7 | 14.4 | | 14.5 |
| BSH (banking group) | 31.6 | | 31.4 | 31.6 | | 31.4 | 31.6 | | 31.4 |
| DVB (banking group) | 57.2 | | 66.0 | 45.9 | | 51.5 | 45.9 | | 51.5 |
| DZ PRIVATBANK (banking group) | 22.4 | | 23.7 | 22.4 | | 23.7 | 22.4 | | 23.7 |
| TeamBank (banking group) | 14.2 | | 13.3 | 12.1 | | 11.1 | 11.8 | | 10.7 |

This increase in the DZ BANK banking group's capital ratios was primarily attributable to the effects described in section 4.2.1. There were no other material changes to the DZ BANK banking group's capital adequacy compared with September 30, 2020.

As at the reporting data, there were no unconsolidated subsidiaries whose own funds fell short of the level of own funds currently stipulated.

### 4.2.6 Regulatory minimum capital requirements

The minimum capital requirements that the DZ BANK banking group had to comply with in 2020 comprised those components of Pillar 1 laid down as mandatory by law and those individually specified by the banking supervisor. Institution-specific requirements under the additional capital requirements in Pillar 2, determined in the outcome of the Supervisory Review and Evaluation Process (SREP) conducted for the DZ BANK banking group in 2019, also had to be satisfied. In this process, the banking supervisor specified a mandatory add-on (Pillar 2 requirement) that, along with other components (see Fig. 24) is factored into the basis of calculation used to determine the threshold for the maximum distributable amount (MDA). Distributions are restricted if capital falls below the MDA threshold.

BaFin has classified DZ BANK as an other systemically important institution (O-SII) since 2016. The DZ BANK banking group had to comply with an **O-SII capital buffer** (comprising common equity Tier 1 capital) as defined in section 10g (1) KWG at a level of 1.00 percent in 2020.

The mandatory minimum requirements and their components applicable as at December 31, 2020 and, as a comparison, as at September 30, 2020, are shown in Fig. 24.

FIG. 24 – REGULATORY MINIMUM REQUIREMENTS

| % | Dec. 31, 2020 | Sep. 30, 2020 |
|---|---|---|
| Minimum requirement for common equity Tier 1 capital | 4.50 | 4.50 |
| Additional Pillar 2 requirement for CET1 | 0.98 | 0.98 |
| Capital conservation buffer | 2.50 | 2.50 |
| Countercyclical capital buffer[1] | 0.01 | 0.01 |
| O-SII capital buffer | 1.00 | 1.00 |
| **Mandatory minimum requirement for common equity Tier 1 capital** | **9.00** | **9.00** |
| Minimum requirement for additional Tier 1 capital[2] | 1.50 | 1.50 |
| Additional Pillar 2 requirement for AT1[2] | 0.33 | 0.33 |
| **Mandatory minimum requirement for Tier 1 capital** | **10.82** | **10.82** |
| Minimum requirement for Tier 2 capital[3] | 2.00 | 2.00 |
| Additional Pillar 2 requirement for T2[3] | 0.44 | 0.44 |
| **Mandatory minimum requirement for total capital** | **13.26** | **13.26** |

1 The value for the countercyclical capital buffer is recalculated at each reporting date. Unlike the other reported values, which apply to the entire financial year, the countercyclical capital buffers shown for 2020 and the third quarter relate solely to the reporting dates of December 31, 2020 and September 30, 2020 respectively.
2 The minimum requirement can also be satisfied with common equity Tier 1 capital.
3 The minimum requirement can also be satisfied with common equity Tier 1 or additional Tier 1 capital.

Because of the COVID-19 pandemic, the supervisory authorities introduced various relief measures for banks, including in relation to the binding minimum capital requirements. For example, a bank can temporarily use up its capital conservation buffer and O-SII capital buffer without incurring sanctions. In such an eventuality, it must submit a capital conservation plan to the supervisory authorities. If, as a result, the combined capital buffer requirement and thus the threshold for the maximum distributable amount are no longer met, the rules regarding the limits for distributions continue to apply. The aforementioned relief measures are not taken into account in Fig. 24.

However, Fig. 24 does take account of the relief measures resulting from early application of the changes to the composition of the additional mandatory capital requirements under Pillar 2. Until December 31, 2019, the additional mandatory Pillar 2 capital requirement had to be met entirely with common equity Tier 1 capital. In view of the COVID-19 pandemic, the use of additional Tier 1 instruments and of Tier 2 instruments is now partially permitted along with common equity Tier 1 capital. This rule had originally been planned for early 2021, but the supervisory authorities decided on April 8, 2020 to bring its implementation forward. This change applies retrospectively from March 12, 2020.

In addition to the aforementioned mandatory Pillar 2 component, there is a recommended own funds amount under Pillar 2 (Pillar 2 guidance, P2G), which likewise is determined from the SREP but, unlike with the mandatory component, failure to comply with P2G does not constitute a breach of regulatory capital requirements and it does not have any influence on the MDA threshold. Nevertheless, this figure is relevant as an early warning indicator for capital planning. Banks are also temporarily not required to comply with the Pillar 2 guidance.

Furthermore, the supervisory authorities in some countries reduced the capital buffer rates used to calculate the countercyclical capital buffer, in some cases lowering them right down to 0 percent. In a decision issued on March 18, 2020, BaFin lowered the domestic countercyclical capital buffer rate to 0 percent (it was originally supposed to be raised to 0.25 percent with effect from July 1, 2020).

Applying CRR I in full (i.e. applying the CRR and the current transitional provisions that have to be applied under the CRR and CRR II), the mandatory minimum capital requirements stipulated by the supervisory authorities and the recommended minimum capital requirements were complied with as at December 31, 2020.

### 4.2.7 Financial conglomerate solvency

The FKAG forms the main legal basis for the supervision of the DZ BANK financial conglomerate. The calculation methodology for the coverage ratio is governed by Commission Delegated Regulation (EU) No. 342/2014 in conjunction with article 49 (1) CRR and Circular 04/2018 from BaFin.

DZ BANK was classified as a financial conglomerate by way of a decision issued by BaFin on December 2, 2005; DZ BANK AG acts as the financial conglomerate's parent company.

The financial conglomerate coverage ratio is the ratio between the total of own funds in the financial conglomerate and the total of solvency requirements for the conglomerate. The resulting ratio must be at least 100 percent.

Financial conglomerate solvency is reported to the supervisory authority annually and is based on the requirements in Circular 04/2018 from BaFin on financial conglomerate solvency.

The solvency ratios as at December 31, 2019 were finalized in the first half of 2020. On the basis of a provisional calculation, the DZ BANK financial conglomerate's eligible own funds as at December 31, 2020 amounted to €35,341 million (as at December 31, 2019 based on the final calculation: €30,039 million). On the other side of the ratio, the solvency requirement based on a provisional calculation was €24,819 million (December 31, 2019 based on the final calculation[1]: €23,552 million). This gives a coverage ratio, based on a provisional calculation, of 142.4 percent (December 31, 2019 based on the final calculation[1]: 127.6 percent), which is significantly in excess of the regulatory minimum requirement of 100 percent.

[1] The solvency requirement and coverage ratio figures reported here for December 31, 2019 are not comparable with the corresponding figures in the 2019 report because of the changes to the calculation methodology. The final solvency requirement came to €17,205 million and the final coverage ratio to 174.6 percent.

# 5 Liquidity adequacy

Liquidity risk is defined in section 2.2 (page 75 and figure 4 on pages 76 and 77) in conjunction with section 4.2.1 (page 98) of the commercial-law risk report.

## 5.1 Management of liquidity adequacy

(ARTICLE 435 (1) CRR)

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

The principles for the management of liquidity adequacy and the risk management strategies and processes in respect of liquidity risk are presented in sections 4.1, 4.2.2, and 4.2.5 (pages 98 to 101) of the commercial-law risk report. The structure and organization of the liquidity risk management function are described in sections 4.2.4 and 4.3.2 (pages 99 to 100 and 105) of the commercial-law risk report. Further details of the scope and nature of the liquidity risk measurement systems are provided in section 4.2.5 (pages 100 and 101) of the commercial-law risk report. Sections 4.2.2, 4.2.4, and 4.2.5 (pages 98 to 99 and pages 99 to 101) of the commercial-law risk report set out the strategies for hedging and mitigating liquidity risk as well as strategies and processes for monitoring the ongoing effectiveness of the measures taken to hedge liquidity risk. A declaration approved by the Board of Managing Directors on the adequacy of the level of liquidity is drawn up annually. This adequacy declaration contains the liquidity risk statement, which describes the institution's entire liquidity risk profile relating to the business strategy (see also section 2.1.4 in this report).

## 5.2 Liquidity coverage ratio (LCR)

The LCR measures whether an adequate buffer is available in the form of liquid assets that enables an institution to compensate for a possible imbalance between inflows and outflows of cash in a 30-day stress scenario. The LCR is the ratio of liquid assets held ('liquidity buffer') to net cash outflows.

Since January 1, 2018, a minimum LCR of 100 percent has had to be maintained. DZ BANK reports the LCR of the banking group, calculated in accordance with the CRR in conjunction with Delegated Regulation (EU) 2015/61 dated July 29, 2015 as amended by Regulation (EU) 2018/1620 dated July 13, 2018, to the supervisory authority on a monthly basis.

The liquidity coverage ratio shown for the DZ BANK banking group in Fig. 25 is based on EBA/GL/2017/01 dated June 21, 2017, which has had to be applied since December 31, 2017. In accordance with EBA/GL/2017/01, the liquidity coverage ratio is disclosed quarterly at consolidated level in line with the descriptions in section 3. The disclosed line items are each calculated as the average of the month-end values for the previous 12 months.

The average LCR for the DZ BANK banking group as at December 31, 2020 calculated in accordance with this method was 141.10 percent (September 30, 2020: 141.45 percent), based on average liquid assets of €92,006 million (September 30, 2020: €88,614 million) and net liquidity outflows of €65,222 million (September 30, 2020: €62,802 million) (Fig. 25).

FIG. 25 – LIQUIDITY COVERAGE RATIO OF THE DZ BANK BANKING GROUP (AVERAGE)

| | | Total weighted value (average) | |
|---|---|---|---|
| | | Dec. 31, 2020 | Sep. 30, 2020 |
| 21 | Liquidity buffer (€ million) | 92,006 | 88,614 |
| 22 | Net liquidity outflows (€ million) | 65,222 | 62,802 |
| 23 | Liquidity coverage ratio (%) | 141.10 | 141.45 |

The LCR did not fall below the minimum ratio at any time and, at present, significantly exceeds it.

In addition, the DZ BANK banking group discloses the liquidity buffer, net liquidity outflows, and the liquidity coverage ratio as at the reporting date at the end of each six-month period in accordance with Delegated Regulation (EU) 2015/61. These are shown in Fig. 26. The LCR as at December 31, 2020 was 146.31 percent (June 30, 2020: 140.25 percent), based on liquid assets of €91,430 million (June 30, 2020: €101,036 million) and net liquidity outflows of €62,489 million (June 30, 2020: €72,037 million). The DZ BANK banking group's LCR is thus higher than the minimum ratio of 100 percent that has been mandatory since 2018.

FIG. 26 – LIQUIDITY COVERAGE RATIO OF THE DZ BANK BANKING GROUP (AS AT THE REPORTING DATE)

| | | Total weighted value (reporting date) | |
|---|---|---|---|
| | | Dec. 31, 2020 | Jun. 30, 2020 |
| 21 | Liquidity buffer (€ million) | 91,430 | 101,036 |
| 22 | Net liquidity outflows (€ million) | 62,489 | 72,037 |
| 23 | Liquidity coverage ratio (%) | 146.31 | 140.25 |

The increase in the LCR from 140.25 percent as at June 30, 2020 to 146.31 percent as at December 31, 2020 was attributable to the ratio's increased sensitivity to net liquidity outflows, with excess cover remaining almost unchanged.

Excess cover in relation to the LCR is the difference between the liquidity buffer and the net liquidity outflows.

FIG. 27 – LEVEL AND COMPONENTS OF THE LCR IN 2020

| Consolidated<br>€ million | | Total unweighted value (average) | | | | Total weighted value (average) | | | |
|---|---|---|---|---|---|---|---|---|---|
| Quarter ending on | | Mar. 31, 2020 | Jun. 30, 2020 | Sep. 30, 2020 | Dec. 31, 2020 | Mar. 31, 2020 | Jun. 30, 2020 | Sep. 30, 2020 | Dec. 31, 2020 |
| Number of data points used in the calculation of the averages | | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| **High-quality liquid assets** | | | | | | | | | |
| 1 | Total high-quality liquid assets (HQLA) | - | - | - | - | 85,534 | 86,906 | 88,614 | 92,006 |
| **Cash outflows** | | | | | | | | | |
| 2 | Retail deposits and deposits from small business customers, of which: | 2,214 | 18,027 | 33,811 | 49,650 | 654 | 683 | 695 | 690 |
| 3 | stable deposits | 514 | 520 | 525 | 525 | 26 | 26 | 26 | 26 |
| 4 | less stable deposits | 1,255 | 1,330 | 1,344 | 1,338 | 183 | 195 | 196 | 194 |
| 5 | Unsecured wholesale funding | 91,991 | 93,798 | 95,861 | 100,480 | 58,646 | 59,759 | 60,677 | 62,273 |

| Consolidated<br>€ million | | Total unweighted value (average) | | | | Total weighted value (average) | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Quarter ending on** | | **Mar. 31, 2020** | **Jun. 30, 2020** | **Sep. 30, 2020** | **Dec. 31, 2020** | **Mar. 31, 2020** | **Jun. 30, 2020** | **Sep. 30, 2020** | **Dec. 31, 2020** |
| 6 | Operational deposits (all counterparties) and deposits in networks of cooperative banks | 36,040 | 36,138 | 36,764 | 40,316 | 9,010 | 9,035 | 9,191 | 10,079 |
| 7 | Non-operational deposits (all counterparties) | 47,660 | 49,174 | 51,147 | 53,224 | 41,345 | 42,239 | 43,535 | 45,255 |
| 8 | Unsecured debt | 8,291 | 8,486 | 7,951 | 6,939 | 8,291 | 8,486 | 7,951 | 6,939 |
| 9 | Secured wholesale funding | | | | | 273 | 234 | 204 | 141 |
| 10 | Additional requirements | 33,920 | 36,289 | 38,545 | 40,360 | 10,918 | 12,113 | 13,196 | 14,067 |
| 11 | Outflows related to derivative exposures and other collateral requirements | 5,592 | 6,780 | 7,767 | 8,500 | 4,199 | 5,134 | 5,971 | 6,557 |
| 12 | Outflows related to loss of funding on debt products | 124 | 147 | 146 | 123 | 124 | 147 | 146 | 123 |
| 13 | Credit and liquidity facilities | 28,204 | 29,362 | 30,632 | 31,737 | 6,594 | 6,832 | 7,080 | 7,387 |
| 14 | Other contractual funding obligations | 1,675 | 1,728 | 1,699 | 1,606 | 1,276 | 1,360 | 1,355 | 1,275 |
| 15 | Other contingent funding obligations | 33,341 | 30,640 | 30,816 | 31,142 | 495 | 637 | 699 | 703 |
| **16** | **Total cash outflows** | | | | | **72,261** | **74,786** | **76,825** | **79,150** |
| **Cash inflows** | | | | | | | | | |
| 17 | Secured lending (e.g. reverse repos) | 6,930 | 7,338 | 7,580 | 7,026 | 986 | 1,094 | 1,040 | 905 |
| 18 | Inflows from fully performing exposures | 11,893 | 12,649 | 13,266 | 13,434 | 8,401 | 9,319 | 10,045 | 10,268 |
| 19 | Other cash inflows | 3,863 | 3,878 | 3,742 | 3,597 | 3,140 | 3,113 | 2,938 | 2,755 |
| EU-19a | (Difference between total weighted inflows and total weighted outflows arising from transactions in third countries where there are transfer restrictions or which are denominated in non-convertible currencies) | | | | | - | - | - | - |
| EU-19b | (Excess inflows from a related specialized credit institution) | | | | | - | - | - | - |
| **20** | **Total cash inflows** | **22,685** | **23,864** | **24,589** | **24,058** | **12,527** | **13,527** | **14,023** | **13,928** |
| EU-20a | Fully exempt inflows | - | - | - | - | - | - | - | - |
| EU-20b | Inflows subject to 90% cap | 219 | 224 | 227 | 227 | 141 | 146 | 147 | 147 |
| EU-20c | Inflows subject to 75% cap | 22,408 | 23,579 | 24,309 | 23,783 | 12,386 | 13,381 | 13,875 | 13,781 |
| 21 | Liquidity buffer | | | | | 85,534 | 86,906 | 88,614 | 92,006 |
| 22 | Total net cash outflows | | | | | 59,734 | 61,260 | 62,802 | 65,222 |
| 23 | Liquidity coverage ratio (%) | | | | | 143.57 | 142.34 | 141.45 | 141.10 |

## 5.3 Qualitative LCR disclosures

Further qualitative explanations regarding the LCR are provided below in accordance with the requirements of EBA/GL/2017/01.

### 5.3.1 Concentration of funding and liquidity sources

The DZ BANK banking group's main short-term and medium-term funding sources on the unsecured money markets essentially comprise deposits from local cooperative banks, deposits from corporate customers and institutional customers, and commercial paper held by institutional investors.

The DZ BANK banking group also obtains long-term funding through structured and non-structured capital market products that are mainly marketed to local cooperative banks and other institutional customers.

A large proportion of the long-term funding results from the issuance of covered bonds such as Pfandbriefe or DZ BANK BRIEFE, which were issued on a decentralized basis, in other words based on the different cover assets at DZ BANK, DZ HYP, and DVB (last repayment in October 2020). Another major source of funding is Bausparkasse Schwäbisch Hall's home savings deposits.

Within the LCR, deposits from corporate customers, deposits from local cooperative banks, and deposits from financial customers with a term to maturity of under 30 days have the biggest impact on the liquidity outflows of the DZ BANK banking group.

The liquidity sources included in the liquidity buffer for the LCR at the level of the DZ BANK banking group predominantly consist of balances with central banks and liquid securities. The dominant liquid securities under assets at level 1 (assets that are of extremely high liquidity and credit quality) are government and regional government bonds, bonds of public-sector entities and multilateral development banks, and extremely high-quality covered bonds. The assets at level 2 (assets that are of high liquidity and credit quality) largely comprise high-quality covered bonds and liquid corporate bonds.

### 5.3.2 Derivative exposures and potential collateral calls

Line item 11 in Fig. 27 – outflows related to derivative exposures and other collateral requirements – consists of potential outflows as a result of

– fluctuations in the fair value of derivatives and the related volatility of the collateral,
– subsequent collateral requirements caused by an assumed worsening of an entity's own credit rating by three notches,
– other potential collateral calls.

The biggest contribution to this line item is the simulation – using the historical look-back approach (HLBA) – of the effects of fluctuations in the fair value of derivatives on the collateral. This involves simulating a stress scenario specified by the supervisory authority.

The effects of subsequent collateral requirements owing to a simulated worsening of the credit rating of the entities in the DZ BANK banking group by three notches also have a significant influence on the aforementioned line item. This is because some OTC collateral agreements that entities in the DZ BANK banking group have entered into contain rating-based triggers. A downgrade in an entity's own credit rating would trigger collateral calls by counterparties.

### 5.3.3 Currency mismatch in the liquidity coverage ratio

At the level of the DZ BANK banking group, the US dollar was the only significant foreign currency in 2020 as the liabilities in this currency exceeded 5 percent of the total liabilities of the DZ BANK banking group. This gives rise to a requirement to disclose the LCR in US dollars on a monthly basis. However, there is no minimum LCR requirement for US dollars. As at December 31, 2020, the 5 percent threshold was not exceeded.

The currency mismatch in the liquidity coverage ratio for the US dollar, pound sterling, the Swiss franc, the Hong Kong dollar, and the Singapore dollar, which are the most significant currencies for the DZ BANK banking group besides the euro, is calculated and monitored monthly.

Details of the management of foreign-currency liquidity risk can be found in section 3.6.2 (pages 95 and 96) under 'Economic liquidity adequacy' in the commercial-law risk report.

### 5.3.4 Degree of centralization of liquidity management and interaction between the group's units

In the DZ BANK banking group, there is no group waiver pursuant to article 8 CRR that has been approved by the supervisory authority for the disclosure of, and compliance with, regulatory liquidity ratios. As a result, each subsidiary listed in Fig. 7 in the liquidity ratios column has to meet the LCR requirements itself.

Liquidity management of the entities in the DZ BANK banking group and the interaction between the individual entities in the banking group are described in the business report, section 5 'Financial position'.

Disclosures relating to the management of liquidity risk in the DZ BANK banking group can be found in section 4.2.5 (pages 100 and 101) 'Management of limits for liquidity risk' in the commercial-law risk report.

### 5.3.5 Remarks about the LCR disclosure

Short-term deposits from major corporate customers and financial customers have a big impact on the level of liquidity outflows under the LCR of the DZ BANK banking group. The corresponding line items (Fig. 27, rows 5 and 6) are dominated by deposits from the local cooperative banks. DZ BANK performs the central cash-pooling function for these institutions. Local cooperative banks with available liquidity can invest it with DZ BANK, while those requiring liquidity can obtain it from DZ BANK.

The DZ BANK banking group also has inflows that, contrary to the fundamental eligibility cap of 75 percent pursuant to article 33 (4) of Delegated Regulation (EU) 2015/61, are subject to a cap of 90 percent (Fig. 27, row EU-20b). These are attributable to TeamBank AG, which has been granted approval by the competent supervisory authority to apply the aforementioned article in conjunction with article 33 (5) of Delegated Regulation (EU) 2015/61. This entity's liquidity inflows are therefore not subject to the usual cap on eligibility for the LCR.

## 5.4 Net stable funding ratio (NSFR)

The net stable funding ratio (NSFR) is a structural liquidity ratio that is used to measure the degree to which an institution matches the maturities of its funding over a 1-year horizon. It is the ratio of available stable funding (ASF) to required stable funding (RSF). Required stable funding is based on the receivables recognized on the assets side of the balance sheet, whereas available stable funding is derived from the equity and liabilities side of the balance sheet. In the calculation of the NSFR, the individual RSF and ASF items are weighted with the factors specified by the supervisory authority.

The NSFR supplements the regulatory requirements in Pillar 1 for measuring liquidity risk, and its final definition was set out when CRR II was published on May 20, 2019. According to the requirements in CRR II, a minimum NSFR of 100 percent has to be maintained at all times with effect from June 28, 2021.

# 6 Credit risk

Credit risk is defined in section 2.2 (page 75 and figure 4 on pages 76 and 77) in conjunction with section 6.1 (page 118 and 119) of the commercial-law risk report.

## 6.1 Credit risk management objectives and policies

(ARTICLE 435 (1) CRR)

The principles for the management of credit risk and the strategies and processes in respect of credit risk management (article 435 (1) CRR) are presented in sections 6.1 and 6.2 (pages 118 to 120) of the commercial-law risk report. The structure and organization of the credit risk management function are described in section 6.4 (page 121) of the commercial-law risk report. The scope and nature of the credit risk reporting and measuring systems are presented in section 6.5.1 (pages 122 and 123) of the commercial-law risk report, while sections 6.5.3 to 6.5.8 (pages 124 to 130) of the commercial-law risk report set out the strategies for hedging and mitigating credit risk and the strategies and processes for monitoring the ongoing effectiveness of the measures taken to hedge credit risk.

## 6.2 Credit risk information

Sections 6.2 to 6.6 of this risk report contain information about credit risk attaching to the instruments subject to Part 3 Title II Chapter 2 (Standardized Approach) and Chapter 3 (IRB approach) CRR. Risk-weighted exposures arising from DZ BANK's trading activities are not covered here; please refer to section 8 'Market risk' in this report instead. Disclosures on exposures with counterparty credit risk (section 6.8) are not covered here either. In line with the requirements in EBA/GL/2016/11, disclosures on securitizations are also not included here. Instead, they are covered in section 7 'Securitizations'. Moreover, securities financing transactions are included in these sections on credit risk rather than in those on counterparty credit risk.

### 6.2.1 Qualitative information on credit risk

(ARTICLE 442 SENTENCE 1 LETTERS A AND B CRR)

The amount and structure of the lending volume are key factors in determining credit risk.

For external risk reporting in the DZ BANK banking group, the lending volume is broken down pursuant to article 442 sentence 1 letters c to f CRR by the exposure classes used for the Standardized Approach to credit risk and the internal ratings-based approach.

In accordance with article 442 sentence 1 letters c to i CRR, the exposures after accounting offsets and without taking into account the effects of credit risk mitigation are broken down by geographical distribution, industry, and residual maturity so that volume concentrations can be identified. Non-performing and past-due exposures as well as specific and general credit risk adjustments are broken down in the same way.

The policies and procedures governing the recognition of loss allowances applicable to the entities in the DZ BANK banking group (article 442 sentence 1 letter b CRR) and other accounting-related details on credit risk (article 442 sentence 1 letter a CRR) are described in section 6.5.8 (page 130) of the commercial-law risk report and in note 5 of the notes to the consolidated financial statements.

A transaction has to be classified as a non-performing exposure if it is **impaired** according to IFRS 9 or if a default pursuant to article 178 CRR has arisen. Under IFRS 9, impaired exposures are those that are classed as credit-impaired (stage 3).

The entities in the Bank sector classify a loan as **non-performing** if it has been rated between 5A and 5E on the VR credit rating master scale. This corresponds to the definition of default specified by the CRR. Non-performing loans are also referred to by the abbreviation NPL.

An exposure is classified as **past due** if interest payments, the repayment of principal, or any fees owed were not paid at the time that they became due.

The **volume of past due receivables** (by more than 90 days) that were not considered impaired as at December 31, 2020 amounted to €6 million and were attributable to one group entity. Although this group entity implemented the materiality threshold applicable to the groupwide definition of default for its definition of default, classification as impaired, and classification as an NPE, it uses a count of the number of days past due without a materiality threshold to allocate receivables to clusters based on the number of days past due in accordance with FINREP.

Distressed restructuring, which, according to article 178 (3) letter d CRR, is an indication that a liability is unlikely to be settled, is defined as follows at DZ BANK: a forbearance measure pursuant to Annex V of Commission Implementing Regulation (EU) No. 680/2014 that results in a present value loss of more than 1 percent or where settlement of the liability is considered unlikely. Certain features of the forbearance measure carried out, such as a large final installment or a long interest-only period, are regarded as particularly critical.

### 6.2.2 Quantitative information on credit risk

#### 6.2.2.1 Total and average amounts of net exposures by exposure class

(ARTICLE 442 SENTENCE 1 LETTER C CRR)

Fig. 28 compares the net exposures at the reporting date with the average amount of the net exposures over the course of the reporting year, broken down by exposure class and by risk approach. The average exposure is shown for each exposure class as the average for the four quarterly reporting dates of the year. For on-balance-sheet items, the net value is the gross carrying amount of the exposure (after write-offs) less allowances/impairments. Off-balance-sheet items are shown at their gross carrying amount, i.e. nominal amount without application of a credit conversion factor (CCF), less provisions.

FIG. 28 – EU CRB-B – TOTAL AND AVERAGE NET AMOUNT OF EXPOSURES

| | Exposure class | a | b | a | b |
|---|---|---|---|---|---|
| | | Dec. 31, 2020 | | Dec. 31, 2019 | |
| | € million | Net value of exposures at the end of the period | Average net exposures over the period | Net value of exposures at the end of the period | Average net exposures over the period |
| 1 | Central governments and central banks | 7,425 | 9,570 | 11,783 | 14,520 |
| 2 | Institutions | 39,000 | 46,653 | 38,845 | 40,366 |
| 3 | Corporates | 108,868 | 107,587 | 105,687 | 98,654 |
| 4 | of which: specialized lending | 33,938 | 32,566 | 31,814 | 29,320 |
| 5 | of which: SMEs | 9,742 | 8,604 | 6,486 | 3,730 |
| 6 | Retail business | 84,386 | 82,297 | 78,716 | 67,036 |
| 7 | Exposures secured by mortgages on immovable | 70,203 | 67,860 | 64,098 | 52,605 |
| 8 | of which: SMEs | 0 | 1 | - | - |
| 9 | of which: non-SMEs | 70,203 | 67,859 | 64,098 | 52,605 |
| 10 | Qualified revolving | - | - | - | - |
| 11 | Other retail business | 14,183 | 14,437 | 14,618 | 14,431 |
| 12 | of which: SMEs | 380 | 383 | 371 | 125 |
| 13 | of which: non-SMEs | 13,803 | 14,054 | 14,247 | 14,332 |
| 14 | Equity exposures | 7,327 | 7,025 | 7,214 | 7,092 |
| 15 | Other non-credit-obligation assets | 1,784 | 1,698 | 1,613 | 1,740 |
| **16** | **Total IRB approach** | **248,791** | **254,830** | **243,858** | **229,408** |
| 17 | Central governments and central banks | 72,202 | 70,201 | 51,617 | 59,997 |
| 18 | Regional governments or local authorities | 30,221 | 30,810 | 32,256 | 29,427 |
| 19 | Public-sector entities | 9,878 | 9,860 | 9,331 | 8,469 |
| 20 | Multilateral development banks | - | 18 | 13 | 88 |
| 21 | International organizations | 735 | 632 | 477 | 461 |
| 22 | Institutions | 108,325 | 107,371 | 99,324 | 96,925 |
| 23 | Corporates | 18,219 | 18,305 | 18,126 | 15,594 |
| 24 | of which: SMEs | 1,914 | 1,941 | 1,912 | 2,020 |
| 25 | Retail business | 7,159 | 7,360 | 8,988 | 9,152 |
| 26 | of which: SMEs | 1,817 | 2,064 | 1,920 | 1,860 |
| 27 | Exposures secured by mortgages on immovable | 2,991 | 2,914 | 2,847 | 2,030 |
| 28 | of which: SMEs | 43 | 32 | 12 | 15 |
| 29 | Exposures in default | 496 | 565 | 534 | 359 |
| 30 | Exposures associated with particularly high risk | 330 | 363 | 333 | 468 |
| 31 | Covered bonds | 1,012 | 964 | 883 | 837 |
| 32 | Exposures to institutions and corporates with a short- | 0 | 0 | 0 | 0 |
| 33 | CIUs | 3,783 | 3,410 | 3,216 | 2,838 |
| 34 | Equity exposures | 60 | 35 | 100 | 93 |
| 35 | Other items | 571 | 395 | 290 | 310 |
| **36** | **Total Standardized Approach** | **255,982** | **253,743** | **228,336** | **227,048** |
| **37** | **Total** | **504,773** | **509,116** | **472,194** | **456,456** |

The changes in the exposures under the Standardized Approach were predominantly attributable to the exposure classes of central governments and central banks and institutions. The changes in the exposures under the IRB approach were mainly due to the increases in the three exposure classes of retail business, institutions, and exposures secured by mortgages on immovable property. The overall increase was the result of the sharp rise in new business in the DZ BANK banking group.

### 6.2.2.2 Geographical structure of the exposure classes

(ARTICLE 442 SENTENCE 1 LETTER D CRR)

Fig. 29 gives a geographical breakdown of the credit-risk-bearing exposures by country group. The lending volume is assigned to the individual country groups using the breakdown of the International Monetary Fund (IMF), which is updated annually. A country is deemed material if its share of the total exposure (Standardized Approach to credit risk and IRB approach) exceeds the materiality threshold of 5 percent. This system is essentially applied to all country-group breakdowns related to credit risk that follow in this regulatory risk report.

Whereas the table below shows the exposures broken down by sector and aggregated into country groups, annex 1 of this report contains a full, detailed breakdown of the exposures by geographical area and material country. Annex 2 of this report contains the disclosures for the countries categorized as non-material, which have been allocated to the Other countries column here.

FIG. 29 – EU CRB-C – GEOGRAPHICAL BREAKDOWN OF EXPOSURES (SUMMARY)

| **Exposure class** | | **Geographical area** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | **a** | **b** | **c** | **d** | **e** | **f** | **g** | **g** |
| **€ million** | | **Germany** | **Other industrialized countries** | **Advanced economies** | **Emerging markets** | **Supranational organizations** | **Not allocated to a geographical area** | **Dec. 31, 2020** | **Dec. 31, 2019** |
| 1 | Central governments and central banks | 8 | 5,401 | 1 | 114 | 1,902 | - | 7,425 | 11,783 |
| 2 | Institutions | 8,493 | 27,394 | 749 | 2,364 | - | - | 39,000 | 38,845 |
| 3 | Corporates | 82,765 | 20,301 | 1,073 | 4,730 | - | - | 108,868 | 105,687 |
| 3a | of which: specialized lending | 23,392 | 9,270 | 170 | 1,105 | - | - | 33,938 | 31,814 |
| 3b | of which: SMEs | 9,550 | 190 | - | 2 | - | - | 9,742 | 6,486 |
| 4 | Retail business | 83,875 | 479 | 12 | 20 | - | - | 84,386 | 78,716 |
| 4a | Exposures secured by mortgages on immovable | 69,833 | 347 | 8 | 15 | - | - | 70,203 | 64,098 |
| | of which: SMEs | 0 | - | - | - | - | - | 0 | - |
| | of which: non-SMEs | 69,833 | 347 | 8 | 15 | - | - | 70,203 | 64,098 |
| 4b | Qualified revolving | - | - | - | - | - | - | - | - |
| 4c | Other retail business | 14,042 | 133 | 4 | 5 | - | - | 14,183 | 14,618 |
| | of which: SMEs | 376 | 3 | 1 | - | - | - | 380 | 371 |
| | of which: non-SMEs | 13,666 | 129 | 3 | 5 | - | - | 13,803 | 14,247 |
| 5 | Equity exposures | 7,247 | 79 | 0 | 1 | - | - | 7,327 | 7,214 |
| | Other non-credit-obligation assets | 852 | 0 | - | - | - | 932 | 1,784 | 1,613 |
| **6** | **Total IRB approach** | **183,240** | **53,654** | **1,835** | **7,229** | **1,902** | **932** | **248,791** | **243,858** |
| 7 | Central governments and central banks | 61,090 | 9,359 | 547 | 1,192 | - | 15 | 72,202 | 51,617 |
| 8 | Regional governments or local authorities | 26,863 | 3,357 | - | 1 | - | - | 30,221 | 32,256 |
| 9 | Public-sector entities | 8,673 | 1,205 | 0 | - | - | - | 9,878 | 9,331 |
| 10 | Multilateral development banks | - | - | - | - | - | - | - | 13 |
| 11 | International | - | - | - | - | 735 | - | 735 | 477 |
| 12 | Institutions | 107,705 | 531 | 50 | 38 | - | 1 | 108,325 | 99,324 |
| 13 | Corporates | 11,837 | 4,714 | 138 | 1,494 | - | 36 | 18,219 | 18,126 |
| 13a | of which: SMEs | 1,768 | 145 | 1 | - | - | - | 1,914 | 1,912 |
| 14 | Retail business | 4,911 | 1,209 | 657 | 381 | - | - | 7,159 | 8,988 |
| 14a | of which: SMEs | 1,817 | 0 | - | - | - | - | 1,817 | 1,920 |
| 15 | Exposures secured by mortgages on immovable | 1,348 | 9 | 57 | 1,577 | - | - | 2,991 | 2,847 |
| 15a | of which: SMEs | 43 | - | - | - | - | - | 43 | 12 |

| Exposure class | | Geographical area | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | a | b | c | d | e | f | g | g |
| € million | | Germany | Other industrialized countries | Advanced economies | Emerging markets | Supranational organizations | Not alloca-ted to a geographical area | Dec. 31, 2020 | Dec. 31, 2019 |
| 16 | Exposures in default | 314 | 60 | 53 | 68 | - | - | 496 | 534 |
| 17 | Exposures associated with particularly high | 269 | 60 | - | - | - | - | 330 | 333 |
| 18 | Covered bonds | 854 | 124 | 26 | 8 | - | - | 1,012 | 883 |
| 19 | Exposures to institutions | - | 0 | - | - | - | - | 0 | - |
| 20 | CIUs | 393 | 3,208 | 16 | 115 | 52 | - | 3,783 | 2,739 |
| 21 | Equity exposures | 55 | 0 | 5 | 0 | - | - | 60 | 577 |
| 22 | Other items | 452 | 54 | 15 | 45 | - | 5 | 571 | 290 |
| **23** | **Total Standardized Approach** | **224,765** | **23,890** | **1,563** | **4,921** | **787** | **57** | **255,982** | **228,336** |
| **24** | **Total as at Dec. 31,** | **408,005** | **77,543** | **3,398** | **12,150** | **2,689** | **989** | **504,773** | |
| | Total as at Dec. 31, 2019 | 374,550 | 76,610 | 4,213 | 14,001 | 1,715 | 1,129 | | 472,194 |

As at December 31, 2020, the DZ BANK banking group's total exposure was concentrated in Germany with a total of €408,005 million (December 31, 2019: €374,550 million); other industrialized countries accounted for €77,543 million (December 31, 2019: €76,610 million).

### 6.2.2.3 Exposure classes by sector

(ARTICLE 442 SENTENCE 1 LETTER E CRR)

Fig. 30 shows the breakdown of on-balance-sheet and off-balance-sheet exposures by sector; the exposures are assigned solely on the basis of the direct counterparties. They are assigned to the individual sectors based on the industry codes used by Deutsche Bundesbank. This system also applies to all other sector breakdowns related to risk in this report.

FIG. 30 – EU CRB-D – CONCENTRATION OF EXPOSURES BY INDUSTRY OR COUNTERPARTY TYPE

| | Exposure class | a | b | c | d | e | e |
|---|---|---|---|---|---|---|---|
| | € million | Financial sector | Public sector | Corporates and retail customers | Other | Dec. 31, 2020 | Dec. 31, 2019 |
| 1 | Central governments and central | 5,850 | 1,568 | 8 | - | 7,425 | 11,783 |
| 2 | Institutions | 38,999 | - | 1 | - | 39,000 | 38,845 |
| 3 | Corporates | 10,786 | 91 | 97,991 | - | 108,868 | 105,687 |
| 3a | of which: specialized lending | 2,059 | 53 | 31,827 | - | 33,938 | 31,814 |
| 3b | of which: SMEs | 58 | - | 9,684 | - | 9,742 | 6,486 |
| 4 | Retail business | 391 | 0 | 83,995 | - | 84,386 | 78,716 |
| 4a | Exposures secured by mortgages on immovable property | 368 | 0 | 69,835 | - | 70,203 | 64,098 |
| | of which: SMEs | - | - | 0 | - | 0 | - |
| | of which: non-SMEs | 368 | 0 | 69,835 | - | 70,203 | 64,098 |
| 4b | Qualified revolving | - | - | - | - | - | - |
| 4c | Other retail business | 23 | - | 14,160 | - | 14,183 | 14,618 |
| | of which: SMEs | 2 | - | 377 | - | 380 | 371 |
| | of which: non-SMEs | 21 | - | 13,782 | - | 13,803 | 14,247 |
| 5 | Equity exposures | 3,391 | - | 3,936 | - | 7,327 | 7,214 |
| | Other non-credit-obligation assets | 0 | -201 | 779 | 1,205 | 1,784 | 1,613 |
| **6** | **Total IRB approach** | **59,417** | **1,458** | **186,710** | **1,205** | **248,791** | **243,858** |
| 7 | Central governments and central | 63,207 | 8,976 | 5 | 15 | 72,202 | 51,617 |
| 8 | Regional governments or local | - | 28,365 | 1,856 | - | 30,221 | 32,256 |
| 9 | Public-sector entities | 7,773 | 1,966 | 139 | - | 9,878 | 9,331 |
| 10 | Multilateral development banks | - | - | - | - | - | 13 |
| 11 | International organizations | - | 735 | - | - | 735 | 477 |
| 12 | Institutions | 108,316 | - | 8 | 1 | 108,325 | 99,324 |
| 13 | Corporates | 7,173 | 236 | 10,772 | 39 | 18,219 | 18,126 |
| 13a | of which: SMEs | 243 | - | 1,671 | - | 1,914 | 1,912 |
| 14 | Retail business | 59 | 0 | 7,100 | - | 7,159 | 8,988 |
| 14a | of which: SMEs | 25 | 0 | 1,792 | - | 1,817 | 1,920 |
| 15 | Exposures secured by mortgages on immovable property | 1,149 | - | 1,842 | - | 2,991 | 2,847 |
| 15a | of which: SMEs | - | - | 43 | - | 43 | 12 |
| 16 | Exposures in default | 11 | 28 | 457 | - | 496 | 534 |
| 17 | Exposures associated with particularly high risk | 175 | - | 144 | 10 | 330 | 333 |
| 18 | Covered bonds | 1,012 | - | - | - | 1,012 | 883 |
| 19 | Exposures to institutions and corporates with a short-term credit assessment | 0 | - | - | - | 0 | 0 |
| 20 | CIUs | 760 | 60 | 1,207 | 1,755 | 3,783 | 3,216 |
| 21 | Equity exposures | 2 | - | 57 | 0 | 60 | 100 |
| 22 | Other items | - | - | 15 | 556 | 571 | 290 |
| **23** | **Total Standardized Approach** | **189,638** | **40,367** | **23,601** | **2,376** | **255,982** | **228,336** |
| **24** | **Total as at Dec. 31, 2020** | **249,056** | **41,825** | **210,311** | **3,581** | **504,773** | |
| | Total as at Dec. 31, 2019 | 222,873 | 42,088 | 204,107 | 3,150 | | 472,194 |

As at December 31, 2020, a high proportion of the DZ BANK banking group's lending volume (53 percent) continued to be concentrated in the financial sector (December 31, 2019: 47 percent). In addition to the local cooperative banks, the borrowers in this customer segment comprised banks from other sectors of the banking industry and other financial institutions. The volume attributable to public-sector entities decreased to €41,825 million as at December 31, 2020 (December 31, 2019: €42,088 million); the volume of lending to private individuals and companies grew to €210,311 million as at the reporting date (December 31, 2019: €204,107 million).

In its role as central institution for the Volksbanken Raiffeisenbanken cooperative financial network, DZ BANK provides funding for the entities in the DZ BANK Group and for the cooperative banks. For this reason, the cooperative banks account for one of the largest receivables items in the DZ BANK Group's credit portfolio. DZ BANK also supports the cooperative banks in the provision of larger-scale funding to corporate customers.

The resulting syndicated business, DZ BANK, DZ HYP and DVB's direct business with corporate customers in Germany and abroad, the retail real-estate business under the umbrella of BSH, TeamBank's consumer finance business, and DZ HYP's real-estate lending and local authority loans businesses determine the sectoral breakdown of the remainder of the portfolio.

### 6.2.2.4 Lending volume by maturity band and exposure class

(ARTICLE 442 SENTENCE 1 LETTER F CRR)

Fig. 31 and Fig. 32 show the on-balance-sheet and off-balance-sheet exposures net of loss allowances broken down by contractual residual maturity and by CRR exposure class in order to comply with both the CRR and EBA/GL/2016/11. The disclosure is based on the IFRS carrying amounts for the companies consolidated for regulatory purposes. The table is limited to the material exposure classes pursuant to articles 112 and 147 CRR and applying EBA/GL/2014/14; non-material exposures are aggregated under Other items. This report contains a separate table showing only the residual maturities of on-balance-sheet exposures (pursuant to EBA/GL/2016/11). However, there is also a table showing the on-balance-sheet and off-balance-sheet exposures and SFTs (pursuant to article 442 CRR).

FIG. 31 – EU CRB-E – MATURITY OF EXPOSURES (ONLY ON-BALANCE-SHEET EXPOSURES)

| Exposure class | | a | b | c | d | e | f | f |
|---|---|---|---|---|---|---|---|---|
| | | Net exposure value | | | | | | |
| € million | | On demand | <= 1 year | > 1 year <= 5 years | > 5 years | No stated maturity | Dec. 31, 2020 | Dec. 31, 2019 |
| 1 | Central governments and central banks | 4,975 | 53 | 587 | 1,128 | 16 | 6,760 | 8,950 |
| 2 | Institutions | 11,202 | 4,736 | 8,445 | 7,169 | 0 | 31,552 | 32,242 |
| 3 | Corporates | 4,762 | 8,177 | 25,608 | 38,290 | - | 76,837 | 77,560 |
| 3a | of which: specialized lending | 1,852 | 1,543 | 9,746 | 15,288 | - | 28,430 | 26,833 |
| 3b | of which: SMEs | 166 | 399 | 822 | 6,710 | - | 8,097 | 5,121 |
| 4 | Retail business | 67 | 5,754 | 13,223 | 58,034 | - | 77,078 | 71,915 |
| 4a | Exposures secured by mortgages on immovable property | 55 | 1,389 | 11,396 | 50,127 | - | 62,968 | 57,386 |
| | of which: SMEs | - | - | - | 0 | - | 0 | - |
| | of which: non-SMEs | 55 | 1,389 | 11,396 | 50,127 | - | 62,967 | 57,386 |
| 4b | Qualified revolving | - | - | - | - | - | - | - |
| 4c | Other retail business | 12 | 4,364 | 1,827 | 7,907 | - | 14,110 | 14,529 |
| | of which: SMEs | - | 374 | 3 | 2 | - | 380 | 371 |
| | of which: non-SMEs | 12 | 3,990 | 1,824 | 7,905 | - | 13,731 | 14,158 |
| 5 | Equity exposures | 3,508 | 9 | - | - | 3,810 | 7,327 | 7,214 |
| | Other non-credit-obligation assets | 371 | 81 | 33 | - | 1,218 | 1,703 | 1,613 |
| **6** | **Total IRB approach** | **24,884** | **18,810** | **47,897** | **104,621** | **5,044** | **201,257** | **199,494** |

| Exposure class | | a | b | c | d | e | f | f |
|---|---|---|---|---|---|---|---|---|
| | | Net exposure value | | | | | | |
| 7 | Central governments and central banks | 3,801 | 1,400 | 840 | 6,180 | 426 | 12,647 | 39,561 |
| 8 | Regional governments or local authorities | 110 | 2,298 | 6,945 | 20,750 | 42 | 30,145 | 31,868 |
| 9 | Public-sector entities | 117 | 730 | 4,047 | 4,893 | 0 | 9,788 | 9,200 |
| 10 | Multilateral development | - | - | - | - | - | - | - |
| 11 | International organizations | 0 | 48 | 247 | 438 | 3 | 735 | 477 |
| 12 | Institutions | 1,201 | 8,410 | 13,091 | 61,465 | 371 | 84,538 | 80,438 |
| 13 | Corporates | 2,523 | 2,275 | 3,137 | 3,768 | 421 | 12,125 | 12,450 |
| 13a | of which: SMEs | 38 | 432 | 499 | 723 | - | 1,692 | 1,784 |
| 14 | Retail business | 48 | 412 | 2,108 | 2,240 | 93 | 4,900 | 7,113 |
| 14a | of which: SMEs | 2 | 72 | 1,124 | 426 | - | 1,625 | 1,762 |
| 15 | Exposures secured by mortgages on immovable property | 0 | 249 | 1,142 | 1,593 | 0 | 2,984 | 2,842 |
| 15a | of which: SMEs | - | 9 | 12 | 21 | - | 42 | 11 |
| 16 | Exposures in default | 121 | 26 | 111 | 139 | 43 | 440 | 497 |
| 17 | Exposures associated with particularly high risk | 0 | 44 | 101 | 34 | - | 179 | 193 |
| 18 | Covered bonds | - | 97 | 411 | 504 | - | 1,012 | 737 |
| 19 | Exposures to institutions and corporates with a short-term credit assessment | 0 | - | - | - | - | 0 | 0 |
| 20 | CIUs | 1 | 5 | 152 | 1,874 | 1,746 | 3,779 | 3,211 |
| 21 | Equity exposures | - | - | - | 5 | 55 | 60 | 99 |
| 22 | Other items | 17 | 51 | 168 | 145 | 61 | 442 | 198 |
| **23** | **Total Standardized Approach** | **7,939** | **16,046** | **32,500** | **104,028** | **3,262** | **163,774** | **188,886** |
| **24** | **Total as at Dec. 31, 2020** | **32,823** | **34,856** | **80,397** | **208,649** | **8,306** | **365,032** | |
| | Total as at Dec. 31, 2019 | **62,538** | **33,591** | **79,652** | **201,947** | **10,671** | | **388,380** |

FIG. 32 – EU CRB-E – MATURITY OF EXPOSURES (ON-BALANCE-SHEET AND OFF-BALANCE-SHEET EXPOSURES AND SFTS)

| | **Exposure class** | a | b | c | d | e | f | f |
|---|---|---|---|---|---|---|---|---|
| | | **Net exposure value** | | | | | | |
| | **€ million** | **On demand** | **<= 1 year** | **> 1 year <= 5 years** | **> 5 years** | **No stated maturity** | **Dec. 31, 2020** | **Dec. 31, 2019** |
| 1 | Central governments and central banks | 4,975 | 167 | 587 | 1,128 | 568 | 7,425 | 11,783 |
| 2 | Institutions | 11,669 | 10,622 | 8,495 | 7,728 | 487 | 39,000 | 38,845 |
| 3 | Corporates | 7,307 | 19,659 | 37,423 | 44,431 | 48 | 108,868 | 105,687 |
| 3a | of which: specialized lending | 4,192 | 2,068 | 11,052 | 16,627 | - | 33,938 | 31,814 |
| 3b | of which: SMEs | 199 | 1,095 | 1,063 | 7,385 | - | 9,742 | 6,486 |
| 4 | Retail business | 82 | 10,945 | 14,044 | 59,315 | - | 84,386 | 78,716 |
| 4a | Exposures secured by mortgages on immovable property | 71 | 6,544 | 12,185 | 51,404 | - | 70,203 | 64,098 |
| | of which: SMEs | - | - | - | 0 | - | 0 | - |
| | of which: non-SMEs | 71 | 6,544 | 12,185 | 51,403 | - | 70,203 | 64,098 |
| 4b | Qualified revolving | - | - | - | - | - | - | - |
| 4c | Other retail business | 12 | 4,401 | 1,859 | 7,912 | - | 14,183 | 14,618 |
| | of which: SMEs | - | 374 | 3 | 2 | - | 380 | 371 |
| | of which: non-SMEs | 12 | 4,027 | 1,856 | 7,909 | - | 13,803 | 14,247 |
| 5 | Equity exposures | 3,508 | 9 | - | - | 3,810 | 7,327 | 7,214 |
| | Other non-credit-obligation assets | 451 | 82 | 33 | - | 1,218 | 1,784 | 1,613 |
| **6** | **Total IRB approach** | **27,993** | **41,483** | **60,583** | **112,602** | **6,130** | **248,791** | **243,858** |
| 7 | Central governments and central banks | 3,801 | 2,016 | 1,040 | 6,182 | 59,163 | 72,202 | 51,617 |
| 8 | Regional governments or local authorities | 110 | 2,335 | 6,974 | 20,760 | 42 | 30,221 | 32,256 |
| 9 | Public-sector entities | 117 | 730 | 4,047 | 4,894 | 90 | 9,878 | 9,331 |
| 10 | Multilateral development | - | - | - | - | - | - | 13 |
| 11 | International organizations | 0 | 48 | 247 | 438 | 3 | 735 | 477 |
| 12 | Institutions | 1,229 | 30,807 | 13,681 | 61,744 | 863 | 108,325 | 99,324 |
| 13 | Corporates | 2,554 | 4,956 | 4,631 | 5,592 | 487 | 18,219 | 18,126 |
| 13a | of which: SMEs | 38 | 613 | 509 | 754 | - | 1,914 | 1,912 |
| 14 | Retail business | 50 | 475 | 2,171 | 2,388 | 2,075 | 7,159 | 8,988 |
| 14a | of which: SMEs | 4 | 101 | 1,168 | 544 | - | 1,817 | 1,920 |
| 15 | Exposures secured by mortgages on immovable property | 0 | 249 | 1,143 | 1,599 | 0 | 2,991 | 2,847 |
| 15a | of which: SMEs | - | 9 | 12 | 21 | - | 43 | 12 |
| 16 | Exposures in default | 122 | 35 | 141 | 154 | 44 | 496 | 534 |
| 17 | Exposures associated with particularly high risk | 16 | 161 | 107 | 46 | - | 330 | 333 |
| 18 | Covered bonds | - | 97 | 411 | 504 | - | 1,012 | 883 |
| 19 | Exposures to institutions and corporates with a short-term credit assessment | 0 | - | - | - | - | 0 | - |
| 20 | CIUs | 1 | 5 | 152 | 1,879 | 1,746 | 3,783 | 3,216 |
| 21 | Equity exposures | - | - | - | 5 | 55 | 60 | 100 |
| 22 | Other items | 17 | 53 | 188 | 252 | 61 | 571 | 290 |
| **23** | **Total Standardized Approach** | **8,016** | **41,967** | **34,933** | **106,436** | **64,630** | **255,982** | **228,336** |
| **24** | **Total as at Dec. 31, 2020** | **36,009** | **83,450** | **95,516** | **219,038** | **70,760** | **504,773** | |
| | Total as at Dec. 31, 2019 | **79,933** | **72,290** | **93,657** | **214,043** | **12,271** | | **472,194** |

The increase in the exposures to €504,773 million (December 31, 2019: €472,194 million) was attributable to new business in the exposure classes of retail business, institutions, and corporates. The receivables in the

DZ BANK banking group are mainly concentrated in non-current receivables with a residual maturity of more than 5 years, which had a volume of €219,038 million (December 31, 2019: €214,043 million).

### 6.2.2.5 Credit quality, past-due, non-performing, and forborne exposures

(ARTICLE 442 SENTENCE 1 LETTERS G AND H CRR)

The following sections of this regulatory risk report disclose the credit quality of on-balance-sheet and off-balance-sheet exposures by exposure class and by risk approach. Following implementation of EBA/GL/2016/11, exposures in the overviews EU CR1-A (Fig. 33) to EU CR1-C (Fig. 35) have to be broken down according to whether they are in default pursuant to article 178 CRR or not. Section 6.8 contains disclosures on counterparty credit risk. In accordance with the guidelines mentioned above, information on securitizations has not been included in the credit risk disclosures; this is provided in section 7.

Pursuant to Delegated Regulation (EU) No. 183/2014 dated December 20, 2013 specifying the calculation of specific and general credit risk adjustments, specific credit risk adjustments (SCRA) and general credit risk adjustments (GCRA) must be classified as types of provision in accordance with IFRS. The DZ BANK Group prepares consolidated financial statements and interim consolidated financial statements as at the reporting date in accordance with IFRS. All impairment losses recognized at group level therefore have to be classified as specific credit risk adjustments.

The tables below provide a comprehensive picture of the credit quality of the DZ BANK banking group's on-balance-sheet and off-balance-sheet exposures. The past-due or impaired exposures contained in the COREP report are examined separately, as are the loss allowances recognized. These exposures are broken down by the Standardized Approach to credit risk and the IRB approach and by exposure class, sector, and region.

FIG. 33 – EU 33 CR1-A – CREDIT QUALITY OF EXPOSURES BY EXPOSURE CLASS AND INSTRUMENT

| | | | | | | | | Dec. 31, 2020 | Jun. 30, 2020 |
|---|---|---|---|---|---|---|---|---|---|
| | Exposure class | a | b | c | d | e | f | g | g |
| | | Gross carrying amounts of | | Specific credit risk adjustments | General credit risk adjustments | Accumulated write-offs | Credit risk adjustment charges in the reporting period | Net values | Net values |
| € million | | Defaulted exposures | Non-defaulted exposures | | | | | (a+b-c-d) | |
| 1 | Central governments and central banks | - | 7,425 | 0 | - | 0 | 0 | 7,425 | 10,176 |
| 2 | Institutions | 187 | 38,839 | 26 | - | 60 | 19 | 39,000 | 46,511 |
| 3 | Corporates | 2,014 | 108,020 | 1,166 | - | 70 | 1,035 | 108,868 | 107,096 |
| 4 | of which: specialized lending | 197 | 33,897 | 156 | - | 0 | 126 | 33,938 | 31,721 |
| 5 | of which: SMEs | - | 9,762 | 20 | - | 0 | 13 | 9,742 | 8,902 |
| 6 | Retail business | 963 | 83,938 | 515 | - | 4 | 460 | 84,386 | 81,524 |
| 7 | Exposures secured by mortgages on | 601 | 69,768 | 166 | - | 2 | 122 | 70,203 | 67,040 |
| 8 | of which: SMEs | - | 0 | 0 | - | - | 0 | 0 | 1 |
| 9 | of which: non-SMEs | 601 | 69,767 | 166 | - | 2 | 122 | 70,203 | 67,039 |
| 10 | Qualified revolving | - | - | - | - | - | - | - | - |
| 11 | Other retail business | 362 | 14,170 | 349 | - | 2 | 338 | 14,183 | 14,485 |
| 12 | of which: SMEs | 1 | 378 | - | - | 0 | - | 380 | 377 |
| 13 | of which: non-SMEs | 361 | 13,791 | 349 | - | 2 | 338 | 13,803 | 14,108 |
| 14 | Equity exposures | 0 | 7,327 | - | - | - | - | 7,327 | 7,018 |

| Exposure class | | a | b | c | d | e | f | g | g |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Dec. 31, 2020 | Jun. 30, 2020 |
| | | Gross carrying amounts of | | Specific credit risk adjustments | General credit risk adjustments | Accumulated write-offs | Credit risk adjustment charges in the reporting period | Net values | Net values |
| € million | | Defaulted exposures | Non-defaulted exposures | | | | | (a+b-c-d) | |
| | Other non-credit-obligation assets | - | 1,784 | - | - | 0 | - | 1,784 | 1,805 |
| **15** | **Total IRB approach** | **3,164** | **247,333** | **1,707** | **-** | **134** | **1,514** | **248,791** | **254,130** |
| | of which: loans | 2,951 | 173,060 | 1,562 | - | 133 | 1,341 | 174,448 | 180,170 |
| | of which: debt | 0 | 22,298 | 5 | - | 0 | 4 | 22,293 | 25,405 |
| | of which: off-balance-sheet receivables | 214 | 40,963 | 138 | - | - | 100 | 41,040 | 37,848 |
| 16 | Central governments and central banks | 13 | 72,206 | 3 | - | 1 | 5 | 72,215 | 78,472 |
| 17 | Regional governments or local authorities | 15 | 30,247 | 25 | - | 0 | 40 | 30,237 | 31,354 |
| 18 | Public-sector entities | - | 9,880 | 2 | - | 0 | 1 | 9,878 | 9,962 |
| 19 | Multilateral development banks | - | - | - | - | - | - | - | 14 |
| 20 | International | - | 736 | 0 | - | 0 | 0 | 735 | 624 |
| 21 | Institutions | - | 108,330 | 6 | - | 0 | 6 | 108,325 | 108,264 |
| 22 | Corporates | 626 | 18,288 | 323 | - | 152 | 426 | 18,591 | 18,353 |
| 23 | of which: SMEs | 75 | 1,926 | 42 | - | 1 | 34 | 1,959 | 1,970 |
| 24 | Retail business | 204 | 7,252 | 205 | - | 16 | 150 | 7,250 | 9,662 |
| 25 | of which: SMEs | 80 | 1,857 | 82 | - | 11 | 66 | 1,855 | 2,229 |
| 26 | Exposures secured by mortgages on | 10 | 3,008 | 23 | - | - | 8 | 2,995 | 2,944 |
| 27 | of which: SMEs | - | 43 | 1 | - | - | - | 43 | 34 |
| 28 | Exposures in default | 869 | - | 373 | - | 145 | 422 | 496 | 651 |
| 29 | Exposures associated with particularly high | - | 331 | 1 | - | 0 | 1 | 330 | 317 |
| 30 | Covered bonds | - | 1,012 | 0 | - | 0 | 0 | 1,012 | 918 |
| 31 | Exposures to institutions and | - | 0 | - | - | - | - | 0 | - |
| 32 | CIUs | 0 | 3,784 | 1 | - | - | - | 3,783 | 3,328 |
| 33 | Equity exposures | - | 60 | - | - | - | - | 60 | 28 |
| 34 | Other items | 1 | 572 | 1 | - | - | - | 571 | 345 |
| **35** | **Total Standardized Approach** | **869** | **255,703** | **590** | **-** | **169** | **637** | **255,982** | **264,586** |
| | of which: loans | 748 | 186,889 | 513 | - | 168 | 545 | 187,124 | 194,335 |
| | of which: debt | 12 | 32,651 | 32 | - | 0 | 42 | 32,631 | 32,978 |
| | of which: off-balance-sheet receivables | 86 | 32,114 | 44 | - | - | 30 | 32,155 | 33,100 |
| **36** | **Total as at Dec. 31,** | **4,033** | **503,036** | **2,297** | **-** | **302** | **2,152** | **504,773** | |
| 37 | of which: loans | 3,699 | 359,949 | 2,076 | - | 301 | 1,886 | 361,572 | 374,505 |
| 38 | of which: debt | 12 | 54,949 | 37 | - | 0 | 46 | 54,924 | 58,383 |
| 39 | of which: off-balance-sheet receivables | 300 | 73,077 | 182 | - | - | 130 | 73,195 | 70,949 |
| 36 | Total as at Jun. 30, 2020 | 4,509 | 516,693 | 2,487 | - | 183 | 1,491 | | 518,716 |

The gross carrying amounts of the exposures not in default decreased from €516,693 million as at June 30, 2020 to €503,036 million as at the reporting date. This change was due to transactions that matured in the second half of 2020 in the banking group.

### 6.2.2.6 Past-due and non-performing exposures by sector
(ARTICLE 442 SENTENCE 1 LETTER G CRR)

Fig. 34 shows **exposures** in default and not in default, broken down by **sector**. Sectors of little significance to the DZ BANK banking group are aggregated in the 'other' row in Fig. 34.

FIG. 34 – EU CR1-B – CREDIT QUALITY OF EXPOSURES BY INDUSTRY

| | | a | b | c | d | e | f | g | g |
|---|---|---|---|---|---|---|---|---|---|
| | | Dec. 31, 2020 | | | | | | | Jun. 30, 2020 |
| | | Gross carrying amounts of | | | | | | | |
| € million | | Defaulted exposures | Non-defaulted exposures | Specific credit risk adjustments | General credit risk adjustments | Accumulated write-offs | Credit risk adjustment charges in the reporting period | Net values (a+b-c-d) | Net values |
| 1 | Financial | 236 | 248,874 | 54 | - | 156 | 141 | 249,056 | 264,738 |
| 2 | Public sector | 28 | 41,827 | 30 | - | 1 | 43 | 41,825 | 42,408 |
| 3 | Corporates and retail customers | 3,770 | 208,754 | 2,212 | - | 146 | 1,967 | 210,311 | 208,357 |
| 4 | Other | - | 3,581 | 0 | - | - | - | 3,581 | 3,213 |
| **5** | **Total as at Dec. 31, 2020** | **4,033** | **503,036** | **2,297** | **-** | **302** | **2,152** | **504,773** | |
| 5 | Total as at Jun. 30, 2020 | 4,509 | 516,693 | 2,487 | - | 183 | 1,491 | | 518,716 |

The lower gross carrying amounts for the financial sector were the result of the decrease in business activity in the second half of 2020. By contrast, the gross carrying amounts for the public sector, for corporates and retail customers, and for 'other' changed only moderately, reflecting normal fluctuation.

### 6.2.2.7 Past-due and non-performing exposures by country group
(ARTICLE 442 SENTENCE 1 LETTER H CRR)

Fig. 35 provides an overview of exposures in default and not in default, broken down into major geographical areas. Areas of little significance are aggregated in rows 10, 17, 27, and 34 of this table as 'other countries' or 'other'. Row 35 shows the institutions that are not assigned to a geographical area. The individual volumes in these rows do not exceed the limit of 5 percent of the entire exposure.

The calculation of the materiality threshold and a list of immaterial countries can be found in annex 2.

FIG. 35 – EU CR1-C – CREDIT QUALITY OF EXPOSURES BY GEOGRAPHY

| | | a | b | c | d | e | f | g | g |
|---|---|---|---|---|---|---|---|---|---|
| | | Dec. 31, 2020 | | | | | | | Jun. 30, 2020 |
| | | Gross carrying amounts of | | | | | | | |
| € million | | Defaulted exposures | Non-defaulted exposures | Specific credit risk adjustments | General credit risk adjustments | Accumulated write-offs | Credit risk adjustment charges in the reporting period | Net values (a+b-c-d) | Net values |
| **1** | **Germany** | 2,363 | 407,092 | 1,450 | - | 237 | 1,340 | 408,005 | 412,516 |
| **2** | **Other industrialized countries** | 792 | 77,258 | 507 | - | 25 | 497 | 77,543 | 84,641 |
| 3 | France | 3 | 11,043 | 6 | - | 0 | 6 | 11,040 | 13,063 |
| 4 | United Kingdom | 22 | 9,543 | 2 | - | 0 | 1 | 9,563 | 11,788 |
| 5 | Luxembourg | 4 | 8,401 | 20 | - | 0 | 4 | 8,386 | 6,878 |
| 6 | Netherlands | 24 | 5,596 | 19 | - | 0 | 18 | 5,601 | 5,463 |
| 7 | Austria | 107 | 4,920 | 63 | - | 0 | 43 | 4,964 | 4,998 |
| 8 | Switzerland | 30 | 8,592 | 4 | - | 24 | 5 | 8,617 | 9,305 |
| 9 | United States | 143 | 7,153 | 43 | - | 0 | 33 | 7,253 | 9,700 |
| 10 | Other countries | 460 | 22,010 | 351 | - | 0 | 386 | 22,119 | 23,446 |
| **11** | **Advanced economies** | 215 | 3,282 | 99 | - | 40 | 48 | 3,398 | 3,905 |
| 12 | Hong Kong | 47 | 259 | 22 | - | 0 | 18 | 283 | 341 |
| 13 | Korea | - | 536 | 0 | - | 0 | 0 | 536 | 513 |
| 14 | Malta | - | 230 | 2 | - | 0 | 5 | 228 | 316 |
| 15 | Singapore | 123 | 1,038 | 43 | - | 4 | 22 | 1,118 | 1,387 |
| 16 | Slovakia | 40 | 979 | 27 | - | - | 2 | 992 | 984 |
| 17 | Other countries | 5 | 240 | 4 | - | 36 | 1 | 240 | 364 |
| **18** | **Emerging markets** | 663 | 11,727 | 240 | - | 2 | 267 | 12,150 | 14,131 |
| 19 | China | 3 | 1,623 | 14 | - | 0 | 2 | 1,612 | 1,734 |
| 20 | Croatia | 0 | 118 | 0 | - | - | 0 | 118 | 691 |
| 21 | Hungary | 17 | 1,943 | 20 | - | 0 | 11 | 1,939 | 1,932 |
| 22 | Liberia | 94 | 579 | 29 | - | - | 43 | 644 | 954 |
| 23 | Marshall Islands | 178 | 1,034 | 44 | - | - | 72 | 1,167 | 1,729 |
| 24 | Russia | 0 | 762 | 1 | - | 0 | 0 | 761 | 765 |
| 25 | Turkey | 23 | 947 | 9 | - | 0 | 7 | 960 | 925 |
| 26 | Other countries | 348 | 4,722 | 123 | - | 1 | 131 | 4,948 | 5,401 |
| **27** | **Supranational organizations** | - | 2,689 | 0 | - | 0 | 0 | 2,689 | 2,438 |
| 28 | Other European institutions, governing | - | 528 | 0 | - | 0 | 0 | 528 | 369 |
| 29 | European Financial Stability Facility | - | 103 | 0 | - | 0 | - | 103 | 212 |
| 30 | European Investment | - | 989 | 0 | - | 0 | 0 | 989 | 1,035 |
| 31 | International Bank for Reconstruction and | - | 391 | 0 | - | 0 | 0 | 391 | 353 |
| 32 | Other | - | 678 | 0 | - | 0 | 0 | 678 | 365 |
| 33 | Not allocated to a geographical area | 0 | 991 | - | - | - | - | 991 | 1,083 |
| **34** | **Total as at Dec. 31,** | **4,033** | **503,036** | **2,297** | **-** | **302** | **2,152** | **504,773** | |
| 35 | Total as at Jun. 30, 2020 | 4,509 | 516,693 | 2,487 | - | 183 | 1,491 | | 518,716 |

Whereas the exposures in advanced economies and emerging markets remained largely unchanged, the exposures in Germany, other industrialized countries, and supranational organizations fell sharply due to transactions that matured at DZ BANK.

### 6.2.2.8 Changes in loss allowances for loans and advances

(ARTICLE 442 SENTENCE 1 LETTER I CRR)

The figure below focuses only on the changes in the balance of specific and general credit risk adjustments for defaulting or impaired exposures. Only specific credit risk adjustments are relevant in the DZ BANK banking group. Consequently, no values are shown in column b.

FIG. 36 – EU CR2-A – CHANGES IN THE STOCK OF GENERAL AND SPECIFIC CREDIT RISK ADJUSTMENTS

| | | a | b | a | b |
|---|---|---|---|---|---|
| | | **Dec. 31, 2020** | | Jun. 30, 2020 | |
| **€ million** | | **Accumulated specific credit risk adjustment** | **Accumulated general credit risk adjustment** | Accumulated specific credit risk adjustment | Accumulated general credit risk adjustment |
| **1** | **Opening balance** | **2,644** | | **2,301** | |
| 2 | Increases due to amounts set aside for estimated loan losses during the period | 851 | | 448 | |
| 3 | Decreases due to amounts reversed for estimated loan losses during the period | -327 | | -152 | |
| 4 | Decreases due to amounts taken against accumulated credit risk adjustments | 83 | | 127 | |
| 5 | Transfers between credit risk adjustments | -62 | | -41 | |
| 6 | Impact of exchange rate differences | -23 | | 4 | |
| 7 | Business combinations, including acquisitions and disposals of subsidiaries | - | | - | |
| 8 | Other adjustments | -835 | | -43 | |
| **9** | **Closing balance** | **2,332** | | **2,644** | |
| 10 | Recoveries on credit risk adjustments recorded directly to the income statement | -68 | | -34 | |
| 11 | Specific credit risk adjustments recorded directly to the income statement | 43 | | 23 | |
| 12 | Direct write-downs or write-offs | 35 | | 35 | |
| 13 | Recoveries on direct write-downs or write-offs | - | | - | |

In 2020, there were transfers of €62 million between the individual balances of credit risk adjustments (June 30, 2020: €41 million; Fig. 36, row 5). However, the income statement was directly affected by income from derecognized receivables amounting to €68 million (June 30, 2020: €34 million), expenses arising on changes to the balances of specific credit risk adjustments in an amount of €43 million (June 30, 2020: €23 million), and directly recognized impairment losses of €35 million (June 30, 2020: €35 million).

The balance of specific credit risk adjustments decreased by a total of €312 million in the reporting period. This was mainly due to two countervailing effects. Firstly, the increase due to amounts set aside for estimated loan losses during the reporting period (Fig. 36, row 2) rose substantially compared with June 30, 2020. Conversely, other adjustments went up sharply from a decrease of €43 million to a decrease of €835 million.

Supplementing the flow statement for credit risk adjustments in Fig. 53, Fig. 37 shows the balance of defaulting and impaired loans and debt securities, thereby providing a flow statement for exposures in default. Based on the scope of consolidation for regulatory purposes, the values disclosed correspond to the IFRS carrying amounts at the reporting date after deduction of impairment losses.

Unlike Fig. 33, Fig. 37 below is based on FINREP data.

FIG. 37 – EU CR2-B – CHANGES IN THE STOCK OF DEFAULTED AND IMPAIRED LOANS AND DEBT SECURITIES

| € million | | Dec. 31, 2020<br>Gross carrying amount of defaulted exposures | Jun. 30, 2020<br>Gross carrying amount of defaulted exposures |
|---|---|---|---|
| 1 | **Opening balance** | **4,641** | **4,335** |
| 2 | Loans and debt securities that have defaulted or been impaired since the last reporting period | 1,098 | 1,362 |
| 3 | Returned to non-defaulted status | 274 | 323 |
| 4 | Amounts written off | 10 | 882 |
| 5 | Other changes | -180 | 149 |
| 6 | **Closing balance** | **4,285** | **4,641** |

This change was primarily due to the reduction in loss allowances in the banking group in the second half of the year. As at the reporting date, loans and debt securities that have defaulted or been impaired since the last reporting period (row 2) were down by €264 million compared with June 30, 2020.

## 6.3 Non-performing and forborne exposures

(ARTICLE 442 SENTENCE 1 LETTERS G AND I CRR)

### 6.3.1 Regulatory background

Section 6.3 of this risk report contains information about non-performing and forborne exposures that are defined as such according to Annex V of Commission Implementing Regulation (EU) No. 680/2014. This information had to be disclosed for the first time as at December 31, 2019 as a result of EBA/GL/2018/10 coming into force. Proportionality applies based on the significance of the credit institution and on the level of NPEs reported according to the scope of application specified for each individual template. The templates that are applicable only to credit institutions that are significant and have a gross NPL ratio of 5 percent or above were not relevant to the DZ BANK banking group in the reporting year.

In accordance with EBA/GL/2018/10 paragraph 17 et seq., disclosure of the information below replaces the presentation of the maturity structure of past-due on-balance-sheet exposures in accordance with FINREP (Implementing Regulation (EU) No. 680/2014 dated April 16, 2014 amended by Implementing Regulation (EU) 2017/1443 dated June 29, 2017), disregarding whether they are impaired or not, and the presentation of non-performing forborne exposures in accordance with FINREP (Implementing Regulation (EU) No. 680/2014 dated April 16, 2014, amended by Implementing Regulation (EU) 2017/1443 dated June 29, 2017) in tables EU CR1-D and EU CR1-E of the EBA Guidelines on disclosure requirements under Part 8 of Regulation (EU) No. 575/2013.

### 6.3.2 Forbearance

Fig. 38 shows the gross carrying amount of the forborne exposures and the related accumulated impairment, provisions, accumulated change in fair value due to credit risk, and collateral and financial guarantees received based on the scope of consolidation for regulatory purposes in accordance with Part 1 Title II Chapter 2 CRR.

FIG. 38 – EU CQ1: CREDIT QUALITY OF FORBORNE EXPOSURES

| | a | b | c | d | e | f | g | h |
|---|---|---|---|---|---|---|---|---|
| | Gross carrying amount/nominal amount of exposures with forbearance measures | | | | Accumulated impairment, accumulated negative changes in fair value due to credit risk, and provisions | | Collateral received and financial guarantees received on forborne exposures | |
| | | Non-performing forborne | | | | | | |
| € million | Performing forborne | | Of which defaulted | Of which impaired | On performing forborne exposures | On non-performing forborne exposures | | Of which collateral and financial guarantees received on non-performing exposures with forbearance measures |
| Loans and advances | 639 | 2,767 | 2,319 | 2,158 | -20 | -1,015 | 1,743 | 1,374 |
| Central banks | - | - | - | - | - | - | - | - |
| General governments | 5 | - | - | - | 0 | - | - | - |
| Credit institutions | - | 24 | 24 | 24 | - | -2 | 21 | 21 |
| Other financial | 14 | 230 | 230 | 113 | -1 | -123 | 50 | 49 |
| Non-financial | 350 | 1,561 | 1,553 | 1,508 | -13 | -767 | 704 | 574 |
| Households | 270 | 954 | 513 | 513 | -6 | -123 | 968 | 729 |
| Debt securities | - | 0 | 0 | - | - | - | - | - |
| Loan commitments | 68 | 81 | 81 | 81 | -4 | -20 | 13 | 8 |
| **Total as at Dec. 31,** | **707** | **2,849** | **2,400** | **2,239** | **-23** | **-1,035** | **1,756** | **1,382** |
| Total as at Jun. 30, 2020 | 873 | 2,805 | 2,409 | 2,245 | -32 | -1,130 | 1,721 | 1,254 |

The gross amount of the exposures with forbearance measures was €3,555 million as at December 31, 2020 (June 30, 2020: €3,678 million). Of this amount, €707 million was attributable to performing forborne exposures (June 30, 2020: €873 million) and €2,849 million to non-performing forborne exposures (June 30, 2020: €2,805 million).

As at December 31, 2020, the accumulated impairment stood at €1,058 million (June 30, 2020: €1,162 million), of which €1,035 million was attributable to non-performing forborne exposures (June 30, 2020: €1,130 million).

The majority of the accumulated impairment of the non-performing forborne exposures was attributable to non-financial corporations (€767 million or 74 percent), while €123 million (12 percent) was attributable to households and €123 million (12 percent) to other financial corporations.

As at December 31, 2020, the collateral and financial guarantees received on forborne exposures totaled €1,756 million (June 30, 2020: €1,721 million), of which €1,382 million (79 percent) was attributable to non-performing exposures with forbearance measures (June 30, 2020: €1,254 million or 73 percent).

### 6.3.3 Non-performing exposures

Fig. 39 shows the gross carrying amount of performing and non-performing exposures based on the scope of consolidation for regulatory purposes in accordance with Part 1 Title II Chapter 2 CRR.

FIG. 39 – EU CQ3: CREDIT QUALITY OF PERFORMING AND NON-PERFORMING EXPOSURES BY PAST DUE DAYS

| | a | b | c | d | e | f | g | h | i | j | k | l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Gross carrying amount/nominal amount** | | | | | | | | | | | |
| | **Performing exposures** | | | **Non-performing exposures** | | | | | | | | |
| **€ million** | | **Not past due or past due ≤ 30 days** | **Past due > 30 days ≤ 90 days** | | **Unlikely to pay that are not past due or are past due ≤ 90 days** | **Past due > 90 days ≤ 180 days** | **Past due > 180 days ≤ 1 year** | **Past due > 1 year ≤ 2 years** | **Past due > 2 years ≤ 5 years** | **Past due > 5 years ≤ 7 years** | **Past due > 7 years** | **Of which defaulted** |
| Loans and advances | 282,090 | 281,933 | 157 | 4,479 | 2,818 | 205 | 463 | 206 | 390 | 129 | 268 | 3,991 |
| Central banks | 33 | 33 | - | - | - | - | - | - | - | - | - | - |
| General governments | 18,637 | 18,637 | - | 1 | 1 | - | - | - | - | - | - | 1 |
| Credit institutions | 92,746 | 92,746 | 0 | 67 | - | - | 43 | - | - | - | 24 | 67 |
| Other financial corporations | 15,406 | 15,405 | 1 | 386 | 325 | 18 | 35 | 1 | 1 | - | 6 | 386 |
| Non-financial corporations | 76,964 | 76,924 | 40 | 2,455 | 1,526 | 75 | 258 | 62 | 237 | 87 | 211 | 2,447 |
| Of which SMEs | 11,307 | 11,283 | 24 | 113 | 44 | 13 | 14 | 28 | 12 | 1 | 2 | 113 |
| Households | 78,304 | 78,188 | 116 | 1,570 | 967 | 112 | 126 | 144 | 152 | 42 | 27 | 1,091 |
| Debt securities | 54,431 | 54,431 | - | 151 | 125 | - | - | 26 | - | - | - | 151 |
| Central banks | - | - | - | - | - | - | - | - | - | - | - | - |
| General governments | 23,262 | 23,262 | - | 12 | 12 | - | - | - | - | - | - | 12 |
| Credit institutions | 22,425 | 22,425 | - | - | - | - | - | - | - | - | - | - |
| Other financial corporations | 4,543 | 4,543 | - | 139 | 113 | - | - | 26 | - | - | - | 139 |
| Non-financial corporations | 4,200 | 4,200 | - | 0 | 0 | - | - | - | - | - | - | 0 |
| Off-balance-sheet exposures | 76,415 | - | - | 268 | - | - | - | - | - | - | - | 268 |
| Central banks | - | - | - | - | - | - | - | - | - | - | - | - |
| General governments | 451 | - | - | - | - | - | - | - | - | - | - | - |
| Credit institutions | 25,447 | - | - | - | - | - | - | - | - | - | - | - |
| Other financial corporations | 7,619 | - | - | 0 | - | - | - | - | - | - | - | 0 |
| Non-financial corporations | 32,959 | - | - | 251 | - | - | - | - | - | - | - | 251 |
| Households | 9,939 | - | - | 16 | - | - | - | - | - | - | - | 16 |
| **Total as at Dec. 31, 2020** | **412,936** | **336,364** | **157** | **4,898** | **2,943** | **205** | **463** | **233** | **390** | **129** | **268** | **4,410** |
| Total as at Jun. 30, 2020 | 405,541 | 334,068 | 241 | 5,397 | 3,165 | 334 | 283 | 342 | 500 | 197 | 297 | 4,962 |

The gross amount of the performing and non-performing exposures was €417,834 million as at December 31, 2020 (June 30, 2020: €410,938 million). Of this amount, €412,936 million was attributable to performing exposures (June 30, 2020: €405,541 million) and €4,898 million to non-performing exposures (June 30, 2020: €5,397 million).

Of the non-performing exposures, the majority (€2,707 million or 55 percent) was attributable to non-financial corporations, while €1,586 million (32 percent) was attributable to households and €526 million (11 percent) to other financial corporations. In total, 60 percent of the non-performing exposures were past due by 90 days or fewer and 16 percent were past due by more than 2 years. Off-balance-sheet exposures are not included in the breakdown by past-due period.
Overall, 90 percent of non-performing exposures were in default.

The DZ BANK Group's gross NPL ratio was 1.56 percent (June 30, 2020: 1.74 percent).

Fig. 40 shows the gross carrying amount of the performing and non-performing exposures and the related accumulated impairment, provisions, accumulated changes in fair value due to credit risk, accumulated partial write-offs, and collateral and financial guarantees received based on the scope of consolidation for regulatory purposes in accordance with Part 1 Title II Chapter 2 CRR.

FIG. 40 – EU CR1: PERFORMING AND NON-PERFORMING EXPOSURES AND RELATED PROVISIONS

| | a | b | c | d | e | f | g | h | i | j | k | l | m | n | o |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gross carrying amount/nominal amount | | | | | | Accumulated impairment, accumulated negative changes in fair value due to credit risk, and provisions | | | | | | Accumulated partial write-offs | Collateral and financial guarantees received | |
| € million | Performing exposures | | | Non-performing exposures | | | Performing exposures – accumulated impairment and provisions | | | Non-performing exposures – accumulated impairment, accumulated negative changes in fair value due to credit risk, and provisions | | | | On performing exposures | On non-performing exposures |
| | | Of which stage 1 | Of which stage 2 | | Of which stage 2 | Of which stage 3 | | Of which stage 1 | Of which stage 2 | | Of which stage 2 | Of which stage 3 | | | |
| Loans and advances | 282,090 | 265,359 | 13,324 | 4,479 | 488 | 3,824 | -608 | -273 | -336 | -1,798 | -10 | -1,695 | -72 | 128,899 | 1,976 |
| Central banks | 33 | 33 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| General governments | 18,637 | 17,728 | 82 | 1 | - | 1 | -3 | -3 | -1 | 0 | - | 0 | - | 776 | - |
| Credit institutions | 92,746 | 90,698 | 81 | 67 | - | 67 | -16 | -13 | -3 | -6 | - | -6 | - | 3,265 | 57 |
| Other financial corporations | 15,406 | 14,365 | 976 | 386 | - | 269 | -13 | -8 | -5 | -132 | - | -70 | - | 8,250 | 191 |
| Non-financial corporations | 76,964 | 68,993 | 7,572 | 2,455 | 8 | 2,397 | -280 | -118 | -162 | -1,305 | 0 | -1,274 | -72 | 51,492 | 753 |
| Of which SMEs | 11,307 | 9,946 | 1,217 | 113 | - | 109 | -70 | -21 | -49 | -62 | - | -58 | -1 | 7,437 | 10 |
| Households | 78,304 | 73,542 | 4,612 | 1,570 | 479 | 1,090 | -296 | -131 | -166 | -355 | -10 | -345 | 0 | 65,116 | 976 |
| Debt securities | 54,431 | 47,121 | 249 | 151 | - | 108 | -41 | -19 | -22 | -53 | - | -53 | - | 1,233 | - |
| Central banks | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| General governments | 23,262 | 17,179 | 184 | 12 | - | 6 | -26 | -6 | -20 | - | - | - | - | - | - |
| Credit institutions | 22,425 | 21,688 | - | - | - | - | -4 | -4 | - | - | - | - | - | 1,233 | - |
| Other financial corporations | 4,543 | 4,273 | 42 | 139 | - | 102 | -8 | -6 | -2 | -53 | - | -53 | - | - | - |
| Non-financial corporations | 4,200 | 3,980 | 23 | 0 | - | - | -3 | -3 | 0 | - | - | - | - | 0 | - |
| Off-balance-sheet exposures | 76,415 | 73,502 | 2,444 | 268 | - | 268 | -99 | -62 | -38 | -131 | - | -131 | | 8,784 | 34 |
| Central banks | - | - | - | - | - | - | - | - | - | - | - | - | | - | - |
| General governments | 451 | 451 | - | - | - | - | -1 | -1 | - | - | - | - | | 181 | - |
| Credit institutions | 25,447 | 25,379 | 68 | - | - | - | -4 | -4 | -1 | - | - | - | | 61 | - |
| Other financial corporations | 7,619 | 7,252 | 214 | 0 | - | 0 | -6 | -4 | -2 | - | - | - | | 151 | - |
| Non-financial corporations | 32,959 | 30,768 | 2,127 | 251 | - | 251 | -78 | -44 | -34 | -118 | - | -118 | | 2,444 | 33 |
| Households | 9,939 | 9,652 | 36 | 16 | - | 16 | -10 | -10 | -1 | -13 | - | -13 | | 5,947 | 0 |
| **Total as at Dec. 31, 2020** | **412,936** | **385,982** | **16,017** | **4,898** | **488** | **4,200** | **-749** | **-353** | **-396** | **-1,982** | **-10** | **-1,879** | **-72** | **138,916** | **2,010** |
| Total as at Jun. 30, 2020 | 405,541 | 383,987 | 10,539 | 5,397 | 480 | 4,702 | -740 | -335 | -405 | -2,275 | -11 | -2,179 | -5 | 133,466 | 2,120 |

Of the total performing exposures, 93 percent were assigned to stage 1 (June 30, 2020: 95 percent) and 4 percent to stage 2 (June 30, 2020: 3 percent). Of the non-performing exposure, 86 percent were assigned to stage 3 (June 30, 2020: 87 percent).

As at December 31, 2020, accumulated impairment for non-performing exposures amounted to €1,982 million (June 30, 2020: €2,275 million), of which 95 percent was assigned to stage 3 (June 30, 2020: 96 percent).

As at December 31, 2020, collateral and financial guarantees received for performing and non-performing exposures totaled €140,926 million (June 30, 2020: €135,587 million), of which €2,010 million or 1 percent (June 30, 2020: €2,120 million or 2 percent) was attributable to non-performing exposures.

#### 6.3.4 Foreclosed assets

The DZ BANK Group has no collateral that it obtained by taking possession of foreclosed assets.

### 6.4 Use of credit risk mitigation techniques

#### 6.4.1 Qualitative information on credit risk mitigation

(ARTICLE 452 SENTENCE 1 LETTER B (III) AND ARTICLE 453 SENTENCE 1 LETTERS A TO E CRR)

The methods used by the DZ BANK banking group to mitigate credit risk are described in section 6.5.7 (pages 127 to 129) of the commercial-law risk report. The description is divided into the following topics:

– Collateral strategy and secured transactions
– Types of collateral
– Management of traditional loan collateral
– Collateral management
– Central counterparties.

Section 6.5.7 of the commercial-law risk report contains a description of the credit risk mitigation rules and processes applicable to on-balance-sheet and off-balance-sheet netting. This is supplemented by details of the rules and processes for the measurement and management of collateral as well as details of the most important types of collateral. The most important types of guarantor and counterparty for credit derivatives, and their creditworthiness, are disclosed in section 6.5.7 of the commercial-law risk report. The majority of guarantors are financial institutions, but there are also guarantors that are corporates, most of which are Union funds. The majority of the corporates are in rating classes 1B to 2B, and the majority of financial institutions are in rating classes 1C to 2C. Concentrations of market risk or credit risk within credit risk mitigation are outlined in section 6.5.6 (pages 126 to 127) of the commercial-law risk report.

The guarantors in the context of traditional loan collateral are mainly financial institutions and public-sector entities, most of which are in the VR rating classes 1A to 3A (investment grade).

### 6.4.2 Quantitative information on credit risk mitigation

(ARTICLE 453 SENTENCE 1 LETTERS F AND G CRR)

This section contains information about exposures backed by financial collateral, other collateral, guarantees, and credit derivatives.

Fig. 41 and Fig. 42 provide an overview of the extent to which credit risk mitigation techniques are used in the DZ BANK banking group. The tables also show the secured and unsecured exposures. All collateral, financial guarantees, and credit derivatives used to mitigate the credit risk of the secured exposures are listed, irrespective of whether the risk-weighted assets are calculated under the Standardized Approach (simple and comprehensive method of recognizing financial collateral) or under the IRB approach. The figures shown for credit risk mitigation in each case are the regulatory risk-weighted values.

Disclosures about the use of credit risk mitigation techniques under the Standardized Approach can be found in section 6.5 of this risk report, whereas information about credit risk mitigation techniques under the IRB approach is provided in section 6.6.

For certain IRBA assets held by BSH, DZ HYP, and DVB, the mortgage-related or real-estate collateral recognized for credit risk mitigation purposes is included in the calculation of capital requirements as LGD.

FIG. 41 – EU CR3 – CREDIT RISK MITIGATION TECHNIQUES – OVERVIEW AS AT DECEMBER 31, 2020

| | Exposure class | a | b | c | d | e |
|---|---|---|---|---|---|---|
| | € million | Unsecured exposures – carrying amount | Secured exposures – carrying amount | Exposures secured by collateral | Exposures secured by financial guarantees | Exposures secured by credit derivatives |
| 1 | Central governments and central banks | 7,311 | 114 | 109 | - | - |
| 2 | Institutions | 22,806 | 16,194 | 5,116 | 685 | - |
| 3 | Corporates | 71,810 | 37,059 | 32,102 | 1,906 | - |
| 4 | of which: specialized lending | 21,576 | 12,362 | 11,395 | 77 | - |
| 5 | of which: SMEs | 3,214 | 6,528 | 6,032 | 45 | - |
| 6 | Retail business | 25,725 | 58,661 | 56,222 | 479 | - |
| 7 | Exposures secured by mortgages on immovable property | 13,783 | 56,420 | 55,612 | 44 | - |
| 8 | of which: SMEs | 0 | - | - | - | - |
| 9 | of which: non-SMEs | 13,783 | 56,420 | 55,612 | 44 | - |
| 10 | Qualified revolving | - | - | - | - | - |
| 11 | Other retail business | 11,943 | 2,240 | 610 | 434 | - |
| 12 | of which: SMEs | 8 | 371 | 0 | 371 | - |
| 13 | of which: non-SMEs | 11,934 | 1,869 | 609 | 63 | - |
| 14 | Equity exposures | 7,327 | - | - | - | - |
| 15 | Other non-credit-obligation assets | 1,784 | - | - | - | - |
| **16** | **Total IRB approach** | **136,764** | **112,027** | **93,549** | **3,070** | **-** |
| 17 | of which: loans | 71,578 | 102,871 | 86,290 | 2,175 | - |
| 18 | of which: debt securities | 21,183 | 1,110 | 748 | 245 | - |
| 19 | of which: in default | 675 | 1,736 | 1,399 | 234 | - |
| 20 | Central governments and central banks | 71,413 | 790 | 506 | 241 | - |
| 21 | Regional governments or local authorities | 30,139 | 82 | 3 | - | - |
| 22 | Public-sector entities | 9,047 | 831 | - | 600 | - |
| 23 | Multilateral development banks | - | - | - | - | - |
| 24 | International organizations | 735 | - | - | - | - |

| | Exposure class | a | b | c | d | e |
|---|---|---|---|---|---|---|
| | € million | Unsecured exposures – carrying amount | Secured exposures – carrying amount | Exposures secured by collateral | Exposures secured by financial guarantees | Exposures secured by credit derivatives |
| 25 | Institutions | 108,017 | 307 | 9 | - | - |
| 26 | Corporates | 13,545 | 4,615 | 739 | 2,066 | - |
| 27 | of which: SMEs | 1,510 | 404 | 25 | 291 | - |
| 28 | Retail business | 6,716 | 372 | 146 | 0 | - |
| 29 | of which: SMEs | 1,810 | 7 | 2 | - | - |
| 30 | Exposures secured by mortgages on immovable property | - | 2,991 | 2,991 | - | - |
| 31 | of which: SMEs | - | 43 | 43 | - | - |
| 32 | Exposures in default | 432 | 85 | 20 | 38 | - |
| 33 | Exposures associated with particularly high risk | 329 | 0 | - | - | - |
| 34 | Covered bonds | 1,012 | - | - | - | - |
| 35 | Exposures to institutions and corporates with a short-term credit assessment | 0 | - | - | - | - |
| 36 | CIUs | 3,783 | - | - | - | - |
| 37 | Equity exposures | 60 | - | - | - | - |
| 38 | Other items | 571 | 0 | - | - | - |
| **39** | **Total Standardized Approach** | **245,799** | **10,074** | **4,415** | **2,946** | **-** |
| 40 | of which: loans | 179,059 | 8,065 | 2,186 | 2,152 | - |
| 41 | of which: debt securities | 31,640 | 991 | 406 | 401 | - |
| 42 | of which: in default | 392 | 1,442 | 19 | 38 | - |
| **43** | **Total exposures** | **382,563** | **122,101** | **97,963** | **6,015** | **-** |
| 44 | of which: loans | 250,637 | 110,936 | 88,476 | 4,327 | - |
| 45 | of which: debt securities | 52,823 | 2,101 | 1,154 | 645 | - |
| 46 | of which: in default | 1,068 | 3,178 | 1,418 | 273 | - |

FIG. 42 – EU CR3 – CREDIT RISK MITIGATION TECHNIQUES – OVERVIEW AS AT JUNE 30, 2020

| | Exposure class | a | b | c | d | e |
|---|---|---|---|---|---|---|
| | € million | Unsecured exposures – carrying amount | Secured exposures – carrying amount | Exposures secured by collateral | Exposures secured by financial guarantees | Exposures secured by credit derivatives |
| 1 | Central governments and central banks | 9,391 | 785 | 756 | - | - |
| 2 | Institutions | 25,726 | 20,786 | 8,192 | 728 | - |
| 3 | Corporates | 68,765 | 38,330 | 32,987 | 2,143 | - |
| 4 | of which: specialized lending | 19,844 | 11,877 | 11,076 | 59 | - |
| 5 | of which: SMEs | 3,017 | 5,886 | 5,374 | 46 | - |
| 6 | Retail business | 25,922 | 55,603 | 52,866 | 104 | - |
| 7 | Exposures secured by mortgages on immovable property | 13,388 | 53,652 | 52,243 | 43 | - |
| 8 | of which: SMEs | 1 | - | - | - | - |
| 9 | of which: non-SMEs | 13,387 | 53,652 | 52,243 | 43 | - |
| 10 | Qualified revolving | - | - | - | - | - |
| 11 | Other retail business | 12,533 | 1,951 | 623 | 61 | - |
| 12 | of which: SMEs | 376 | 1 | - | 1 | - |
| 13 | of which: non-SMEs | 12,158 | 1,950 | 623 | 60 | - |
| 14 | Equity exposures | 7,011 | 7 | 7 | - | - |
| 15 | Other non-credit-obligation assets | 1,805 | - | - | - | - |
| **16** | **Total IRB approach** | **138,620** | **115,510** | **94,809** | **2,975** | **-** |
| 17 | of which: loans | 77,439 | 102,730 | 84,766 | 1,991 | - |
| 18 | of which: debt securities | 20,771 | 4,633 | 4,168 | 243 | - |
| 19 | of which: in default | 618 | 2,067 | 1,716 | 197 | - |

| Exposure class | | a | b | c | d | e |
|---|---|---|---|---|---|---|
| € million | | Unsecured exposures – carrying amount | Secured exposures – carrying amount | Exposures secured by collateral | Exposures secured by financial guarantees | Exposures secured by credit derivatives |
| 20 | Central governments and central banks | 76,867 | 1,593 | 1,418 | 124 | - |
| 21 | Regional governments or local authorities | 31,252 | 85 | 3 | - | - |
| 22 | Public-sector entities | 8,943 | 1,019 | 100 | 617 | - |
| 23 | Multilateral development banks | 14 | - | - | - | - |
| 24 | International organizations | 624 | - | - | - | - |
| 25 | Institutions | 107,881 | 384 | 11 | - | - |
| 26 | Corporates | 13,591 | 4,255 | 606 | 2,098 | - |
| 27 | of which: SMEs | 1,557 | 356 | 16 | 277 | - |
| 28 | Retail business | 8,859 | 395 | 151 | 2 | - |
| 29 | of which: SMEs | 2,170 | 8 | 2 | 1 | - |
| 30 | Exposures secured by mortgages on immovable property | - | 2,937 | 2,937 | - | - |
| 31 | of which: SMEs | - | 34 | 34 | - | - |
| 32 | Exposures in default | 591 | 58 | 21 | 18 | - |
| 33 | Exposures associated with particularly high risk | 317 | - | - | - | - |
| 34 | Covered bonds | 667 | 251 | 17 | - | - |
| 35 | Exposures to institutions and corporates with a short-term credit assessment | - | - | - | - | - |
| 36 | CIUs | 3,328 | - | - | - | - |
| 37 | Equity exposures | 28 | - | - | - | - |
| 38 | Other items | 345 | - | - | - | - |
| **39** | **Total Standardized Approach** | **253,307** | **10,977** | **5,265** | **2,859** | **-** |
| 40 | of which: loans | 185,672 | 8,468 | 2,687 | 2,117 | - |
| 41 | of which: debt securities | 31,219 | 1,759 | 820 | 439 | - |
| 42 | of which: in default | 591 | 1,430 | 21 | 18 | - |
| **43** | **Total exposures** | **391,926** | **126,488** | **100,073** | **5,833** | **-** |
| 44 | of which: loans | 263,112 | 111,199 | 87,452 | 4,108 | - |
| 45 | of which: debt securities | 51,990 | 6,393 | 4,988 | 683 | - |
| 46 | of which: in default | 1,209 | 3,498 | 1,737 | 215 | - |

The unsecured exposures fell by €9,363 million to €382,563 million as at the reporting date (June 30, 2020: €391,926 million), the secured exposures by €4,387 million to €122,101 million (June 30, 2020: €126,488 million), and the exposures secured by collateral by €2,110 million to €97,963 million (June 30, 2020: €100,073 million). The changes in these three categories were caused by transactions that matured in the second half of 2020 in the DZ BANK Group. By contrast, there were only minimal changes in the exposures secured by financial guarantees compared with the position as at June 30, 2020 and these were the result of fluctuation within the normal range.

## 6.5 Credit risk and techniques for mitigating credit risk under the Standardized Approach

### 6.5.1 Qualitative information on use of the Standardized Approach

(ARTICLE 444 SENTENCE 1 LETTER A CRR)

As in previous years, the rating agencies below are used to help determine the capital requirements for all exposure classes under the Standardized Approach to credit risk for which credit ratings are used:

– Standard & Poor's Ratings Services (Standard & Poor's)
– Moody's Investors Service (Moody's) and
– Fitch Ratings, Ltd. (Fitch).

#### 6.5.1.1 Transfer of credit ratings for bond issues to assets

(ARTICLE 444 SENTENCE 1 LETTERS B, C, AND D CRR)

External credit ratings awarded by recognized rating agencies or export insurance agencies are applied to assets of the DZ BANK banking group in accordance with the requirements of articles 137 to 141 CRR and apply to all exposure classes used for the Standardized Approach to credit risk listed in article 112 CRR in which external credit ratings are used (article 444 sentence 1 letter b CRR). To assess creditworthiness, the DZ BANK banking group draws on all of the main external rating sources that are available in the reporting software. The logic used by this software is described below.

In cases where an exposure-specific credit rating is not available for an exposure, and only an issuer-specific credit rating or a credit rating for another of the issuer's issues is available, DZ BANK applies this credit rating to the unrated exposure in accordance with the criteria of article 139 CRR. The available credit rating is applied if it

1. produces a higher risk weight than for the unrated exposure and the unrated exposure's ranking is equal to or lower than that of the rated exposure (article 139 (2) sentence 1 letter a CRR), or if it
2. produces a lower risk weight than for the unrated exposure and the rated exposure's ranking is equal to or higher than that of the unrated exposure (article 139 (2) sentence 1 letter b CRR).
3. If these conditions are not met, the exposure is treated as unrated pursuant to article 139 (2) sentence 2 CRR.

No bond issue credit ratings are transferred to comparable exposures of equal or higher ranking.

Currently, the DZ BANK banking group does not use the aforementioned process for applying credit ratings of issuers and issues to exposures in the banking book as it is not relevant. DZ BANK uses the standard assignment of credit ratings as published by the EBA. Therefore, no separate disclosure pursuant to article 444 sentence 1 letter d CRR is required.

## 6.5.2 Quantitative information on use of the Standardized Approach

(ARTICLE 444 LETTER E AND ARTICLE 453 SENTENCE 1 LETTERS F AND G CRR)

### 6.5.2.1 Exposures broken down by exposure class under the Standardized Approach to credit risk

Fig. 43 shows the exposures broken down by exposure class under the Standardized Approach to credit risk where such exposures are secured by financial collateral, life insurance, or guarantees. The figures for credit risk mitigation in each case are the regulatory risk-weighted values.

In this context, the exposures assigned to the exposure classes under the Standardized Approach to credit risk are shown before and after credit risk mitigation under the Standardized Approach. The classification of transactions in the regulatory risk weight categories depends on how the transactions are classified in the regulatory exposure classes, on the credit ratings of borrowers and transactions, and on the particular collateral provided. The sum total of exposures after credit risks have been mitigated under the Standardized Approach to credit risk arises from the provision of personal collateral for IRBA transactions by protection providers treated according to the Standardized Approach to credit risk.

In some cases, the exposures reported after credit risk mitigation are larger than exposures before credit risk mitigation. This is because exposures after credit risks have been mitigated include exposures reported under the IRB approach that are backed by protection providers, in particular guarantors, treated according to the Standardized Approach to credit risk.

FIG. 43 – CRSA EXPOSURES BEFORE CREDIT RISK MITIGATION BY RATING CATEGORY

| € million | Risk weight (%) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Exposure class** | **0** | **2** | **4** | **10** | **20** | **35** | **50** | **70** | **75** | **100** | **150** | **250** | **370** | **1,250** | **Other** | **Capital deduction** |
| Exposure before credit risk mitigation | | | | | | | | | | | | | | | | |
| Central governments and central banks | 71,363 | - | - | - | 230 | - | 5 | - | - | 160 | - | 309 | - | - | - | - |
| Regional governments or local authorities | 29,576 | - | - | - | 1,039 | - | 139 | - | - | 1 | - | - | - | - | - | - |
| Other public-sector entities | 9,184 | - | - | - | 574 | - | 601 | - | 0 | - | - | - | - | - | - | - |
| Multilateral development banks | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| International organizations | 737 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Institutions | 93,843 | - | - | - | 1,373 | - | 48 | - | - | 18 | - | - | - | - | - | - |
| Corporates | - | - | - | - | 1,204 | - | 623 | - | 60 | 14,330 | 2 | - | - | 0 | - | - |
| Retail business | - | - | - | - | - | - | - | 18 | 5,018 | - | - | - | - | - | - | - |
| Exposures secured by mortgages on immovable property | - | - | - | - | - | 2,210 | 779 | - | - | - | - | - | - | - | - | - |
| Past-due exposures | - | - | - | - | - | - | - | - | - | 209 | 239 | - | - | - | - | - |

| € million | Risk weight (%) | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Exposure class** | **0** | **2** | **4** | **10** | **20** | **35** | **50** | **70** | **75** | **100** | **150** | **250** | **370** | **1,250** | **Other** | **Capital deduction** |
| Exposures associated with particularly high risk | - | - | - | - | - | - | - | - | - | - | 207 | - | - | - | - | - |
| Covered bonds | 788 | - | - | 51 | 172 | - | - | - | - | - | - | - | - | - | - | - |
| Institutions and corporates with a short-term credit assessment | - | - | - | - | - | - | 0 | - | - | - | - | - | - | - | - | - |
| CIUs | - | - | - | - | - | - | - | - | - | 12 | - | - | - | - | 3,771 | - |
| Long-term equity investments | - | - | - | - | - | - | - | - | - | 58 | - | 1 | - | - | - | - |
| Other items | 24 | - | - | - | - | - | - | - | - | 417 | - | - | - | 129 | - | - |
| **Total as at Dec. 31, 2020** | **205,515** | **-** | **-** | **51** | **4,593** | **2,210** | **2,196** | **18** | **5,077** | **15,205** | **447** | **310** | **-** | **129** | **3,771** | **-** |
| Total as at Jun. 30, 2020 | 213,594 | - | - | - | 3,975 | 2,126 | 2,064 | - | 3,897 | 15,276 | 520 | 372 | - | 120 | 3,322 | - |

The reduction in the exposures in the 0 percent risk weight class is based on the fall in business activity in the exposure classes of central governments and central banks and institutions as at the reporting date. The fluctuation in the other risk weight classes compared with June 30, 2020 was normal.

### 6.5.2.2 Credit risk and the effects of credit risk mitigation under the Standardized Approach

(ARTICLE 453 LETTERS F AND G CRR)

Fig. 44 shows the effect of all the credit risk mitigation techniques used by DZ BANK as at the reporting date resulting from the recognition of financial collateral when calculating the capital requirements under the Standardized Approach in the DZ BANK banking group. In accordance with the requirements, receivables subject to counterparty credit risk or the frameworks for securitizations are not included in this table. RWA density is calculated by dividing exposures after credit conversion factor and credit risk mitigation by the total sum of risk-weighted assets. The values in this table are based on the regulatory figures according to the COREP report.

FIG. 44 – EU CR4 – STANDARDIZED APPROACH – CREDIT RISK EXPOSURE AND CREDIT RISK MITIGATION EFFECTS[1]

| | | a | b | c | d | e | f |
|---|---|---|---|---|---|---|---|
| | **Exposure class** | **Exposures before credit conversion factor and credit risk mitigation** | | **Exposures after credit conversion factor and credit risk mitigation** | | **RWAs and RWA density** | |
| | **€ million** | **On-balance-sheet amount** | **Off-balance-sheet amount** | **On-balance-sheet amount** | **Off-balance-sheet amount** | **RWAs** | **RWA density (%)** |
| 1 | Central governments or central banks | 71,395 | 281 | 73,880 | 478 | 859 | 1.16 |
| 2 | Regional governments or local | 30,145 | 76 | 30,651 | 35 | 273 | 0.89 |
| 3 | Public-sector entities | 9,807 | 1 | 9,114 | 0 | 158 | 1.73 |
| 4 | Multilateral development banks | - | - | 49 | 5 | - | - |
| 5 | International organizations | 735 | - | 735 | - | - | - |
| 6 | Institutions | 84,762 | 23,297 | 85,863 | 4,102 | 589 | 0.65 |
| 7 | Corporates | 12,695 | 6,210 | 10,300 | 1,780 | 10,712 | 88.67 |
| 8 | Retail business | 4,956 | 4,325 | 4,813 | 222 | 3,575 | 71.00 |
| 9 | Secured by mortgages on immovable property | 3,264 | 7 | 3,138 | 4 | 1,395 | 44.40 |
| 10 | Exposures in default | 440 | 55 | 387 | 32 | 517 | 123.45 |
| 11 | Exposures associated with particularly high risk | 546 | 151 | 546 | 28 | 861 | 150.00 |
| 12 | Covered bonds | 1,012 | - | 1,012 | - | 40 | 3.91 |
| 13 | Institutions and corporates with a short-term credit assessment | 0 | - | 0 | - | 0 | 50.00 |
| 14 | Collective investment undertakings (CIUs) | 3,836 | 4 | 3,836 | 4 | 2,601 | 67.74 |
| 15 | Long-term equity investments | 61 | 1 | 61 | 1 | 64 | 103.13 |
| 16 | Other items | 819 | 129 | 989 | 129 | 2,356 | 210.68 |
| **17** | **Total as at Dec. 31, 2020** | **224,474** | **34,538** | **225,374** | **6,821** | **24,000** | **10.34** |
| | Total as at Jun. 30, 2020 | 230,617 | 33,720 | 231,132 | 6,698 | 23,401 | 9.84 |

[1] Restatement of the figures as at June 30, 2020 (now excluding SFTs).

In Fig. 44, the on-balance-sheet and off-balance-sheet exposure values before credit conversion factor and credit risk mitigation fell overall, by €5,325 million, (columns a and b) due to transactions that matured in the second half of 2020 at DZ BANK. Here too, the main factor was the decrease in business activity with central governments and central banks and with institutions. Because the risk assets in the central governments and central banks exposure class are given a weight of zero, the risk-weighted assets increased only moderately by €599 million.

The biggest changes in the risk-weighted assets outside the risk categories mentioned above were registered in the following components of the risk-weighted assets:

– Central governments and central banks: down by €163 million (June 30, 2020: €1,022 million),
– Exposures in default: down by €216 million (June 30, 2020: €733 million),
– Institutions: up by €209 million (June 30, 2020: €380 million),
– Collective investment undertakings (CIUs): up by €273 million (June 30, 2020: €2,328 million),
– Other items: up by €459 million (June 30, 2020: €1,897 million).

### 6.5.2.3 Breakdown of exposures by risk weight under the Standardized Approach
(ARTICLE 444 LETTER E CRR)

Fig. 45 provides a breakdown of the DZ BANK banking group's regulatory exposures at the reporting date, broken down by risk weight under the Standardized Approach. The table also shows the exposures broken down by credit conversion factor and credit risk mitigation techniques.

FIG. 45 – EU CR5 – STANDARDIZED APPROACH – CREDIT RISK BY EXPOSURE CLASS AND RISK WEIGHT[1]

| | Exposure class | Risk weight (%) | | | | | | | | | | | | | | | | Total | of which: unrated |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 2 | 4 | 10 | 20 | 35 | 50 | 70 | 75 | 100 | 150 | 250 | 370 | 1,250 | Other | Deducted | | |
| € million | | | | | | | | | | | | | | | | | | | |
| 1 | Central governments or central banks | 73,746 | - | - | - | 229 | - | 66 | - | - | 8 | - | 309 | - | - | - | - | 74,357 | 68,941 |
| 2 | Regional governments or local authorities | 29,532 | - | - | - | 1,015 | - | 139 | - | - | 1 | - | - | - | - | - | - | 30,686 | 29,418 |
| 3 | Public-sector entities | 8,523 | - | - | - | 461 | - | 131 | - | - | - | - | - | - | - | - | - | 9,115 | 8,676 |
| 4 | Multilateral development banks | 53 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 53 | 53 |
| 5 | International organizations | 735 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 735 | 733 |
| 6 | Institutions | 87,159 | - | - | - | 2,747 | - | 41 | - | - | 19 | - | - | - | - | - | - | 89,965 | 89,334 |
| 7 | Corporates | - | - | - | - | 992 | 0 | 684 | 0 | - | 10,404 | 0 | - | - | - | - | - | 12,080 | 9,406 |
| 8 | Retail business | - | - | - | - | - | - | - | - | 5,035 | - | - | - | - | - | - | - | 5,035 | 4,862 |
| 9 | Secured by mortgages on immovable property | - | - | - | - | - | 2,084 | 778 | - | - | 280 | - | - | - | - | - | - | 3,142 | 2,862 |
| 10 | Exposures in default | - | - | - | - | - | - | - | - | - | 222 | 196 | - | - | - | - | - | 419 | 386 |
| 11 | Exposures associated with particularly high risk | - | - | - | - | - | - | - | - | - | - | 574 | - | - | - | - | - | 574 | 207 |
| 12 | Covered bonds | 788 | - | - | 51 | 172 | - | - | - | - | - | - | - | - | - | - | - | 1,012 | 823 |
| 13 | Institutions and corporates with a short-term credit assessment | - | - | - | - | - | - | 0 | - | - | - | - | - | - | - | - | - | 0 | - |
| 14 | Collective investment undertakings (CIUs) | - | - | - | - | - | - | - | - | - | 12 | - | - | - | - | 3,829 | - | 3,840 | 3,780 |
| 15 | Long-term equity investments | - | - | - | - | - | - | - | - | - | 61 | - | 1 | - | - | - | - | 62 | 58 |
| 16 | Other items | 258 | - | - | - | 1 | - | - | - | - | 721 | - | 9 | - | 129 | - | - | 1,118 | 702 |
| **17** | **Total as at Dec. 31, 2020** | **200,795** | **-** | **-** | **51** | **5,617** | **2,084** | **1,838** | **0** | **5,035** | **11,728** | **771** | **319** | **-** | **129** | **3,829** | **-** | **232,195** | **220,240** |
| 17 | Total as at Jun. 30, 2020 | 208,011 | - | - | - | 4,548 | 2,009 | 2,042 | 2 | 5,387 | 11,133 | 824 | 373 | - | 120 | 3,380 | - | 237,829 | 224,090 |

1 Restatement of the figures as at June 30, 2020 (now excluding SFTs).

Fig. 45 shows exposures of €232,195 million as at December 31, 2020 (June 30, 2020: €237,829 million). The decrease in the exposures in the 0 percent risk weight class mainly results from transactions that matured in the second half of 2020 in the exposure classes of central governments and central banks and institutions. The fluctuation in the other risk weight classes compared with June 30, 2020 was within the normal range.

## 6.6 Credit risk and techniques for mitigating credit risk under the IRB approach

(ARTICLE 452 SENTENCE 1 LETTER A CRR)

This section of the DZ BANK banking group's regulatory risk report contains only disclosures relating to the use of IRBA models to determine credit risk.

Exposures subject to the framework for securitizations or to counterparty credit risk are not included in the tables in this section.

### 6.6.1 Qualitative information on use of the IRB approach

In this section, information is provided about the IRB models used in the DZ BANK banking group to calculate the RWAs. The main features of these IRB models are described and their particular scope of application is defined. The percentage for the RWAs is listed in section 6.6.3.1 of the regulatory risk report. This indicates the degree to which each regulatory exposure class is covered by the relevant model.

### 6.6.2 Rating systems

#### Characteristics of the rating systems

The generation of internal credit ratings for the counterparties of entities in the DZ BANK banking group helps to provide a solid basis for lending decisions in the management of transactions, in that the expected losses from defaults in the lending business are then factored into pricing. In addition, internal ratings are used to incorporate the credit quality of the counterparties when calculating unexpected losses in the credit portfolio.

The **VR rating system**, which is used as standard across most of the cooperative financial network, ensures that all the entities in the network apply a sophisticated uniform methodology producing ratings that are comparable.

DZ BANK primarily uses VR rating systems in its credit risk management system to assess large and medium-sized companies, major corporate customers, banks, investment funds, and project finance. The internal assessment approach is also used to evaluate the liquidity lines and credit enhancements made available by DZ BANK to programs for the issuance of asset-backed commercial paper (ABCP). These rating systems have been approved by the competent supervisory authority for the purposes of calculating regulatory capital using the **foundation IRB approach**. In addition, the rating systems for open-ended real estate funds and for commercial real estate used by the former WGZ BANK Group have also been approved for use under the IRB approach.

For **internal management purposes**, DZ BANK uses further rating systems to assess SMEs (German Mittelstand), agricultural businesses, countries, public-sector entities, not-for-profit organizations, foreign SMEs, acquisition financing, asset finance, and insurance companies.

Most of the other entities in the DZ BANK banking group use the DZ BANK rating systems for banks, countries, and major corporate customers. Rating systems for specific business segments are also used by individual subsidiaries.

On July 10, 2019, the DZ BANK banking group applied to the ECB to permanently transfer certain rating systems from the IRBA back to the Standardized Approach to credit risk. This application was for DZ BANK AG and the subsidiaries BSH, DVB Bank SE, DZ HYP AG, and DZ PRIVATBANK. In this application, permission was sought to permanently transfer the following rating systems back to the Standardized Approach to credit risk:

– Acquisition financing (DZ BANK AG)
– Object finance (DZ BANK AG)
– VR rating for countries (DZ BANK AG, DZ HYP AG, DZ PRIVATBANK, BSH AG, DVB Bank SE)
– VR rating for large and medium-sized companies (DZ HYP AG)
– Aviation (DVB Bank SE)
– Land transport (DVB Bank SE).

This application was based on the provisions in article 150 (1) letter c CRR, according to which the Standardized Approach can be applied to exposures in non-significant business units and to exposure classes or types of exposure that are immaterial in terms of size and perceived risk profile.

The ECB approved the application to permanently transfer the aforementioned rating systems back to the Standardized Approach to credit risk on December 9, 2019. Based on this approval, and in agreement with the ECB, all of the aforementioned rating systems were transferred back immediately or, in the case of DVB's processes, by February 29, 2020.

### 6.6.3 Development and expansion of rating systems

All internal **rating systems** and those approved by the banking supervisor for solvency reporting were **validated** in 2020. The revised rating system for project finance went live in March 2020. The same also applies to the supervisory **slotting approach for project finance**, which has been used since then to calculate the regulatory capital requirement. The use test is currently taking place for the rating system for banks, which has been revised in accordance with the EBA's Guidelines on PD estimation, LGD estimation and the treatment of defaulted exposures (EBA/GL/2017/16) and the EBA's Guidelines on the application of the definition of default (EBA/GL/2016/07).

Further information about the rating systems for the exposure classes used for the Standardized Approach to credit risk and the IRB approach can be found in sections 6.5.1 and 6.6.1 of this report.

#### 6.6.3.1 Summary of internal rating systems
(ARTICLE 452 SENTENCE 1 LETTER A CRR)

In 2007, the DZ BANK banking group received official approval from the competent supervisory authority to calculate its own funds using the foundation IRB approach and the IRB approach for retail business. Fig. 47, Fig. 48, and Fig. 49 show the approved internal rating systems used by the DZ BANK banking group to determine the parameters for calculating its regulatory capital requirements based on the IRB approaches. The overviews cover the rating systems developed and applied by DZ BANK that are also made available to BSH, DZ HYP, and DVB, as well as those specially customized to the respective business models of BSH and DZ HYP. TeamBank uses a proprietary rating system for retail business, while DVB uses proprietary rating systems for the corporates exposure class.

As at the reporting date, the degree of coverage by the IRBA according to the implementation plan was 94 percent (December 31, 2019: 94 percent) measured in terms of exposures (EAD) and 86 percent (December

31, 2019: 86 percent) in relation to RWAs according to the requirements of section 11 of the Solvency Regulation (SolvV). DVB is not included in the above values. In accordance with section 13 (2) no. 6 SolvV, the banking supervisor has given permission for this entity to be excluded from the calculation of the percentage of coverage. The degree of coverage in relation to the RWAs was below the 92 percent threshold required by the supervisory authority. However, the authority tolerates this insufficient coverage because of the systematic changes that are about to be made to the partial use rules in the context of the Targeted Review of Internal Models (TRIM).

Fig. 46 provides an overview of the exposure classes of the entire DZ BANK banking group under the Standardized Approach to credit risk, FIRB approach, and AIRB approach, and their share of the total EAD.

FIG. 46 – DISTRIBUTION OF THE EXPOSURE CLASSES AND THEIR PERCENTAGE OF COVERAGE UNDER THE STANDARDIZED APPROACH TO CREDIT RISK, FIRB APPROACH, AND AIRB APPROACH (SHARE OF TOTAL EAD)

| % | CRSA | FIRB | AIRB | Total |
|---|---|---|---|---|
| **IRB approach exposure class** | | | | |
| Central governments and central banks | | 1.43 | - | 1.43 |
| Institutions | | 9.00 | - | 9.00 |
| Corporates | | 20.36 | 0.73 | 21.08 |
| Retail business | | - | 16.01 | 16.01 |
| of which: exposures secured by mortgages on immovable property | | - | 13.27 | 13.27 |
| of which: qualified revolving | | - | - | - |
| of which: other retail business | | - | 2.74 | 2.74 |
| Equity exposures | | 1.38 | - | 1.38 |
| Other non-credit-obligation assets | | 0.34 | - | 0.34 |
| **Standardized approach exposure class** | | | | |
| Central governments and central banks | 13.63 | | | 13.63 |
| Regional governments or local authorities | 5.81 | | | 5.81 |
| Public-sector entities | 1.96 | | | 1.96 |
| Multilateral development banks | - | | | - |
| International organizations | 0.14 | | | 0.14 |
| Institutions | 21.64 | | | 21.64 |
| Corporates | 3.93 | | | 3.93 |
| Retail business | 1.77 | | | 1.77 |
| Exposures secured by mortgages on immovable property | 0.62 | | | 0.62 |
| Exposures in default | 0.19 | | | 0.19 |
| Exposures associated with particularly high risk | 0.15 | | | 0.15 |
| Covered bonds | 0.19 | | | 0.19 |
| Exposures to institutions and corporates with a short-term credit assessment | 0.00 | | | 0.00 |
| CIUs | 0.72 | | | 0.72 |
| Equity exposures | 0.01 | | | 0.01 |
| Other items | 0.18 | | | 0.18 |
| **Total as at Dec. 31, 2020** | **50.94** | **32.50** | **16.74** | **100.00** |
| Total as at Dec. 31, 2019 | 50.82 | 31.01 | 18.30 | 100.00 |

The ECB, which is the competent supervisory authority, is notified of the percentage of coverage at regular intervals. If required, necessary action steps are agreed in the event of any potential changes to the regulatory requirements.

The figures below show the rating systems used by the DZ BANK banking group.

FIG. 47 – RATING SYSTEMS DEVELOPED BY DZ BANK AND THEIR USE BY OTHER ENTITIES IN THE DZ BANK BANKING GROUP

| | | | | | Exposure class | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Corporates | | | | Retail business | | |
| **Rating system** | **DZ BANK** | **BSH** | **DZ HYP** | **DVB** | **Central governments and central banks** | **Institutions** | **Long-term equity investments** | **Securitizations** | **Corporates (narrow sense)** | **SMEs** | **Specialized lending** | **Receivables purchased** | **Mortgage-backed** | **Qualified revolving** | **Other** |
| VR rating for large and medium-sized companies | ● | | | | | | | | ● | ● | | | | | |
| VR rating for major corporate customers | ● | | | | | | | | ● | | | | | | |
| VR rating for banks | ● | ● | ● | ● | ● | ● | ● | | | | | | | | |
| Project finance | ● | | | | | | | | | | ● | | | | |
| Internal Assessment Approach | ● | | | | | | | ● | | | | | | | |
| Investment fund rating | ● | | | | | | | | ● | | | | | | |

FIG. 48 – PROPRIETARY RATING SYSTEMS DEVELOPED BY BSH

| | Exposure class | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Corporates | | | | Retail business | | |
| **Rating system** | **Central governments and central banks** | **Institutions** | **Long-term equity investments** | **Securitizations** | **Corporates (narrow sense)** | **SMEs** | **Specialized lending** | **Receivables purchased** | **Mortgage-backed** | **Qualified revolving** | **Other** |
| **Mortgage-backed retail business** | | | | | | | | | | | |
| Application scoring | | | | | | | | | ● | | |
| Behavioral scoring | | | | | | | | | ● | | |
| LGD scoring | | | | | | | | | ● | | |
| EAD | | | | | | | | | ● | | |
| **Non-mortgage-backed retail business** | | | | | | | | | | | |
| Application scoring | | | | | | | | | | | ● |
| Behavioral scoring | | | | | | | | | | | ● |
| LGD scoring | | | | | | | | | | | ● |
| EAD | | | | | | | | | | | ● |

FIG. 49 – PROPRIETARY RATING SYSTEMS DEVELOPED BY DZ HYP

| | Exposure class | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Corporates | | | | Retail business | | |
| Rating system | Central governments and | Institutions | Long-term equity investments | Securitizations | Corporates (narrow sense) | SMEs | Specialized lending | Receivables purchased | Mortgage-backed | Qualified revolving | Other |
| VR rating for property developers | | | | | | | ● | | | | |
| VR rating for investors | | | | | ● | | | | | | |
| VR rating for property companies | | | | | | | ● | | | | |
| VR rating for project developers | | | | | | | ● | | | | |
| VR rating for housing companies | | | | | ● | | | | | | |
| ICRE rating (SLRE Abroad)[1] | | | | | | | ● | | | | |
| VR rating for open-ended real estate funds | | | | | ● | | | | | | |
| Behavioral scoring for retail | | | | | | | | | ● | | |
| VR rating for retail customers | | | | | | | | | ● | | |
| WL rating for business customers, freelancers, and (retail) investors | | | | | | | | | ● | | |
| DG HYP LGD model for retail | | | | | | | | | ● | | |
| WL BANK LGD model for retail business | | | | | | | | | ● | | |
| WL BANK CCF model for retail business | | | | | | | | | ● | | |

1) Licensed system of RSU.

In addition to the rating systems developed by DZ BANK, DVB uses separate rating systems for the following segments in order to classify the risks for the exposure class of corporates (in the narrow sense of the term):

– Leasing companies
– Shipping (containers)
– Shipping (vessels).

When using DZ BANK's VR rating for banks, DVB applies its own LGD estimates.

TeamBank generally uses its consumer-finance rating system to determine the credit ratings for loan exposures in its retail business exposure class. However, the following retail products are currently covered by the Standardized Approach to credit risk:

– Purchased but not yet settled credit card transactions that, in total, are below the activation threshold for conversion into consumer finance
– Loan commitments in connection with the Finanzreserve loan facility
– Special easyCredit subportfolios: easyCredit with an account overview ('easyCredit mit Kontoblick'), Receivables purchased in connection with the integrated e-commerce finance solution and at the point of sale ('ratenkauf by easyCredit'); consumer finance marketed to retail customers in Austria ('der faire Credit').

Applications to transfer the following subportfolios to the IRBA have already been submitted to the supervisory authority: loan commitments in connection with the Finanzreserve loan facility and consumer finance marketed to retail customers in Austria.

### 6.6.3.2 Description of internal rating systems

(ARTICLE 452 SENTENCE 1 LETTERS B (I) AND C CRR)

Application of the IRB approaches requires the use of internal rating systems to classify the risks of the exposures measured using the IRB approaches and to classify guarantors. Internal rating systems are considered suitable if they meet the minimum requirements for use of the IRB approaches pursuant to article 143 CRR. Apart from meeting the requirements relating to methodology and process organization, the rating systems must have demonstrated their suitability for classifying existing and new business. Rating systems are defined by article 142 (1) no. 1 CRR as all of the methods, processes, controls, and data collection and IT systems that support the assessment of credit risk, the assignment of exposures to rating grades or pools, and the quantification of default and loss estimates that have been developed for a certain type of exposure.
Most of the internal rating systems have been developed as the standard for the entire cooperative financial network by DZ BANK. This uniform approach for the entire cooperative network brings substantial efficiency gains for DZ BANK as the cooperative central institution and for the local cooperative banks. If DZ BANK requires rating systems for specialist segments that go beyond the scope of the rating systems developed for the cooperative network, DZ BANK will develop any such rating systems itself.

The internal rating systems used by the entities in the DZ BANK banking group feature a modular construction; they generally consist of a quantitative module and a qualitative module (although TeamBank, for example, does not use a qualitative module in standardized retail business). When rating systems are developed, various factors affecting credit ratings are identified and initially developed in isolation. The next stage is to take account of interdependencies between individual modules at the level of the overall model. The advantage of this approach is that individual modules of a particular rating system can be revised, for example, in the light of new methodical-conceptual or empirical findings, without any other module being affected by this. This reduces the cost of developing and refining rating systems.

The PD/LGD approach pursuant to article 155 (3) CRR is used for equity exposures if the equity exposure falls within the scope of a rating system approved for the IRBA and for which approval has been given. This is currently only the case for the VR rating for banks. Otherwise, the simple risk weight approach pursuant to article 155 (2) CRR is used.

The **VR rating system** standardizes rating methods and ensures comparability of rating results within the cooperative financial network. The VR rating system is differentiated by customer segment and is gradually being extended to cover all relevant customer groups.

The section below presents the main rating systems used by the DZ BANK banking group. These rating systems have been approved by the competent supervisory authority for the purposes of calculating regulatory own funds using the foundation IRB approach. Each of these rating systems generally differentiates between a total of 25 rating categories; 20 of these categories are for non-defaulting counterparties and 5 are for defaulting counterparties. The regulatory lower limits for the probability of default to be used in the calculation of capital requirements, known as PD floors, are taken into account for the relevant exposure class in accordance with the provisions of the CRR.

The **VR rating for large and medium-sized companies** is used for the exposure class of corporates (in the narrow sense of the term) and small and medium-sized enterprises and therefore applies to 27 percent and 52 percent respectively of the RWAs in the corresponding exposure class in the DZ BANK banking group. This rating system covers the central institution's typical corporate customers that generate revenue of up to €1.0 billion. It is applied, among other things, to loans jointly extended by entities in the DZ BANK banking group to local cooperative banks or their customers and, in addition, is used by all local cooperative banks in

Germany throughout the cooperative financial network. A characteristic of the VR rating system devised for large and medium-sized companies is the large number of historical data records of defaulting and non-defaulting customers that were collected throughout the cooperative financial network. Given this ideal data scenario, a good/bad analysis was selected as the development method.

The **VR rating for major corporate customers** is used for large domestic and international customers that generate revenue in excess of €1.0 billion and belong to the exposure class of corporates (in the narrow sense of the term). It applies to 54 percent of the RWAs in this exposure class in the DZ BANK banking group. A characteristic of the VR rating system devised for major corporate customers is the small number of defaulting customers. Given this data scenario, the external rating method was selected as the development method. Under this approach, data was collected from many financial years for a large number of externally rated international companies from various sectors.

The **VR rating for banks** is used for the exposure class of central governments and central banks, institutions, and equity exposures and therefore applies to 100 percent of the RWAs in the corresponding exposure class in the DZ BANK banking group. This rating system is applied to German and international banks (including central banks), irrespective of legal structure or size. The external rating method was again chosen as the development method. Under this approach, data was collected from externally rated banks worldwide. The rating system is applied irrespective of the product type (debt exposure or equity exposure), i.e. there is no dedicated procedure for equity exposures. The rules on calculating the RWAs for equity exposures under the PD/LGD approach (article 165 CRR) are taken into account.

The internal rating systems specified below are used exclusively by DZ BANK within the banking group to calculate capital requirements:

– The **project finance rating system** is used to assess complex transport and infrastructure projects. It therefore applies to 40 percent of the RWAs in the specialized lending exposure class in the DZ BANK banking group. As there are only a small number of external ratings available for project finance and an insufficient number of internal data sets, a combination of ratings by experts and cash flow simulations were selected to develop the rating model. DZ BANK AG uses the slotting approach for specialized lending to calculate the regulatory capital requirement for project finance in accordance with article 170 (2) CRR. Under this approach, institutions categorize their exposures using a five-grade scale consisting of four non-defaulted categories and one defaulted category.
– The **Internal Assessment Approach (IAA)** is used to rate liquidity lines and credit enhancements that are made available to programs for the purpose of issuing ABCP.
– The **investment fund rating system** is used for funds in Germany and Luxembourg that mainly invest in liquid fixed assets. It therefore applies to 1 percent of the RWAs in the exposure class of corporates (in the narrow sense of the term) in the DZ BANK banking group. Because neither default data for funds in this scope of application nor external credit ratings for investment funds are available, a simulation-based approach using time series of fund returns combined with a qualitative sub-module were selected to develop this rating system.

**DZ HYP**

The **<u>VR rating for property companies</u>** assesses special-purpose entities and closed-end investment funds used in the long-term management of rented or leased property. The servicing of the loan is derived exclusively or predominantly from the current income of the property/properties on which the loan is granted. For this reason, cash flow and the change in value are simulated over the term of the loan (maximum of 20 years) and compared with the cost of the loan and the residual value. This is used to calculate the key figures DSCR and

LTV, whose distribution over time determines the PD. The procedure covers 38 percent of the RWAs in the specialized lending exposure class in the DZ BANK banking group.

The **VR rating for property developers** assesses property developers who plan and implement residential construction projects in their own name and for their own account without carrying out any construction work themselves. The financing required for construction is settled through the sale of the individual residential properties. The rating is based on a scorecard with predominantly property-related criteria, a number of qualitative borrower criteria, and consideration of residual and completion risk. The procedure covers 4 percent of the RWAs in the specialized lending exposure class in the DZ BANK banking group.

The **VR rating for project developers** assesses companies that have overall project responsibility for a construction project. This includes the selection and acquisition of land, the planning and, in some cases, the construction of the property, the conclusion of rental agreements, and the handling of sales and financing. The rating is based on a scorecard with predominantly qualitative criteria concerning the management qualities of the borrower, property-related criteria, and consideration of construction, letting, and completion risk. The procedure covers 11 percent of the RWAs in the specialized lending exposure class in the DZ BANK banking group.

The **VR rating for housing companies** assesses companies that provide, manage and, in some cases, refurbish housing for private individuals. The rating is based on a scorecard that contains borrower criteria (e.g. management quality, profit expectations) and property-related criteria (location and vacancy rate of the homes) and takes account of accounting data. The procedure covers 29 percent and 3 percent respectively of the RWAs in the relevant exposure classes in the DZ BANK banking group (SMEs and corporates (in the narrow sense of the term)).

The **VR rating for investors** assesses individuals, partnerships and, in rare cases, legal entities who/that invest in residential and commercial real estate and obtain the majority of their income from the income generated by these investments. The rating is based on a scorecard with criteria relating to the borrower, the property, and ability to service debt. The procedure covers 18 percent and 8 percent respectively of the RWAs in the relevant exposure classes in the DZ BANK banking group (SMEs and corporates (in the narrow sense of the term)).

The **VR rating for open-ended real estate funds** assesses open-ended real estate funds of investment management companies that are subject to the rules of the German Investment Code (KAGB) or the Austrian Real Estate Investment Fund Act (ImmoInvFG) and property companies that themselves are part of the affected fund via an equity investment (provided the investment management company issued an unlimited credit order for the account of the fund prior to granting the loan). The rating consists of two submodules, a purely quantitative value change model (distance-to-default model) and an expert model that primarily comprises quantitative and qualitative factors relating to the balance sheet structure and type of portfolio. As this is a portfolio in which no defaults have been observed to date and for which no external credit ratings are available for a shadow rating approach, the score is calibrated with a central tendency determined using the Bayes formula. The procedure covers 4 percent of the RWAs in the corporates (narrow sense) exposure class and 1 percent of the RWAs in the SMEs exposure class in the DZ BANK banking group.

The **ICRE rating** (International Commercial Real Estate or Specialized Lending Real Estate (SLRE) Abroad) is used to assess special-purpose entities or economically comparable exposures whose financed real estate/the focus of the real estate portfolio may be anywhere in the world outside Germany. The rating simulates the change in cash flow, which is primarily based on the projected income/proceeds from the financed property or property portfolio, and not on the general asset situation or creditworthiness of the owner of the property or property portfolio. The cash flow is examined for possible default scenarios and supplemented by qualitative criteria and any potential transfer risk. The procedure covers 6 percent of the RWAs in the specialized lending exposure class in the DZ BANK banking group.

The **retail scoring of the former DG HYP** assesses the wind-down portfolio of the retail customers of the former DG HYP (residential property use) using a scorecard that is essentially based on behavioral indicators relating to account management (reminders, arrears). The procedure covers 1 percent of the RWAs in the mortgage-backed retail business (non-SME) exposure class in the DZ BANK banking group. Under the former DG HYP's LGD model for retail, the LGD for consumer home finance is determined using a recovery-rate-based model that draws on empirical recovery rate distributions. Other components such as cure rate, costs, and discounting are also taken into account.

**DZ HYP's procedure for retail customers** assesses individuals who derive the majority of their income from employment. The procedure comprises an application scorecard that is used for (new) lending and determines the PD on the basis of borrower and property-related criteria. The ongoing assessment is carried out by means of a behavioral scorecard that mainly uses indicators relating to account management (reminders, arrears). The procedure covers 6 percent of the RWAs in the mortgage-backed retail business (non-SME) exposure class in the DZ BANK banking group.

**DZ HYP's procedure for rating business customers, freelancers, and (retail) investors** assesses individuals who derive the majority of their income from self-employment. This includes business customers, freelancers, and (retail) investors. There is an engagement limit of €1 million for (retail) investors. The procedure comprises an application scorecard that is used for (new) lending and determines the PD on the basis of borrower and property-related criteria. The ongoing assessment is carried out by means of a behavioral scorecard that mainly uses indicators relating to account management (reminders, arrears). The procedure covers 4 percent of the RWAs in the mortgage-backed retail business (non-SME) exposure class and 100 percent of the RWAs in the mortgage-backed retail business (SME) exposure class in the DZ BANK banking group.

The former WL BANK's LGD model for retail ('LGD grading') is a mathematical/statistical procedure for estimating the loss given default in the real estate lending business, based on property-specific recovery rates.

**TeamBank**
The **rating system of TeamBank** assesses unsecured consumer finance for individuals whose main income is derived from employment. Its scope of application covers consumer finance sold in Germany (easyCredit), including drawdowns of loan commitments under the Finanzreserve loan product featuring a credit card, and thus the IRBA other retail business exposure class. The rating is based on mathematical/statistical models for the PD and LGD components, which were developed and calibrated on the basis of TeamBank's data history covering many years. The rating is updated monthly in a fully automated process (no qualitative expert assessment/overruling). The procedure covers 87 percent of the RWAs in the other retail business (non-SME) exposure class in the DZ BANK banking group.

**BSH**
**Application scoring** is used for all loans in new customer lending business (with the exception of legal entities, commercial lending, and foreign lending, which are not material). Among other criteria, the procedure takes account of qualitative and quantitative characteristics, the payment history for loans already approved (progression hypothesis), obligations on home savings accounts in the case of suspended repayment loans, and a Schufa score developed specially for BSH. There is a distinction between loans in rem and loans not in rem, whereby loans in rem are loans for which there is real security. The procedure covers 13 percent and 1 percent

respectively of the RWAs in the relevant exposure classes in the DZ BANK banking group (mortgage-backed retail business (non-SME) and other retail business (non-SME)).

**Behavioral scoring** is used for the monthly assessment of the counterparty risk attaching to the entire customer loan portfolio. The assessment is carried out at individual loan agreement level. The scorecards used take into account the payment history for the past 3 years. There is a distinction between loans in rem and loans not in rem, whereby loans in rem are loans for which there is real security. The procedure covers 76 percent and 6 percent respectively of the RWAs in the relevant exposure classes in the DZ BANK banking group (mortgage-backed retail business (non-SME) and other retail business (non-SME)).

**LGD scoring** is used to determine loss given default, taking particular account of information relating to the loan collateral (e.g. the loan value). The basis for determining loss given default is the total portfolio of receivables in default that are managed in the default database. When determining the LGD, a distinction is made between the realized loss given default (RLGD) and the expected loss given default (ELGD).

**DVB**

Internal models are used to calculate the capital requirements in the DVB Bank SE subgroup in accordance with the advanced IRB approach, both for estimating the probability of default (PD) and for estimating the loss given default (LGD). These models are allocated to the exposure class of corporates (in the narrow sense of the term) and apply to 2 percent of the RWAs in this exposure class in the DZ BANK banking group.

The PD models 'shipping' and 'leasing companies' for finance customers primarily focus on the creditworthiness structures of the borrowers themselves. These are calibrated to internal and external data, with the information collected externally encompassing many annual financial statements of companies with external credit ratings.

The LGD models 'vessel' and 'container boxes' reflect the risk structure of the loan collateral, with mathematical procedures being used to calculate scenarios for their future performance.

A reconciliation of external and internal ratings, which illustrates the relationship between internal allocations to rating categories and external credit ratings, is presented in section 6.5.1, figure 20 (page 123) of the commercial-law risk report.

### 6.6.3.3 Approved transitional rules for IRB approaches (partial use)

(ARTICLE 452 SENTENCE 1 LETTER A CRR)

Capital requirements for credit risk in the entities within the DZ BANK banking group are always calculated using the IRB approaches as well as the Standardized Approach to credit risk (partial use). In accordance with article 150 CRR, use of the Standardized Approach to credit risk by institutions that use the IRB approach is limited, and threshold values must be complied with. In order to monitor compliance, the cover ratio as defined by article 143 CRR in conjunction with section 11 SolvV is calculated on an ongoing basis. Because DVB has been using the advanced IRB approach to report its capital requirements for credit risk since January 1, 2008, it is exempted under section 13 (2) no. 6 SolvV from the calculation of the DZ BANK banking group's cover ratio.

The individual IRBA institutions use internal rating systems to cover their main business lines. Only segments that are immaterial in terms of their level of credit risk will continue to use the Standardized Approach to credit risk indefinitely. The other entities use the Standardized Approach to credit risk.

In the foundation IRB approach, the PD is estimated by the institutions themselves, while the loss given default (LGD) is specified by law. LGD values in the IRB approach for retail business and the advanced IRB approach are also based on the institutions' own estimates. By contrast, the Standardized Approach to credit risk is based on risk weights that either depend on external ratings or are set in accordance with regulatory requirements.

Validation activities are carried out depending on the method chosen for a rating system (see 'Description of internal rating systems' in this section). For example, the Gini coefficient is calculated in order to assess the discriminant power of the rating systems with a good/bad analysis, whereas the hit rate is used with the external rating method. The minimum data history of five years as required by article 180 et seq. CRR is maintained for both the estimates and the validation of risk parameters. Validation also involves comparing the expected probability of default with the actual default rate for each rating system and, in the event of significant discrepancies, describing the underlying causes.

For each institution that uses the IRB approach there is an implementation plan that ensures compliance with the thresholds prescribed by the CRR or approved by the supervisory authority. Compliance with these thresholds is one of the preconditions for using the IRB approaches.

#### 6.6.3.4 Use of internal estimates for purposes other than calculating risk-weighted exposures under the IRB approach

(ARTICLE 452 SENTENCE 1 LETTER B (II) CRR)

Internal rating systems are at the heart of credit risk management for the entities in the DZ BANK banking group. The credit ratings used for internal management purposes and regulatory reporting purposes are identical. Internal rating systems are used in the following areas:

– The **exposure limits** for lending or trading transactions for which there is a risk of default are partly determined by internal ratings.

The profit-contribution-based **pre-analysis** of loans, which is carried out as part of operational planning and constitutes the basis for pricing, is based on sales commission and cost determinants such as standard risk costs and the regulatory and economic capital costs involved in covering expected and unexpected losses. The two latter cost components are based on internal ratings.

– The **level of authority** for decision-makers in both front-office and back-office divisions to approve loan applications is also determined by internal ratings.

When **loans are analyzed ex-post** after an agreement has been concluded, the profit contributed is determined by, for example, the standard risk costs and the regulatory and economic capital costs based on internal ratings.

– During the term of the loan, internal ratings determine the extent to which **credit ratings are monitored**.
– Taking the overall economic situation into account, **specific and portfolio loan loss allowances are planned** on the basis of the calculation of standard risk costs and credit risk (expected loss). The level of costs depends on internal ratings and, if applicable, loss rates.
– The risk of unexpected losses is measured using **credit value-at-risk systems** that are based on internal credit ratings and the corresponding default probabilities as well as further risk parameters.
– And finally, internal ratings play a key role in **internal credit risk reporting**.

### 6.6.3.5 Control mechanisms for the rating systems
(ARTICLE 452 SENTENCE 1 LETTER B (IV) CRR)

The internal rating systems used are validated once a year on the basis of internal and, in some cases, external data. **Validation** consists partly of quantitative analysis aimed at measuring the rating systems' discriminant power and stability and at calibrating them. It also includes qualitative analysis that tests the use of these rating systems for internal management purposes with respect to their model design and data quality. In addition, pool validation is carried out on the standard rating systems used throughout the cooperative financial network. When pool validation is conducted, the rating-related data of all banks that use the rating system concerned is collected and analyzed in the same way as in the internal bank validation process. If validations reveal any room for improvement, improvements are made when the rating systems are refined.

The monitoring function also includes checking that the rating systems are being properly used, regularly estimating the risk parameters derived from them, and reviewing these estimates. The findings of these monitoring activities are integrated into the internal reporting system.

The rating systems used by DZ BANK have been approved by the Board of Managing Directors.

The independent validation unit at DZ BANK acts as the credit risk monitoring unit for the rating systems in the Group Risk Controlling division. It operates independently of the personnel and management functions that are responsible for originating and renewing exposures. It reports directly to senior management and is responsible for monitoring DZ BANK's rating systems. Because the development and validation of rating systems have to be kept separate in accordance with regulatory requirements, some of the tasks relating to development of the systems are carried out by another unit.

The internal audit functions in the DZ BANK Group conduct an annual risk assessment for the rating systems, on the basis of which a risk-driven decision is made about whether the audit schedules should include deep-dive audits of the individual rating systems or individual aspects of these systems. Regardless of the outcome of the annual risk assessment, compliance with all regulatory requirements applicable to internal rating systems is reviewed at three-year intervals. Group standards for auditing the IRBA rating systems ensure that the audit approach is harmonized as far as possible across the group.

As well as the internal rating systems (PD models), all of the DZ BANK banking group's LGD and CCF models are validated once a year on the basis of internal and external data. This task is the responsibility of the independent validation units of the various subsidiaries in the DZ BANK banking group.

As a rule, validation of the LGD and CCF models consists of quantitative analysis aimed at measuring predictive power and stability and at calibrating the procedures. It also includes qualitative analysis that tests the use of the models for internal management purposes with respect to their model design and data quality. Furthermore, the analysis focuses on gauging whether the observations are representative of loss events that are expected in the future.

Process validation is another key aspect of the review of the LGD and CCF models. In this case, the focus is on checking the correct technical implementation of the parameters in all of the systems in which they are applied.

#### 6.6.3.6 Process of assigning exposures and borrowers to rating categories and risk pools
(ARTICLE 452 SENTENCE 1 LETTER C CRR)

Every borrower clearly falls into a defined area of an internal rating system based on industrial sector codes, revenue characteristics, and business specifics. As a rule, it is not possible to conduct business that bears a default risk with borrowers who do not have an internal rating. All rating systems are assigned – without any overlaps – to one regulatory exposure class. The relevant rating models are used as part of the credit application and approval process to classify the applicant or the guarantor. The classification of every borrower or guarantor must be reviewed at least once a year. All relevant input factors and ratings conducted are saved in the data processing systems so that there is a complete rating history for every customer and every transaction.

### 6.6.4 Quantitative information on use of the IRB approach
(ARTICLE 452 SENTENCE 1 LETTERS D TO H CRR)

#### 6.6.4.1 Overview

Section 6.6.4 focuses on default risk for exposures under the IRB approach.

Fig. 50 and Fig. 51 show the lending volumes under the IRB approach for borrowers and transactions that are classified on the basis of internal credit ratings. The rating systems used internally are unambiguously assigned to one regulatory exposure class. The borrowers/transactions are assigned to a credit rating category based on their individual rating in the form of their specific default probability or the expected loss for a rating category. Classification as 'investment grade', 'non-investment grade', or 'default' is based on the corresponding default probabilities for each rating category on the standardized groupwide master scale of the DZ BANK banking group.

#### 6.6.4.2 Lending volume broken down by PD category under the foundation IRB approach
(ARTICLE 452 SENTENCE 1 LETTERS D TO G CRR)

Fig. 50 shows the parameters used in the DZ BANK banking group to calculate the capital requirements on the basis of IRB rating systems. The exposure classes are broken down by PD category so that the credit quality of the portfolio can be assessed. The on-balance-sheet exposures before credit conversion factor and the off-balance-sheet exposures before credit risk mitigation are disclosed in columns a and b, while columns c to l contain the regulatory values, e.g. average values for PD, LGD, and term to maturity, as well as the RWAs and their density, expected loss (EL), and loan loss allowances and provisions for each exposure class.

The disclosures are based on the exposure classes (central governments and central banks, institutions, corporates, and long-term equity investments) under the IRB approach and are also broken down by PD category. The exposure for undrawn credit lines is calculated by applying the credit conversion factors to the carrying amount. The average risk weights reveal borrowers' credit ratings and the extent to which transactions are collateralized. The number of borrowers in each exposure class is also stated. Fig. 50 does not contain any disclosures regarding securitization exposures. Information on these exposures is presented separately in section 7.

FIG. 50 – EU CR6 – FIRB APPROACH – CREDIT RISK EXPOSURES BY EXPOSURE CLASS AND PD RANGE (FIRB)

| PD range | a | b | c | d | e | f | g | H | i | j | k | l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| € million (unless indicated otherwise) | Original on-balance-sheet gross exposures | Off-balance-sheet exposures pre-CCF | Average CCF (%) | EAD after credit risk mitigation and after CCF | Average PD (%) | Number of borrowers | Average LGD (%) | Average maturity (days) | RWAs | RWA density (%) | EL | Loan loss allowances and provisions |
| **Central governments and central banks** | | | | | | | | | | | | |
| 0.00 to < 0.15 | 7,295 | - | - | 7,490 | 0.01 | 21 | 45.00 | 898 | 598 | 7.99 | 0 | 0 |
| 0.15 to < 0.25 | - | - | - | - | - | 1 | - | - | - | - | - | - |
| 0.25 to < 0.50 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.50 to < 0.75 | 114 | - | - | 114 | 0.50 | 1 | 1.88 | 180 | 2 | 2.06 | 0 | - |
| 0.75 to < 2.50 | - | - | - | - | - | - | - | - | - | - | - | - |
| 2.50 to < 10.00 | 0 | - | - | 0 | 8.98 | 2 | 45.04 | 900 | 0 | 196.85 | 0 | - |
| 10.00 to < 100.00 | 16 | - | - | 16 | 30.00 | 3 | 45.00 | 900 | 44 | 263.75 | 2 | - |
| 100.00 (default) | - | - | - | - | - | - | - | - | - | - | - | - |
| Subtotal | 7,425 | - | - | 7,507 | 0.08 | 28 | 44.36 | 887 | 644 | 8.45 | 3 | 0 |
| **Institutions** | | | | | | | | | | | | |
| 0.00 to < 0.15 | 17,966 | 1,090 | 30.97 | 16,220 | 0.06 | 422 | 23.80 | 842 | 2,952 | 18.20 | 3 | -2 |
| 0.15 to < 0.25 | 2,329 | 123 | 22.78 | 2,870 | 0.18 | 136 | 14.62 | 726 | 837 | 29.16 | 1 | -1 |
| 0.25 to < 0.50 | 698 | 23 | 68.76 | 522 | 0.35 | 53 | 22.49 | 882 | 574 | 109.97 | 1 | -1 |
| 0.50 to < 0.75 | 498 | 121 | 24.37 | 268 | 0.50 | 60 | 15.94 | 777 | 413 | 154.01 | 1 | -1 |
| 0.75 to < 2.50 | 642 | 92 | 15.29 | 618 | 1.05 | 82 | 43.08 | 900 | 666 | 107.80 | 3 | -2 |
| 2.50 to < 10.00 | 559 | 211 | 18.85 | 475 | 5.39 | 92 | 42.67 | 900 | 823 | 173.24 | 11 | -10 |
| 10.00 to < 100.00 | 36 | 43 | 21.86 | 43 | 15.82 | 38 | 45.00 | 900 | 96 | 220.49 | 3 | -1 |
| 100.00 (default) | 246 | - | - | 104 | 100.00 | 6 | 45.00 | 900 | - | - | 47 | -68 |
| Subtotal | 22,974 | 1,703 | 27.83 | 21,120 | 0.58 | 889 | 22.59 | 824 | 6,361 | 30.12 | 69 | -86 |
| **Corporates – total** | | | | | | | | | | | | |
| 0.00 to < 0.15 | 28,611 | 3,734 | 59.05 | 30,822 | 0.06 | 1,815 | 38.77 | 900 | 5,632 | 18.27 | 7 | -8 |
| 0.15 to < 0.25 | 16,118 | 8,744 | 61.80 | 21,484 | 0.19 | 1,584 | 42.26 | 900 | 8,812 | 41.02 | 18 | -18 |
| 0.25 to < 0.50 | 8,074 | 5,186 | 53.36 | 10,799 | 0.35 | 976 | 42.89 | 900 | 6,198 | 57.40 | 16 | -19 |
| 0.50 to < 0.75 | 4,629 | 4,339 | 48.44 | 6,592 | 0.50 | 876 | 44.13 | 900 | 4,670 | 70.84 | 15 | -18 |
| 0.75 to < 2.50 | 5,496 | 6,286 | 46.04 | 8,112 | 1.08 | 1,642 | 44.36 | 900 | 7,607 | 93.77 | 39 | -59 |
| 2.50 to < 10.00 | 2,260 | 1,642 | 49.00 | 2,033 | 3.84 | 509 | 44.76 | 900 | 2,834 | 139.43 | 35 | -47 |
| 10.00 to < 100.00 | 45 | 19 | 73.26 | 56 | 24.72 | 111 | 43.14 | 900 | 131 | 234.66 | 6 | -4 |
| 100.00 (default) | 1,059 | 135 | 76.57 | 1,060 | 100.00 | 290 | 44.84 | 900 | - | - | 474 | -555 |
| Subtotal | 66,292 | 30,085 | 54.16 | 80,957 | 1.69 | 7,803 | 41.48 | 900 | 35,885 | 44.33 | 610 | -728 |
| **Corporates – of which: SMEs** | | | | | | | | | | | | |
| 0.00 to < 0.15 | 5,282 | 255 | 74.72 | 5,472 | 0.06 | 630 | 36.59 | 900 | 747 | 13.66 | 1 | -1 |
| 0.15 to < 0.25 | 1,417 | 290 | 58.14 | 1,574 | 0.19 | 325 | 38.47 | 900 | 429 | 27.28 | 1 | -1 |
| 0.25 to < 0.50 | 295 | 135 | 56.08 | 368 | 0.35 | 213 | 40.24 | 900 | 146 | 39.65 | 1 | -1 |
| 0.50 to < 0.75 | 273 | 205 | 52.54 | 376 | 0.50 | 215 | 41.53 | 900 | 190 | 50.43 | 1 | -1 |
| 0.75 to < 2.50 | 585 | 558 | 55.26 | 877 | 1.20 | 589 | 43.92 | 900 | 652 | 74.37 | 5 | -7 |
| 2.50 to < 10.00 | 195 | 205 | 43.14 | 281 | 4.25 | 234 | 44.51 | 900 | 303 | 107.72 | 5 | -9 |
| 10.00 to < 100.00 | 5 | 1 | 89.23 | 6 | 19.05 | 6 | 44.53 | 900 | 10 | 171.26 | 1 | -1 |
| 100.00 (default) | - | - | - | - | - | - | - | - | - | - | - | - |
| Subtotal | 8,054 | 1,649 | 57.02 | 8,954 | 0.37 | 2,212 | 38.25 | 900 | 2,478 | 27.67 | 14 | -20 |
| **Corporates – of which: specialized lending** | | | | | | | | | | | | |
| 0.00 to < 0.15 | 9,545 | 351 | 79.44 | 9,818 | 0.06 | 452 | 38.29 | 900 | 1,642 | 16.72 | 2 | -3 |
| 0.15 to < 0.25 | 6,034 | 1,874 | 75.76 | 7,444 | 0.20 | 354 | 41.40 | 900 | 2,912 | 39.11 | 6 | -8 |
| 0.25 to < 0.50 | 3,532 | 1,002 | 77.27 | 4,297 | 0.35 | 187 | 41.99 | 900 | 2,332 | 54.27 | 6 | -9 |
| 0.50 to < 0.75 | 1,262 | 250 | 79.33 | 1,450 | 0.50 | 87 | 43.17 | 900 | 966 | 66.65 | 3 | -6 |
| 0.75 to < 2.50 | 460 | 68 | 91.24 | 509 | 1.08 | 91 | 42.02 | 900 | 397 | 77.94 | 2 | -12 |
| 2.50 to < 10.00 | 16 | 7 | 75.23 | 9 | 3.18 | 18 | 42.53 | 900 | 11 | 111.82 | 0 | -1 |
| 10.00 to < 100.00 | 15 | - | - | 15 | 30.00 | 66 | 44.85 | 900 | 40 | 263.39 | 2 | 0 |
| 100.00 (default) | 187 | 10 | 72.68 | 171 | 100.00 | 30 | 44.76 | 900 | - | - | 76 | -83 |
| Subtotal | 21,051 | 3,562 | 77.08 | 23,713 | 0.94 | 1,285 | 40.37 | 900 | 8,298 | 34.99 | 99 | -122 |

| PD range | a | b | c | d | e | f | g | H | i | j | k | l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| € million (unless indicated otherwise) | Original on-balance-sheet gross exposures | Off-balance-sheet exposures pre-CCF | Average CCF (%) | EAD after credit risk mitigation and after CCF | Average PD (%) | Number of borrowers | Average LGD (%) | Average maturity (days) | RWAs | RWA density (%) | EL | Loan loss allowances and provisions |
| **Corporates – of which: purchased receivables** | | | | | | | | | | | | |
| 0.00 to < 0.15 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.15 to < 0.25 | 1 | - | - | 1 | 0.23 | 1 | 45.00 | 900 | 0 | 50.17 | 0 | 0 |
| 0.25 to < 0.50 | 21 | - | - | 20 | 0.35 | 5 | 45.00 | 900 | 12 | 59.12 | 0 | 0 |
| 0.50 to < 0.75 | 7 | - | - | 7 | 0.50 | 4 | 45.00 | 900 | 5 | 73.79 | 0 | 0 |
| 0.75 to < 2.50 | 21 | 8 | 100.00 | 29 | 1.32 | 6 | 45.00 | 900 | 30 | 104.75 | 0 | 0 |
| 2.50 to < 10.00 | 1 | - | - | 1 | 6.00 | 1 | 45.00 | 900 | 1 | 169.19 | 0 | 0 |
| 10.00 to < 100.00 | - | - | - | - | - | - | - | - | - | - | - | - |
| 100.00 (default) | - | - | - | - | - | - | - | - | - | - | - | - |
| Subtotal | 50 | 8 | 100.00 | 57 | 0.92 | 17 | 45.00 | 900 | 48 | 85.12 | 0 | 0 |
| **Corporates – of which: other** | | | | | | | | | | | | |
| 0.00 to < 0.15 | 13,784 | 3,128 | 55.48 | 15,532 | 0.06 | 733 | 39.85 | 900 | 3,243 | 20.88 | 4 | -4 |
| 0.15 to < 0.25 | 8,666 | 6,581 | 57.98 | 12,465 | 0.19 | 904 | 43.26 | 900 | 5,471 | 43.89 | 10 | -9 |
| 0.25 to < 0.50 | 4,226 | 4,050 | 47.35 | 6,114 | 0.35 | 571 | 43.68 | 900 | 3,708 | 60.66 | 9 | -9 |
| 0.50 to < 0.75 | 3,087 | 3,884 | 46.23 | 4,759 | 0.50 | 570 | 44.63 | 900 | 3,509 | 73.72 | 11 | -11 |
| 0.75 to < 2.50 | 4,430 | 5,652 | 44.52 | 6,697 | 1.06 | 956 | 44.59 | 900 | 6,528 | 97.47 | 32 | -40 |
| 2.50 to < 10.00 | 2,048 | 1,431 | 49.72 | 1,741 | 3.78 | 256 | 44.81 | 900 | 2,520 | 144.69 | 30 | -36 |
| 10.00 to < 100.00 | 25 | 18 | 72.02 | 35 | 23.43 | 39 | 42.16 | 900 | 82 | 233.28 | 3 | -3 |
| 100.00 (default) | 872 | 125 | 76.90 | 889 | 100.00 | 260 | 44.85 | 900 | - | - | 398 | -472 |
| Subtotal | 37,137 | 24,867 | 50.67 | 48,233 | 2.31 | 4,289 | 42.62 | 900 | 25,061 | 51.96 | 497 | -586 |
| **Long-term equity investments** | | | | | | | | | | | | |
| 0.00 to < 0.15 | 33 | - | - | 33 | 0.09 | 3 | 90.00 | 1,800 | 32 | 96.45 | 0 | - |
| 0.15 to < 0.25 | 1 | - | - | 1 | 0.23 | 1 | 90.00 | 1,800 | 1 | 151.43 | 0 | - |
| 0.25 to < 0.50 | 0 | - | - | 0 | 0.35 | 1 | 90.00 | 1,800 | 0 | 181.71 | 0 | - |
| 0.50 to < 0.75 | 0 | - | - | 0 | 0.50 | 1 | 90.00 | 1,800 | 0 | 209.22 | 0 | - |
| 0.75 to < 2.50 | 30 | - | - | 30 | 0.75 | 1 | 90.00 | 1,800 | 72 | 241.04 | 0 | - |
| 2.50 to < 10.00 | 1 | - | - | 1 | 6.00 | 2 | 90.00 | 1,800 | 6 | 401.26 | 0 | - |
| 10.00 to < 100.00 | - | - | - | - | - | - | - | - | - | - | - | - |
| 100.00 (default) | 0 | - | - | 0 | 100.00 | 2 | 90.00 | 5 | - | - | 0 | - |
| Subtotal | 66 | - | - | 66 | 0.53 | 11 | 90.00 | 1,800 | 112 | 169.92 | 0 | - |
| **Total of all portfolios as at Dec. 31, 2020** | **96,757** | **31,788** | **52.75** | **109,650** | **1.31** | **8,731** | **36.87** | **880** | **43,002** | **36.26** | **682** | **-814** |
| Total of all portfolios as at Jun 30, 2020 | 110,339 | 29,171 | 52.00 | 123,275 | 1.12 | 8,599 | 36.12 | 872 | 43,230 | 35.07 | 599 | -598 |

The reduction in on-balance-sheet and off-balance-sheet exposures is attributable to transactions that matured in the second half of 2020.

### 6.6.4.3 Lending volume broken down by PD category under the advanced IRB approach

(ARTICLE 452 SENTENCE 1 LETTERS D TO G CRR)

Fig. 51 shows the transactions assigned to the advanced IRB approach, broken down by exposure class pursuant to article 147 CRR. Within the exposure classes, they are allocated to one of 8 PD categories.

FIG. 51 – EU CR6 – AIRB APPROACH – CREDIT RISK EXPOSURES BY EXPOSURE CLASS AND PROBABILITY OF DEFAULT

| PD range | a | b | c | d | e | f | g | h | i | j | k | l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| € million (unless indicated otherwise) | Original on-balance-sheet gross exposures | Off-balance-sheet exposures pre-CCF | Average CCF (%) | EAD after credit risk mitigation and after CCF | Average PD (%) | Number of borrowers | Average LGD (%) | Average maturity (days) | RWAs | RWA density (%) | EL | Loan loss allowances and provisions |
| **Central governments and central banks** | | | | | | | | | | | | |
| 0.00 to < 0.15 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.15 to < 0.25 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.25 to < 0.50 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.50 to < 0.75 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.75 to < 2.50 | - | - | - | - | - | - | - | - | - | - | - | - |
| 2.50 to < 10.00 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10.00 to < 100.00 | - | - | - | - | - | - | - | - | - | - | - | - |
| 100.00 (default) | - | - | - | - | - | - | - | - | - | - | - | - |
| Subtotal | - | - | - | - | - | - | - | - | - | - | - | - |
| **Institutions** | | | | | | | | | | | | |
| 0.00 to < 0.15 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.15 to < 0.25 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.25 to < 0.50 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.50 to < 0.75 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.75 to < 2.50 | - | - | - | - | - | - | - | - | - | - | - | - |
| 2.50 to < 10.00 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10.00 to < 100.00 | - | - | - | - | - | - | - | - | - | - | - | - |
| 100.00 (default) | - | - | - | - | - | - | - | - | - | - | - | - |
| Subtotal | - | - | - | - | - | - | - | - | - | - | - | - |
| **Corporates – total** | | | | | | | | | | | | |
| 0.00 to < 0.15 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.15 to < 0.25 | 268 | 14 | 100.00 | 282 | 0.20 | 16 | 8.49 | 881 | 25 | 8.90 | 0 | 0 |
| 0.25 to < 0.50 | 265 | - | - | 265 | 0.34 | 13 | 11.91 | 705 | 33 | 12.41 | 0 | -1 |
| 0.50 to < 0.75 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.75 to < 2.50 | 997 | 31 | 100.00 | 1,028 | 1.51 | 99 | 6.16 | 820 | 156 | 15.19 | 1 | -5 |
| 2.50 to < 10.00 | 1,265 | - | - | 1,265 | 5.90 | 95 | 8.29 | 796 | 391 | 30.94 | 6 | -18 |
| 10.00 to < 100.00 | 112 | - | - | 112 | 31.52 | 11 | 6.25 | 606 | 40 | 35.79 | 2 | -5 |
| 100.00 (default) | 822 | 67 | 100.00 | 889 | 100.00 | 64 | 40.60 | 630 | - | - | 361 | -444 |
| Subtotal | 3,730 | 112 | 100.00 | 3,842 | 26.44 | 298 | 15.40 | 758 | 646 | 16.81 | 370 | -473 |
| **Corporates – of which: SMEs** | | | | | | | | | | | | |
| 0.00 to < 0.15 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.15 to < 0.25 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.25 to < 0.50 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.50 to < 0.75 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.75 to < 2.50 | - | - | - | - | - | - | - | - | - | - | - | - |
| 2.50 to < 10.00 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10.00 to < 100.00 | - | - | - | - | - | - | - | - | - | - | - | - |
| 100.00 (default) | - | - | - | - | - | - | - | - | - | - | - | - |
| Subtotal | - | - | - | - | - | - | - | - | - | - | - | - |
| **Corporates – of which: specialized lending** | | | | | | | | | | | | |
| 0.00 to < 0.15 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.15 to < 0.25 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.25 to < 0.50 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.50 to < 0.75 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.75 to < 2.50 | - | - | - | - | - | - | - | - | - | - | - | - |
| 2.50 to < 10.00 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10.00 to < 100.00 | - | - | - | - | - | - | - | - | - | - | - | - |
| 100.00 (default) | - | - | - | - | - | - | - | - | - | - | - | - |
| Subtotal | - | - | - | - | - | - | - | - | - | - | - | - |

| PD range | a | b | c | d | e | f | g | h | i | j | k | l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| € million (unless indicated otherwise) | Original on-balance-sheet gross exposures | Off-balance-sheet exposures pre-CCF | Average CCF (%) | EAD after credit risk mitigation and after CCF | Average PD (%) | Number of borrowers | Average LGD (%) | Average maturity (days) | RWAs | RWA density (%) | EL | Loan loss allowances and provisions |
| **Corporates – of which: purchased receivables** | | | | | | | | | | | | |
| 0.00 to < 0.15 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.15 to < 0.25 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.25 to < 0.50 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.50 to < 0.75 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.75 to < 2.50 | - | - | - | - | - | - | - | - | - | - | - | - |
| 2.50 to < 10.00 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10.00 to < 100.00 | - | - | - | - | - | - | - | - | - | - | - | - |
| 100.00 (default) | - | - | - | - | - | - | - | - | - | - | - | - |
| Subtotal | - | - | - | - | - | - | - | - | - | - | - | - |
| **Corporates – of which: other** | | | | | | | | | | | | |
| 0.00 to < 0.15 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.15 to < 0.25 | 268 | 14 | 100.00 | 282 | 0.20 | 16 | 8.49 | 881 | 25 | 8.90 | 0 | 0 |
| 0.25 to < 0.50 | 265 | - | - | 265 | 0.34 | 13 | 11.91 | 705 | 33 | 12.41 | 0 | -1 |
| 0.50 to < 0.75 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.75 to < 2.50 | 997 | 31 | 100.00 | 1,028 | 1.51 | 99 | 6.16 | 820 | 156 | 15.19 | 1 | -5 |
| 2.50 to < 10.00 | 1,265 | - | - | 1,265 | 5.90 | 95 | 8.29 | 796 | 391 | 30.94 | 6 | -18 |
| 10.00 to < 100.00 | 112 | - | - | 112 | 31.52 | 11 | 6.25 | 606 | 40 | 35.79 | 2 | -5 |
| 100.00 (default) | 822 | 67 | 100.00 | 889 | 100.00 | 64 | 40.60 | 630 | - | - | 361 | -444 |
| Subtotal | 3,730 | 112 | 100.00 | 3,842 | 26.44 | 298 | 15.40 | 758 | 646 | 16.81 | 370 | -473 |
| **Retail business – total** | | | | | | | | | | | | |
| 0.00 to < 0.15 | 8,968 | 129 | 60.71 | 9,047 | 0.10 | 44,463 | 17.69 | 5 | 437 | 4.84 | 2 | -1 |
| 0.15 to < 0.25 | 4,195 | 485 | 61.70 | 4,494 | 0.19 | 61,440 | 12.91 | - | 243 | 5.42 | 1 | -1 |
| 0.25 to < 0.50 | 4,635 | 387 | 72.71 | 4,543 | 0.36 | 249,679 | 22.15 | 423 | 650 | 14.30 | 4 | -4 |
| 0.50 to < 0.75 | 14,095 | 1,018 | 92.48 | 15,037 | 0.52 | 434,275 | 14.71 | 213 | 1,879 | 12.50 | 13 | -11 |
| 0.75 to < 2.50 | 36,751 | 4,765 | 98.12 | 41,426 | 1.08 | 696,981 | 13.37 | 132 | 7,405 | 17.88 | 66 | -56 |
| 2.50 to < 10.00 | 6,451 | 462 | 98.94 | 6,908 | 4.12 | 190,222 | 20.09 | 424 | 2,996 | 43.37 | 57 | -70 |
| 10.00 to < 100.00 | 1,537 | 58 | 98.07 | 1,595 | 33.78 | 50,048 | 18.17 | 355 | 1,098 | 68.84 | 84 | -110 |
| 100.00 (default) | 959 | 12 | 91.94 | 969 | 100.00 | 52,872 | 26.44 | 473 | 351 | 36.22 | 231 | -267 |
| Subtotal | 77,592 | 7,317 | 92.96 | 84,018 | 2.80 | 1,779,980 | 15.32 | 174 | 15,060 | 17.92 | 457 | -522 |
| **Retail business – SMEs, secured by mortgages on immovable property** | | | | | | | | | | | | |
| 0.00 to < 0.15 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.15 to < 0.25 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.25 to < 0.50 | 0 | - | - | 0 | 0.35 | - | 9.48 | - | 0 | 5.16 | 0 | 0 |
| 0.50 to < 0.75 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.75 to < 2.50 | 0 | - | - | 0 | 0.75 | - | 29.51 | - | 0 | 27.45 | 0 | 0 |
| 2.50 to < 10.00 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10.00 to < 100.00 | - | - | - | - | - | - | - | - | - | - | - | - |
| 100.00 (default) | - | - | - | - | - | - | - | - | - | - | - | - |
| Subtotal | 0 | - | - | 0 | 0.54 | - | 18.92 | - | 0 | 15.67 | 0 | 0 |
| **Retail business – non-SMEs, secured by mortgages on immovable property** | | | | | | | | | | | | |
| 0.00 to < 0.15 | 5,138 | 123 | 5,857.00 | 5,209 | 0.08 | 417 | 11.44 | - | 133 | 2.55 | 1 | -1 |
| 0.15 to < 0.25 | 3,923 | 465 | 60.06 | 4,202 | 0.19 | 3,780 | 12.88 | - | 225 | 5.37 | 1 | -1 |
| 0.25 to < 0.50 | 2,759 | 369 | 71.34 | 3,022 | 0.35 | 27,594 | 10.65 | - | 206 | 6.83 | 1 | -1 |
| 0.50 to < 0.75 | 11,547 | 1,009 | 92.42 | 12,480 | 0.50 | 146,809 | 9.16 | - | 944 | 7.57 | 6 | -4 |
| 0.75 to < 2.50 | 33,111 | 4,752 | 98.11 | 37,773 | 1.06 | 401,924 | 10.50 | - | 5,492 | 14.54 | 43 | -31 |
| 2.50 to < 10.00 | 4,891 | 458 | 98.93 | 5,344 | 4.07 | 56,713 | 11.31 | - | 1,802 | 33.72 | 24 | -26 |
| 10.00 to < 100.00 | 1,168 | 56 | 98.00 | 1,223 | 36.06 | 14,535 | 10.61 | - | 735 | 60.11 | 46 | -39 |
| 100.00 (default) | 593 | 12 | 91.82 | 604 | 100.00 | 9,003 | 17.07 | - | 183 | 30.32 | 90 | -67 |
| Subtotal | 63,128 | 7,244 | 92.89 | 69,857 | 2.50 | 660,775 | 10.60 | - | 9,721 | 13.92 | 212 | -169 |
| **Retail business – qualified revolving** | | | | | | | | | | | | |
| 0.00 to < 0.15 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.15 to < 0.25 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.25 to < 0.50 | - | - | - | - | - | - | - | - | - | - | - | - |

| PD range | a | b | c | d | e | f | g | h | i | j | k | l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| € million (unless indicated otherwise) | Original on-balance-sheet gross exposures | Off-balance-sheet exposures pre-CCF | Average CCF (%) | EAD after credit risk mitigation and after CCF | Average PD (%) | Number of borrowers | Average LGD (%) | Average maturity (days) | RWAs | RWA density (%) | EL | Loan loss allowances and provisions |
| 0.50 to < 0.75 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.75 to < 2.50 | - | - | - | - | - | - | - | - | - | - | - | - |
| 2.50 to < 10.00 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10.00 to < 100.00 | - | - | - | - | - | - | - | - | - | - | - | - |
| 100.00 (default) | - | - | - | - | - | - | - | - | - | - | - | - |
| Subtotal | - | - | - | - | - | - | - | - | - | - | - | - |
| **Retail business – other SMEs** | | | | | | | | | | | | |
| 0.00 to < 0.15 | 8 | - | - | 8 | 0.12 | - | 25.71 | - | 1 | 6.62 | 0 | 0 |
| 0.15 to < 0.25 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.25 to < 0.50 | 370 | - | - | 1 | 0.33 | - | 26.33 | - | 0 | 13.39 | 0 | 0 |
| 0.50 to < 0.75 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.75 to < 2.50 | - | - | - | - | - | - | - | - | - | - | - | - |
| 2.50 to < 10.00 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10.00 to < 100.00 | - | - | - | - | - | - | - | - | - | - | - | - |
| 100.00 (default) | 1 | - | - | - | - | - | - | - | - | - | - | - |
| Subtotal | 380 | - | - | 9 | 0.14 | - | 25.77 | - | 1 | 7.30 | 0 | 0 |
| **Retail business – other non-SMEs** | | | | | | | | | | | | |
| 0.00 to < 0.15 | 3,823 | 7 | 100.00 | 3,830 | 0.12 | 44,046 | 26.17 | 13 | 304 | 7.94 | 1 | 0 |
| 0.15 to < 0.25 | 272 | 20 | 100.00 | 292 | 0.22 | 57,660 | 13.44 | - | 18 | 6.17 | 0 | 0 |
| 0.25 to < 0.50 | 1,506 | 19 | 100.00 | 1,520 | 0.37 | 222,085 | 45.01 | 1,265 | 443 | 29.16 | 3 | -3 |
| 0.50 to < 0.75 | 2,549 | 9 | 100.00 | 2,558 | 0.61 | 287,466 | 41.81 | 1,250 | 935 | 36.57 | 7 | -8 |
| 0.75 to < 2.50 | 3,640 | 13 | 100.00 | 3,653 | 1.30 | 295,057 | 43.10 | 1,495 | 1,913 | 52.37 | 23 | -25 |
| 2.50 to < 10.00 | 1,560 | 4 | 100.00 | 1,564 | 4.28 | 133,509 | 50.11 | 1,874 | 1,194 | 76.36 | 33 | -44 |
| 10.00 to < 100.00 | 369 | 2 | 100.00 | 371 | 26.26 | 35,513 | 43.10 | 1,526 | 362 | 97.64 | 38 | -72 |
| 100.00 (default) | 365 | 0 | 100.00 | 365 | 100.00 | 43,869 | 41.93 | 1,256 | 168 | 45.97 | 141 | -200 |
| Subtotal | 14,084 | 73 | 100.00 | 14,153 | 4.26 | 1,119,205 | 38.62 | 1,031 | 5,338 | 37.72 | 245 | -353 |
| **Other non-credit-obligation assets** | | | | | | | | | | | | |
| 0.00 to < 0.15 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.15 to < 0.25 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.25 to < 0.50 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.50 to < 0.75 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.75 to < 2.50 | - | - | - | - | - | - | - | - | - | - | - | - |
| 2.50 to < 10.00 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10.00 to < 100.00 | - | - | - | - | - | - | - | - | - | - | - | - |
| 100.00 (default) | - | - | - | - | - | - | - | - | - | - | - | - |
| Subtotal | - | - | - | - | - | - | - | - | - | - | - | - |
| **Total of all** | **81,322** | **7,429** | **93.06** | **87,860** | **3.83** | **1,904,392** | **15.33** | **199** | **15,706** | **17.88** | **827** | **-995** |
| Total of all | 80,607 | 7,068 | 94.18 | 87,263 | 4.21 | 1,936,169 | 15.59 | 974 | 16,064 | 18.41 | 943 | -1,139 |

1 Amount for prior-year period restated.

The increase in on-balance-sheet and off-balance-sheet exposures in Fig. 51 is attributable to new retail business at DZ BANK. Conversely, there was a fall in the 'corporates – other' subportfolio that was attributable to transactions that matured at DVB. The reduction in risk-weighted assets was due to lower average PDs. The decrease in loan loss allowances and provisions was attributable to the normalizing situation in the second half of 2020. The fall in the expected loss (EL) was mainly due to the reduction in average PDs.

Average maturities within the retail business exposure class are not disclosed under the AIRB because the formula for calculating risk-weighted assets specified by the supervisory authority in the retail business exposure class under the AIRB does not use the average maturity as an input. Consequently, no totals for the average maturity are disclosed either.

### 6.6.4.4 Collateralized lending volume under the IRB approaches

(ARTICLE 453 SENTENCE 1 LETTER G CRR)

This section presents the impact of credit derivatives on the calculation of capital requirements under the IRB approach. To this end, Fig. 52 shows the RWAs before credit risk has been mitigated using credit derivatives and compares them with the actual RWAs (i.e. after risk mitigation using credit derivatives and guarantees). The RWA disclosures are also based on on-balance-sheet and off-balance-sheet exposures. However, exposures subject to counterparty credit risk are not included in the following table.

FIG. 52 – EU CR7 – IRB APPROACH – EFFECT ON THE RWAS OF CREDIT DERIVATIVES USED AS CREDIT RISK MITIGATION TECHNIQUES

| | | a | b | a | b |
|---|---|---|---|---|---|
| | | Dec. 31, 2020 | | Jun. 30, 2020 | |
| € million | | RWAs before credit derivatives | Actual RWAs | RWAs before credit derivatives | Actual RWAs |
| 1 | **FIRB approach exposure class** | **49,842** | **49,842** | **50,098** | **50,098** |
| 2 | Central governments and central banks | 644 | 644 | 833 | 833 |
| 3 | Institutions | 6,589 | 6,589 | 7,101 | 7,101 |
| 4 | Corporates – total | 42,609 | 42,609 | 42,164 | 42,164 |
| 5 | Corporates – SMEs | 2,504 | 2,504 | 2,646 | 2,646 |
| 6 | Corporates – specialized lending | 14,825 | 14,825 | 14,676 | 14,676 |
| 7 | Corporates – other | 25,280 | 25,280 | 24,842 | 24,842 |
| 8 | **AIRB approach exposure class** | **44,236** | **44,236** | **43,697** | **43,697** |
| 9 | Central governments and central banks | - | - | - | - |
| 10 | Institutions | - | - | - | - |
| 11 | Corporates – total | 646 | 646 | 1,061 | 1,061 |
| 12 | Corporates – of which: SMEs | - | - | - | - |
| 13 | Corporates – of which: specialized lending | - | - | - | - |
| 14 | Corporates – of which: other | 646 | 646 | 1,061 | 1,061 |
| 15 | Retail business – total | 15,060 | 15,060 | 15,003 | 15,003 |
| 16 | Retail business – SMEs, secured by mortgages on immovable property | — | — | - | - |
| 17 | Retail business – non-SMEs, secured by mortgages on immovable property | 9,721 | 9,721 | 9,374 | 9,374 |
| 18 | Retail business – qualified revolving | - | - | - | - |
| 19 | Retail business – other SMEs | 1 | 1 | 56 | 56 |
| 20 | Retail business – other non-SMEs | 5,338 | 5,338 | 5,573 | 5,573 |
| 21 | Long-term equity investments under the IRB approach | 26,753 | 26,753 | 25,986 | 25,986 |
| 22 | Other non-credit-obligation assets[1] | 1,777 | 1,777 | 1,647 | 1,647 |
| 23 | **Total** | **94,078** | **94,078** | **93,795** | **93,795** |

1 Other assets are assigned to the FIRB approach and form part of the total in row 1.

The RWAs under the IRB approach in Fig. 52 went up, primarily because of the increase in R+V's carrying amount, calculated in accordance with the equity method. The rise was partly offset by transactions that matured in the second half of 2020.

In the DZ BANK banking group, no credit derivatives were used for risk mitigation under the IRB approach. As a result, the RWAs before the mitigation of credit risk using credit derivatives are the same as the actual RWAs.

### 6.6.4.5 RWA flow statement for credit risk under the IRB approach

(ARTICLE 438 SENTENCE 1 LETTER D CRR)

Fig. 53 explains the fluctuation in the RWAs of risk-weighted exposure amounts under the IRB approach. The associated capital requirements during the reporting period are also shown.

FIG. 53 – EU CR8 – RWA FLOW STATEMENT OF CREDIT RISK EXPOSURES UNDER THE IRB APPROACH

| | | a | b | a | b |
|---|---|---|---|---|---|
| | | Dec. 31, 2020 | | Sep. 30, 2020 | |
| € million | | RWA amounts | Capital requirements | RWA amounts | Capital requirements |
| **1** | **Total RWAs as at the end of the previous reporting period** | **93,539** | **7,483** | 93,795 | 7,504 |
| 2 | Asset size | 1,356 | 108 | -254 | -20 |
| 3 | Asset quality | - | - | - | - |
| 4 | Model updates | - | - | - | - |
| 5 | Methodology and policy | -662 | -53 | - | - |
| 6 | Acquisitions and disposals | - | - | - | - |
| 7 | Foreign exchange movements | -11 | -1 | -8 | -1 |
| 8 | Other | -144 | -12 | 6 | 0 |
| **9** | **Total RWAs as at the end of the reporting period** | **94,078** | **7,526** | 93,539 | 7,483 |

The RWA amounts rose from €93,539 million as at September 30, 2020 to €94,078 million as at the reporting date. This growth of €539 million was largely due to the €1,356 million rise in the exposure, which was primarily because of the increase in R+V's carrying amount, calculated in accordance with the equity method. The decrease of €662 million relating to methodology and policy was mainly attributable to application of the CRR II quick fixes (SME supporting factor, infrastructure supporting factor, and RWAs for software deduction).

### 6.6.4.6 Actual specific credit risk adjustments and factors influencing losses incurred in lending business

(ARTICLE 452 SENTENCE 1 LETTERS G AND H CRR)

Fig. 54 contains information about the losses in the past 5 years in the following exposure classes: central governments and central banks, institutions, corporates (including SMEs, specialized lending, and purchased receivables that are treated as corporate loans), long-term equity investments that are backed by own funds based on individual probabilities of default (PD/LGD approach), and retail business (broken down into mortgage-backed exposures, qualified revolving, and other exposures under the IRB approach).

The calculations of the losses presented in Fig. 54 are based on the carrying amounts recognized under IFRS. Market-price-related write-downs on securities portfolios and long-term equity investments managed according to their default probabilities are not taken into account.

An actual loss of €421 million for the reporting period (2019: €451 million) was calculated for the subportfolios presented in accordance with the IRB approach (IRBA) in Fig. 54.

The information disclosed in the regulatory risk report includes the changes in loss allowances, provisions for loan commitments, and provisions for financial guarantee contracts that are reported in DZ BANK's 2020 Annual Report as follows: note 45 'Loss allowances' (page 266), note 61 'Loss allowances' (page 278), and note 69 'Provisions' (page 285).

Fig. 54 compares the expected losses with the losses actually incurred in the period January 1 to December 31 of the 2016 to 2020 financial years for the following IRBA exposure classes:

– Central governments and central banks
– Institutions
– Corporates (including SMEs, specialized lending, and purchased receivables that are treated as corporate loans)
– Long-term equity investments recognized under the PD/LGD approach
– Retail business.

The estimate of the expected losses for 2020 relates to the non-defaulting risk-weighted assets in the traditional lending business. The losses shown that have actually been incurred also relate to the exposures that had not yet defaulted at the beginning of the year under review. The definition of 'loss' corresponds to the definition used in Fig. 54. The supervisory authority intends this comparison to be the basis for measuring the efficiency of the process for allocating exposures or borrowers to rating categories as required by section 452 sentence 1 letter i CRR. In this respect, the table can be seen as a supplement to the description of the internal validation processes in the section 6.6.3.5 'Control mechanisms for the rating systems' in this report.

However, the comparison of expected and actual losses in the form described above should be viewed with the reservation that, due to methodology reasons, very few of the figures are directly comparable with each other. Furthermore, the expected losses relate to a static portfolio of risk-weighted assets, whereas the losses incurred are the result of a credit portfolio that is subject to change over the course of the year.

FIG. 54 – YEAR-ON-YEAR CHANGE IN THE ACTUAL LOSSES IN THE TOTAL CREDIT PORTFOLIO UNDER THE IRB APPROACH BY EXPOSURE CLASS

€ million

| Exposure class | Jan. 1 to Dec. 31, 2020 | Jan. 1 to Dec. 31, 2019 | Jan. 1 to Dec. 31, 2018 | Jan. 1 to Dec. 31, 2017 | Jan. 1 to Dec. 31, 2016 |
|---|---|---|---|---|---|
| Central governments and central banks | - | - | - | - | - |
| Institutions | 5 | -1 | - | - | 5 |
| Corporates | 235 | 246 | 101 | 830 | 356 |
| Long-term equity investments | - | 20 | - | - | - |
| Retail business, of which: loans secured against residential real estate | 17 | 5 | -1 | 28 | 9 |
| Retail business, of which: qualified, revolving | - | - | - | - | - |
| Retail business, of which: other | 163 | 181 | 195 | 55 | 48 |
| **Total** | **421** | **451** | **295** | **912** | **419** |

### 6.6.4.7 Validation results

(ARTICLE 452 SENTENCE 1 LETTER I CRR)

The findings of the reviews of the IRBA credit rating systems and EAD/LGD models conducted as part of validations in 2020 were largely unremarkable. The validation results for all separately calibrated IRBA parameters and partial models are set out in the following table, broken down by PD, LGD, and CCF.

FIG. 55 – VAL2 – VALIDATION RESULTS OF THE DZ BANK BANKING GROUP AS AT DECEMBER 31, 2020

| | PD | | LGD | | CCF | |
|---|---|---|---|---|---|---|
| **Validation** | **Number** | **EAD (%)** | **Number** | **EAD (%)** | **Number** | **EAD (%)** |
| Adequate | 20 | 96.00 | 6 | 78.00 | - | - |
| Too conservative – adjustment | 3 | 4.00 | - | - | 1 | 100.00 |
| Too progressive – adjustment recommended | - | - | 2 | 22.00 | - | - |
| Validation not yet completed | - | - | - | - | - | - |
| **Total** | **23** | **100.00** | **8** | **100.00** | **1** | **100.00** |

Individual risk parameter variants are classified as adequate if the validation does not trigger a recalibration and the current variant can continue to be used because it remains sufficiently conservative. A parameter is classified as too conservative or too progressive if the validation triggers a recalibration analysis that potentially may lead to the current variant being adjusted.

PD validations classified three models as too conservative. The validation reports recommended that the models be recalibrated. The notifications regarding the changes to the affected models are planned for June 30, 2021.

LGD validations classified two models as too progressive. The validation reports recommended that the models be revised. The revision work is currently under way.

The CCF validation classified one model as too conservative. The model development department is currently examining whether it needs to be revised.

Fig. 56 and Fig. 58 compare the PD determined per exposure class for the calculation of capital requirements with the effective default rates of the DZ BANK banking group's borrowers, under the FIRB and AIRB approaches respectively.

The gray fields in Fig. 56 to Fig. 59 indicate that no external rating is available for the particular variant.

The following tables show DZ BANK's credit rating master scale, in which internal credit ratings are matched to the ratings used by Moody's, Standard & Poor's, and Fitch. It should be noted that some internal ratings cannot be matched with a particular external rating because of the greater degree of refinement in the credit rating master scale.

FIG. 56 – EU CR9 – FIRB APPROACH – BACKTESTING OF THE PROBABILITY OF DEFAULT (PD) PER EXPOSURE CLASS AS AT DECEMBER 31, 2020

| a | b | | | c | d | e | | f | g | h | i |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Exposure class | PD range | External rating equivalent | | | Weighted average PD (%) | Arithmetic average PD by borrower (%) | Number of borrowers | | Defaulted borrowers in the year | | Average historical annual default rate (%) |
| | | Moody's | Standard & Poor's | Fitch | | | End of previous year | End of the year | | Of which: new borrowers | |
| **Central governments and central banks** | | | | | | | | | | | |
| Investment grade | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | 0.01 | 0.01 | 25 | 20 | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | 0.03 | 0.03 | 1 | 1 | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | - | - | - | - | - | - | - |
| 1E | 0.04 – 0.06 | | | | - | - | - | - | - | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | - | - | - | - | - | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | - | - | - | - | - | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | - | 0.15 | 1 | 1 | - | - | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | - | - | - | - | - | - | - |
| 2E | 0.28 – 0.42 | | | | - | - | - | - | - | - | - |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | 0.50 | 0.50 | 1 | 1 | - | - | - |
| Non-investment grade | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | - | - | 1 | - | - | - | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | - | - | - | - | - | - | - |
| 3D | 1.42 – 2.12 | | | | - | - | - | - | - | - | - |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | - | - | - | - | - | - | - |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | - | - | - | - | - | - | - |
| 4B | 4.78 – 7.17 | B2 | B | B | - | - | 2 | - | - | - | - |
| 4C | 7.17 – 10.75 | B3 | B- | B- | 9.00 | 9.50 | - | 2 | - | - | - |
| 4D | 10.75 – 16.13 | | | | - | - | 1 | - | - | - | - |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | 30.00 | 30.00 | - | 3 | - | - | - |
| Default | | | | | | | | | | | |
| 5 | 100.00 | | | | - | - | - | - | - | - | - |
| **Institutions** | | | | | | | | | | | |
| Investment grade | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | 1 | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | 0.03 | 0.03 | 183 | 89 | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | 0.04 | 0.04 | 52 | 60 | - | - | - |
| 1E | 0.04 – 0.06 | | | | 0.05 | 0.05 | 53 | 68 | - | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | 0.07 | 0.07 | 125 | 96 | - | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | 0.10 | 0.10 | 122 | 63 | - | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | 0.15 | 0.15 | 79 | 70 | - | - | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | 0.23 | 0.23 | 71 | 136 | - | - | - |
| 2E | 0.28 – 0.42 | | | | 0.35 | 0.35 | 50 | 44 | - | - | - |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | 0.50 | 0.50 | 72 | 41 | - | - | - |
| Non-investment grade | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | 0.75 | 0.75 | 38 | 31 | - | - | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | 1.10 | 1.10 | 42 | 22 | 1 | - | - |
| 3D | 1.42 – 2.12 | | | | 1.70 | 1.70 | 19 | 25 | - | - | - |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | 2.60 | 2.60 | 32 | 23 | - | - | - |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | 4.00 | 4.00 | 25 | 20 | 1 | - | - |
| 4B | 4.78 – 7.17 | B2 | B | B | 6.03 | 5.00 | 12 | 10 | - | - | - |
| 4C | 7.17 – 10.75 | B3 | B- | B- | 8.89 | 9.00 | 29 | 30 | - | - | - |
| 4D | 10.75 – 16.13 | | | | 13.28 | 15.26 | 18 | 17 | - | - | - |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | 30.00 | 28.81 | 31 | 38 | - | - | - |
| Default | | | | | | | | | | | |
| 5 | 100.00 | | | | 100.00 | 100.00 | 7 | 6 | - | - | - |

| a | b | | | c | d | e | | f | g | h | i |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Exposure class | PD range | External rating equivalent | | | Weighted average PD (%) | Arithmetic average PD by borrower (%) | Number of borrowers | | Defaulted borrowers in the year | | Average historical annual default rate (%) |
| | | Moody's | Standard & Poor's | Fitch | | | End of previous year | End of the year | | Of which: new borrowers | |
| **Corporates** | | | | | | | | | | | |
| Investment grade | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | 0.03 | 0.03 | 189 | 189 | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | 0.04 | 0.04 | 269 | 258 | - | - | - |
| 1E | 0.04 – 0.06 | | | | 0.05 | 0.05 | 575 | 489 | 1 | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | 0.07 | 0.07 | 449 | 371 | - | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | 0.10 | 0.10 | 552 | 544 | - | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | 0.16 | 0.16 | 732 | 674 | - | - | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | 0.25 | 0.23 | 949 | 854 | 1 | - | - |
| 2E | 0.28 – 0.42 | | | | 0.37 | 0.34 | 1,135 | 770 | - | - | - |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | 0.53 | 0.50 | 1,102 | 947 | 3 | - | - |
| Non-investment grade | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | 0.75 | 0.75 | 995 | 676 | 4 | 1 | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | 1.13 | 1.10 | 752 | 616 | 7 | 2 | - |
| 3D | 1.42 – 2.12 | | | | 1.78 | 1.70 | 534 | 515 | 9 | 2 | - |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | 2.67 | 2.60 | 253 | 263 | 9 | 3 | 0.01 |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | 4.02 | 4.00 | 135 | 144 | 8 | 2 | 0.01 |
| 4B | 4.78 – 7.17 | B2 | B | B | 6.01 | 6.00 | 44 | 69 | 9 | 1 | 0.03 |
| 4C | 7.17 – 10.75 | B3 | B- | B- | 8.64 | 9.52 | 34 | 61 | 1 | 1 | 0.01 |
| 4D | 10.75 – 16.13 | | | | 13.48 | 14.01 | 23 | 14 | 1 | 1 | - |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | 30.03 | 34.99 | 104 | 59 | 5 | 3 | 0.26 |
| Default | | | | | | | | | | | |
| 5 | 100.00 | | | | 100.00 | 100.00 | 307 | 290 | 51 | 22 | 0.15 |
| **Corporates – of which: SMEs** | | | | | | | | | | | |
| Investment grade | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | - | - | - | - | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | 0.04 | 0.04 | 54 | 64 | - | - | - |
| 1E | 0.04 – 0.06 | | | | 0.05 | 0.05 | 200 | 220 | - | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | 0.07 | 0.07 | 111 | 217 | - | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | 0.10 | 0.11 | 78 | 135 | - | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | 0.15 | 0.15 | 111 | 178 | - | - | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | 0.24 | 0.23 | 184 | 102 | - | - | - |
| 2E | 0.28 – 0.42 | | | | 0.39 | 0.35 | 202 | 207 | - | - | - |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | 0.50 | 0.50 | 226 | 207 | - | - | - |
| Non-investment grade | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | 0.75 | 0.75 | 261 | 215 | - | - | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | 1.10 | 1.10 | 249 | 200 | - | - | - |
| 3D | 1.42 – 2.12 | | | | 2.03 | 1.70 | 209 | 220 | - | - | 0.01 |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | 2.81 | 2.60 | 111 | 101 | - | - | 0.01 |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | 4.07 | 4.00 | 57 | 78 | - | - | 0.02 |
| 4B | 4.78 – 7.17 | B2 | B | B | 6.02 | 6.00 | 14 | 35 | - | - | 0.03 |
| 4C | 7.17 – 10.75 | B3 | B- | B- | 7.96 | 10.61 | 13 | 25 | - | - | - |
| 4D | 10.75 – 16.13 | | | | 13.50 | 13.50 | 5 | 2 | - | - | - |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | 30.00 | 30.00 | 9 | 6 | - | - | 0.25 |
| Default | | | | | | | | | | | |
| 5 | 100.00 | | | | 100.00 | 100.00 | - | - | - | - | - |
| **Corporates – of which: specialized lending** | | | | | | | | | | | |
| Investment grade | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |

| a | b | | | c | d | e | | f | g | h | i |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Exposure class | PD range | External rating equivalent | | | Weighted average PD (%) | Arithmetic average PD by borrower (%) | Number of borrowers | | Defaulted borrowers in the year | | Average historical annual default rate (%) |
| | | Moody's | Standard & Poor's | Fitch | | | End of previous year | End of the year | | Of which: new borrowers | |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | 0.03 | 0.03 | 14 | 52 | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | 0.04 | 0.04 | 119 | 110 | - | - | - |
| 1E | 0.04 – 0.06 | | | | 0.05 | 0.05 | 150 | 108 | - | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | 0.07 | 0.07 | 153 | 30 | - | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | 0.11 | 0.10 | 144 | 118 | - | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | 0.15 | 0.18 | 139 | 80 | - | - | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | 0.23 | 0.23 | 234 | 246 | 1 | - | - |
| 2E | 0.28 – 0.42 | | | | 0.37 | 0.35 | 305 | 180 | - | - | - |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | 0.56 | 0.50 | 238 | 131 | 1 | - | - |
| Non-investment grade | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | 0.75 | 0.75 | 206 | 114 | - | - | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | 1.10 | 1.10 | 122 | 35 | 2 | - | 0.01 |
| 3D | 1.42 – 2.12 | | | | 1.70 | 1.70 | 51 | 17 | 1 | - | 0.02 |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | 2.60 | 2.60 | 9 | 8 | 1 | - | 0.02 |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | 4.00 | 4.00 | 19 | 9 | - | - | 0.05 |
| 4B | 4.78 – 7.17 | B2 | B | B | 6.00 | 6.00 | 6 | 2 | - | - | - |
| 4C | 7.17 – 10.75 | B3 | B- | B- | - | - | 1 | - | - | - | - |
| 4D | 10.75 – 16.13 | | | | 13.44 | 13.44 | 3 | 1 | 1 | 1 | 0.79 |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | 16.38 | 25.12 | 63 | 14 | - | - | 0.19 |
| Default | | | | | | | | | | | |
| 5 | 100.00 | | | | 100.00 | 100.00 | 36 | 30 | 3 | 2 | - |
| **Corporates – of which: purchased receivables** | | | | | | | | | | | |
| Investment grade | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | - | - | - | - | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | - | - | - | - | - | - | - |
| 1E | 0.04 – 0.06 | | | | - | - | - | - | - | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | - | - | - | - | - | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | - | - | 1 | - | - | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | - | - | - | - | - | - | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | - | - | 3 | - | - | - | - |
| 2E | 0.28 – 0.42 | | | | 0.34 | 0.33 | 4 | 5 | - | - | - |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | 0.50 | 0.50 | 6 | 3 | - | - | - |
| Non-investment grade | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | 0.75 | 0.75 | 3 | 4 | - | - | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | 1.23 | 1.10 | 4 | 2 | - | - | - |
| 3D | 1.42 – 2.12 | | | | 1.70 | 1.70 | 3 | 2 | - | - | - |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | - | - | - | - | - | - | - |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | - | - | 1 | - | - | - | - |
| 4B | 4.78 – 7.17 | B2 | B | B | - | - | - | - | - | - | - |
| 4C | 7.17 – 10.75 | B3 | B- | B- | 8.96 | 8.96 | - | 1 | - | - | - |
| 4D | 10.75 – 16.13 | | | | - | - | - | - | - | - | - |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | - | - | - | - | - | - | - |
| Default | | | | | | | | | | | |
| 5 | 100.00 | | | | - | - | 1 | - | - | - | - |
| **Corporates – of which: other** | | | | | | | | | | | |
| Investment grade | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | 0.03 | 0.03 | 175 | 137 | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | 0.04 | 0.04 | 96 | 84 | - | - | - |

| a | b | c | | | d | e | f | | g | h | i |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Exposure class | PD range | External rating equivalent | | | Weighted average PD (%) | Arithmetic average PD by borrower (%) | Number of borrowers | | Defaulted borrowers in the year | | Average historical annual default rate (%) |
| | | Moody's | Standard & Poor's | Fitch | | | End of previous year | End of the year | | Of which: new borrowers | |
| 1E | 0.04 – 0.06 | | | | 0.05 | 0.05 | 225 | 161 | 1 | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | 0.07 | 0.07 | 185 | 124 | - | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | 0.10 | 0.10 | 329 | 291 | - | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | 0.18 | 0.15 | 482 | 416 | - | - | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | 0.26 | 0.23 | 528 | 506 | - | - | - |
| 2E | 0.28 – 0.42 | | | | 0.39 | 0.35 | 624 | 378 | - | - | - |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | 0.58 | 0.50 | 632 | 606 | 2 | - | - |
| Non-investment grade | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | 0.75 | 0.75 | 525 | 343 | 4 | 1 | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | 1.10 | 1.10 | 377 | 379 | 5 | 2 | - |
| 3D | 1.42 – 2.12 | | | | 1.70 | 1.70 | 271 | 276 | 8 | 2 | - |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | 2.60 | 2.60 | 133 | 154 | 8 | 3 | - |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | 4.00 | 4.00 | 58 | 57 | 8 | 2 | - |
| 4B | 4.78 – 7.17 | B2 | B | B | 6.00 | 6.00 | 24 | 32 | 9 | 1 | - |
| 4C | 7.17 – 10.75 | B3 | B- | B- | 9.00 | 9.00 | 20 | 35 | 1 | 1 | - |
| 4D | 10.75 – 16.13 | | | | 13.50 | 15.09 | 15 | 11 | - | - | - |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | 43.70 | 49.84 | 32 | 39 | 5 | 3 | - |
| Default | | | | | | | | | | | |
| 5 | 100.00 | | | | 100.00 | 100.00 | 270 | 260 | 48 | 20 | - |
| **Long-term equity investments** | | | | | | | | | | | |
| Investment grade | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | - | - | - | - | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | - | - | - | - | - | - | - |
| 1E | 0.04 – 0.06 | | | | - | - | - | - | - | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | - | - | - | - | - | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | 0.09 | 0.12 | 6 | 3 | - | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | - | - | - | - | - | - | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | - | - | - | - | - | - | - |
| 2E | 0.28 – 0.42 | | | | - | - | 5 | - | - | - | - |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | 0.63 | 0.63 | 1 | 2 | - | - | - |
| Non-investment grade | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | 0.75 | 0.75 | - | 1 | - | - | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | - | - | 1 | 1 | - | - | - |
| 3D | 1.42 – 2.12 | | | | - | - | - | - | - | - | - |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | - | - | - | - | - | - | - |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | 4.78 | 4.78 | 1 | 1 | - | - | - |
| 4B | 4.78 – 7.17 | B2 | B | B | 6.00 | 6.00 | 1 | 1 | - | - | - |
| 4C | 7.17 – 10.75 | B3 | B- | B- | - | - | - | - | - | - | - |
| 4D | 10.75 – 16.13 | | | | - | - | - | - | - | - | - |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | - | - | - | - | - | - | - |
| Default | | | | | | | | | | | |
| 5 | 100.00 | | | | 100.00 | 100.00 | 3 | 2 | - | - | - |

FIG. 57 – EU CR9 – FIRB APPROACH – BACKTESTING OF THE PROBABILITY OF DEFAULT (PD) PER EXPOSURE CLASS AS AT DECEMBER 31, 2019

€ million (unless indicated otherwise)

| a | b | | | c | d | e | | f | g | h | i |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Exposure class | PD range | External rating equivalent | | | Weighted average PD (%) | Arithmetic average PD by borrower (%) | Number of borrowers | | Defaulted borrowers in the year | | Average historical annual default rate (%) |
| | | Moody's | Standard & Poor's | Fitch | | | End of previous year | End of the year | | Of which: new borrowers | |
| **Central governments and central banks** | | | | | | | | | | | |
| Investment grade | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | 0.01 | 0.00 | 122 | 25 | - | - | 0.00 |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | 3 | - | - | - | 0.00 |
| 1C | 0.02 – 0.03 | | | | 0.03 | 0.00 | 4 | 1 | - | - | 0.00 |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | - | - | 5 | - | - | - | 0.00 |
| 1E | 0.04 – 0.06 | | | | - | - | 2 | - | - | - | 0.00 |
| 2A | 0.06 – 0.08 | A2 | A | A | - | - | 2 | - | - | - | 0.00 |
| 2B | 0.08 – 0.12 | A3 | A- | A- | - | - | 2 | - | - | - | 0.00 |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | 0.15 | 0.00 | - | 1 | - | - | 0.00 |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | - | - | 22 | - | - | - | 0.00 |
| 2E | 0.28 – 0.42 | | | | - | - | 4 | - | - | - | 0.00 |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | 0.50 | 0.01 | 12 | 1 | - | - | 0.00 |
| Non-investment grade | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | 0.75 | 0.01 | 14 | 1 | - | - | 0.00 |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | - | - | 35 | - | - | - | 0.00 |
| 3D | 1.42 – 2.12 | | | | - | - | 13 | - | - | - | 0.00 |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | - | - | 7 | - | - | - | 0.00 |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | - | - | 27 | - | - | - | 0.00 |
| 4B | 4.78 – 7.17 | B2 | B | B | 6.00 | 0.08 | 25 | 2 | - | - | 0.00 |
| 4C | 7.17 – 10.75 | B3 | B- | B- | - | - | 10 | - | - | - | 0.00 |
| 4D | 10.75 – 16.13 | | | | 9.00 | 0.09 | 33 | 1 | - | - | 0.00 |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | - | - | 3 | - | - | - | 0.00 |
| Default | | | | | | | | | | | |
| 5 | 100.00 | | | | - | - | - | - | - | - | 0.00 |
| **Institutions** | | | | | | | | | | | |
| Investment grade | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | 0.03 | 0.00 | - | 1 | - | - | 0.00 |
| 1C | 0.02 – 0.03 | | | | 0.03 | 0.00 | 819 | 183 | - | - | 0.00 |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | 0.04 | 0.00 | 228 | 52 | - | - | 0.00 |
| 1E | 0.04 – 0.06 | | | | 0.05 | 0.00 | 418 | 53 | - | - | 0.00 |
| 2A | 0.06 – 0.08 | A2 | A | A | 0.07 | 0.00 | 1,267 | 125 | - | - | 0.00 |
| 2B | 0.08 – 0.12 | A3 | A- | A- | 0.10 | 0.00 | 1,081 | 122 | - | - | 0.00 |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | 0.15 | 0.00 | 453 | 79 | - | - | 0.00 |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | 0.24 | 0.00 | 410 | 71 | - | - | 0.00 |
| 2E | 0.28 – 0.42 | | | | 0.35 | 0.01 | 186 | 50 | - | - | 0.00 |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | 0.49 | 0.01 | 278 | 72 | - | - | 0.00 |
| Non-investment grade | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | 0.80 | 0.01 | 267 | 38 | - | - | 0.00 |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | 0.98 | 0.02 | 248 | 42 | - | - | 0.00 |
| 3D | 1.42 – 2.12 | | | | 1.71 | 0.02 | 55 | 19 | - | - | 0.00 |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | 2.95 | 0.05 | 192 | 32 | - | - | 0.00 |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | 3.99 | 0.05 | 66 | 25 | - | - | 0.00 |
| 4B | 4.78 – 7.17 | B2 | B | B | 6.20 | 0.07 | 13 | 12 | - | - | 0.00 |
| 4C | 7.17 – 10.75 | B3 | B- | B- | 9.01 | 0.12 | 73 | 29 | - | - | 0.00 |
| 4D | 10.75 – 16.13 | | | | 13.71 | 0.14 | 62 | 18 | - | - | 0.00 |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | 29.81 | 0.28 | 188 | 31 | 1 | - | - |
| Default | | | | | | | | | | | |
| 5 | 100.00 | | | | 99.84 | 0.57 | 70 | 7 | 1 | - | - |
| **Corporates** | | | | | | | | | | | |
| Investment grade | | | | | | | | | | | |

€ million (unless indicated otherwise)

| a | b | c | | | d | e | f | | g | h | i |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Exposure class | PD range | External rating equivalent | | | Weighted average PD (%) | Arithmetic average PD by borrower (%) | Number of borrowers | | Defaulted borrowers in the year | | Average historical annual default rate (%) |
| | | Moody's | Standard & Poor's | Fitch | | | End of previous year | End of the year | | Of which: new borrowers | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | 1 | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | 0.03 | 0.00 | 981 | 189 | - | - | 0.03 |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | 0.04 | 0.00 | 389 | 269 | - | - | 0.04 |
| 1E | 0.04 – 0.06 | | | | 0.05 | 0.00 | 657 | 575 | 1 | 1 | 0.05 |
| 2A | 0.06 – 0.08 | A2 | A | A | 0.08 | 0.00 | 1,941 | 449 | - | - | 0.08 |
| 2B | 0.08 – 0.12 | A3 | A- | A- | 0.12 | 0.00 | 1,677 | 552 | - | - | 0.12 |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | 0.16 | 0.00 | 2,246 | 732 | - | - | 0.16 |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | 0.25 | 0.00 | 3,538 | 949 | - | - | 0.25 |
| 2E | 0.28 – 0.42 | | | | 0.40 | 0.01 | 4,106 | 1,135 | 3 | - | 0.40 |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | 2.26 | 0.01 | 3,987 | 1,102 | 3 | 2 | 2.26 |
| Non-investment grade | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | 0.89 | 0.02 | 4,076 | 995 | 5 | 3 | 0.02 |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | 1.74 | 0.03 | 2,830 | 752 | 6 | 2 | 0.01 |
| 3D | 1.42 – 2.12 | | | | 2.36 | 0.06 | 1,945 | 534 | 7 | 5 | 0.05 |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | 7.70 | 0.12 | 1,008 | 253 | 10 | 4 | 0.12 |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | 4.40 | 0.10 | 526 | 135 | 4 | 4 | 0.12 |
| 4B | 4.78 – 7.17 | B2 | B | B | 39.26 | 0.36 | 178 | 44 | 5 | 3 | 0.59 |
| 4C | 7.17 – 10.75 | B3 | B- | B- | 15.32 | 0.17 | 142 | 34 | 4 | - | 0.24 |
| 4D | 10.75 – 16.13 | | | | 48.57 | 0.30 | 58 | 23 | 1 | - | 1.00 |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | 17.26 | 0.29 | 1,647 | 104 | 2 | 2 | 0.26 |
| Default | | | | | | | | | | | |
| 5 | 100.00 | | | | 99.63 | 1.00 | 1,882 | 307 | 50 | 27 | 0.00 |
| **Corporates – of which: SMEs** | | | | | | | | | | | |
| Investment grade | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | 0.00 | 0.00 | - | - | - | - | 0.00 |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | 0.00 | 0.00 | - | - | - | - | 0.00 |
| 1C | 0.02 – 0.03 | | | | 0.00 | 0.00 | - | - | - | - | 0.00 |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | 0.04 | 0.00 | - | 54 | - | - | 0.00 |
| 1E | 0.04 – 0.06 | | | | 0.05 | 0.00 | 63 | 200 | - | - | 0.00 |
| 2A | 0.06 – 0.08 | A2 | A | A | 0.07 | 0.00 | 289 | 111 | - | - | 0.00 |
| 2B | 0.08 – 0.12 | A3 | A- | A- | 0.10 | 0.00 | 153 | 78 | - | - | 0.00 |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | 0.16 | 0.00 | 123 | 111 | - | - | 0.00 |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | 0.30 | 0.00 | 443 | 184 | - | - | 0.00 |
| 2E | 0.28 – 0.42 | | | | 0.41 | 0.01 | 618 | 202 | - | - | 0.00 |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | 0.62 | 0.01 | 579 | 226 | - | - | 0.00 |
| Non-investment grade | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | 0.94 | 0.01 | 852 | 261 | - | - | 0.01 |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | 1.12 | 0.02 | 668 | 249 | 1 | - | 0.00 |
| 3D | 1.42 – 2.12 | | | | 1.84 | 0.03 | 608 | 209 | - | - | 0.04 |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | 2.89 | 0.04 | 308 | 111 | - | - | 0.09 |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | 4.27 | 0.06 | 179 | 57 | - | - | 0.03 |
| 4B | 4.78 – 7.17 | B2 | B | B | 7.34 | 0.09 | 91 | 14 | 1 | - | 0.14 |
| 4C | 7.17 – 10.75 | B3 | B- | B- | 6.51 | 0.14 | 40 | 13 | - | - | 0.00 |
| 4D | 10.75 – 16.13 | | | | 3.99 | 0.14 | 24 | 5 | - | - | 0.00 |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | 29.63 | 0.28 | 1,481 | 9 | - | - | 0.26 |
| Default | | | | | | | | | | | |
| 5 | 100.00 | | | | 0.00 | 0.00 | 168 | - | 4 | - | 0.00 |
| **Corporates – of which: specialized lending** | | | | | | | | | | | |
| Investment grade | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | 0.00 | 0.00 | - | - | - | - | 0.00 |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | 0.00 | 0.00 | - | - | - | - | 0.00 |
| 1C | 0.02 – 0.03 | | | | 0.03 | 0.00 | 2 | 14 | - | - | 0.00 |

€ million (unless indicated otherwise)

| a | b | c | | | d | e | f | | g | h | i |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Exposure class | PD range | External rating equivalent | | | Weighted average PD (%) | Arithmetic average PD by borrower (%) | Number of borrowers | | Defaulted borrowers in the year | | Average historical annual default rate (%) |
| | | Moody's | Standard & Poor's | Fitch | | | End of previous year | End of the year | | Of which: new borrowers | |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | 0.05 | 0.00 | 52 | 119 | - | - | 0.00 |
| 1E | 0.04 – 0.06 | | | | 0.06 | 0.00 | 102 | 150 | - | - | 0.00 |
| 2A | 0.06 – 0.08 | A2 | A | A | 0.11 | 0.01 | 1,141 | 153 | - | - | 0.00 |
| 2B | 0.08 – 0.12 | A3 | A- | A- | 0.11 | 0.00 | 518 | 144 | - | - | 0.00 |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | 0.15 | 0.00 | 428 | 139 | - | - | 0.00 |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | 0.23 | 0.01 | 1,140 | 234 | - | - | 0.00 |
| 2E | 0.28 – 0.42 | | | | 0.38 | 0.01 | 1,022 | 305 | - | - | 0.00 |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | 0.50 | 0.01 | 953 | 238 | - | - | 0.00 |
| **Non-investment grade** | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | 0.80 | 0.02 | 1,008 | 206 | - | - | 0.00 |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | 1.77 | 0.02 | 664 | 122 | - | - | 0.00 |
| 3D | 1.42 – 2.12 | | | | 1.44 | 0.02 | 326 | 51 | - | - | 0.00 |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | 2.84 | 0.03 | 177 | 9 | - | - | 0.00 |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | 3.87 | 0.03 | 79 | 19 | - | - | 0.03 |
| 4B | 4.78 – 7.17 | B2 | B | B | 5.99 | 0.05 | 46 | 6 | - | - | 0.00 |
| 4C | 7.17 – 10.75 | B3 | B- | B- | 13.50 | 0.14 | 50 | 1 | 3 | - | 0.00 |
| 4D | 10.75 – 16.13 | | | | 79.06 | 0.39 | 3 | 3 | 1 | - | 0.77 |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | 30.00 | 0.31 | 122 | 63 | - | - | 0.00 |
| **Default** | | | | | | | | | | | |
| 5 | 100.00 | | | | 98.53 | 1.00 | 554 | 36 | 6 | 1 | 0.00 |
| **Corporates – of which: purchased receivables** | | | | | | | | | | | |
| **Investment grade** | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | 0.00 | 0.00 | - | - | - | - | 0.00 |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | 0.00 | 0.00 | - | - | - | - | 0.00 |
| 1C | 0.02 – 0.03 | | | | 0.00 | 0.00 | - | - | - | - | 0.00 |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | 0.00 | 0.00 | - | - | - | - | 0.00 |
| 1E | 0.04 – 0.06 | | | | 0.00 | 0.00 | - | - | - | - | 0.00 |
| 2A | 0.06 – 0.08 | A2 | A | A | 0.00 | 0.00 | - | - | - | - | 0.00 |
| 2B | 0.08 – 0.12 | A3 | A- | A- | 0.15 | 0.00 | 2 | 1 | - | - | 0.00 |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | - | 0.00 | 1 | - | - | - | 0.00 |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | 0.25 | 0.00 | 5 | 3 | - | - | 0.00 |
| 2E | 0.28 – 0.42 | | | | 0.35 | 0.00 | 3 | 4 | - | - | 0.00 |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | 0.56 | 0.01 | 19 | 6 | - | - | 0.00 |
| **Non-investment grade** | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | 0.61 | 0.01 | 4 | 3 | - | - | 0.00 |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | 1.21 | 0.01 | 7 | 4 | - | - | 0.00 |
| 3D | 1.42 – 2.12 | | | | 2.03 | 0.02 | 5 | 3 | - | - | 0.00 |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | - | - | 1 | - | - | - | 0.00 |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | 9.00 | 0.09 | 6 | 1 | - | - | 0.00 |
| 4B | 4.78 – 7.17 | B2 | B | B | 0.00 | 0.00 | - | - | - | - | 0.00 |
| 4C | 7.17 – 10.75 | B3 | B- | B- | 0.00 | 0.00 | 3 | - | - | - | 0.00 |
| 4D | 10.75 – 16.13 | | | | - | - | - | - | - | - | - |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | - | - | - | - | - | - | - |
| **Default** | | | | | | | | | | | |
| 5 | 100.00 | | | | 100.00 | 1.00 | - | 1 | - | - | 0.00 |
| **Corporates – of which: other** | | | | | | | | | | | |
| **Investment grade** | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | 0.00 | 0.00 | 1 | - | - | - | 0.00 |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | 0.03 | 0.00 | 979 | 175 | - | - | 0.00 |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | 0.04 | 0.00 | 337 | 96 | - | - | 0.00 |
| 1E | 0.04 – 0.06 | | | | 0.05 | 0.00 | 492 | 225 | 1 | 1 | 0.00 |
| 2A | 0.06 – 0.08 | A2 | A | A | 0.07 | 0.00 | 511 | 185 | - | - | 0.00 |

€ million (unless indicated otherwise)

| a | b | c | | | d | e | f | | g | h | i |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Exposure class | PD range | External rating equivalent | | | Weighted average PD (%) | Arithmetic average PD by borrower (%) | Number of borrowers | | Defaulted borrowers in the year | | Average historical annual default rate (%) |
| | | Moody's | Standard & Poor's | Fitch | | | End of previous year | End of the year | | Of which: new borrowers | |
| 2B | 0.08 – 0.12 | A3 | A- | A- | 0.12 | 0.00 | 1,004 | 329 | - | - | 0.00 |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | 0.16 | 0.00 | 1,694 | 482 | - | - | 0.00 |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | 0.26 | 0.00 | 1,950 | 528 | - | - | 0.00 |
| 2E | 0.28 – 0.42 | | | | 0.41 | 0.01 | 2,463 | 624 | 3 | - | 0.00 |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | 3.30 | 0.02 | 2,436 | 632 | 3 | 2 | 0.02 |
| **Non-investment grade** | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | 0.93 | 0.03 | 2,212 | 525 | 5 | 3 | 0.01 |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | 1.88 | 0.03 | 1,491 | 377 | 5 | 2 | 0.01 |
| 3D | 1.42 – 2.12 | | | | 2.68 | 0.08 | 1,006 | 271 | 7 | 5 | 0.01 |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | 8.61 | 0.20 | 522 | 133 | 10 | 4 | 0.04 |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | 4.48 | 0.16 | 262 | 58 | 4 | 4 | 0.06 |
| 4B | 4.78 – 7.17 | B2 | B | B | 46.19 | 0.60 | 41 | 24 | 4 | 3 | 0.45 |
| 4C | 7.17 – 10.75 | B3 | B- | B- | 20.87 | 0.19 | 49 | 20 | 1 | - | 0.24 |
| 4D | 10.75 – 16.13 | | | | 20.86 | 0.33 | 31 | 15 | - | - | 0.23 |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | 15.29 | 0.25 | 44 | 32 | 2 | 2 | 0.00 |
| **Default** | | | | | | | | | | | |
| 5 | 100.00 | | | | 99.89 | 1.00 | 1,160 | 270 | 40 | 26 | 0.00 |
| **Long-term equity investments** | | | | | | | | | | | |
| **Investment grade** | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | 1 | - | - | - | 0.00 |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | 0.00 |
| 1C | 0.02 – 0.03 | | | | - | - | 6 | - | - | - | 0.00 |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | - | - | 1 | - | - | - | 0.00 |
| 1E | 0.04 – 0.06 | | | | - | - | - | - | - | - | 0.00 |
| 2A | 0.06 – 0.08 | A2 | A | A | - | - | 3 | - | - | - | 0.00 |
| 2B | 0.08 – 0.12 | A3 | A- | A- | 0.09 | 0.09 | 1 | 6 | - | - | 0.00 |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | - | - | 4 | - | - | - | 0.00 |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | - | - | 9 | - | - | - | 0.00 |
| 2E | 0.28 – 0.42 | | | | 0.50 | 0.50 | 6 | 5 | - | - | 0.00 |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | 0.50 | 0.50 | 3 | 1 | - | - | 0.00 |
| **Non-investment grade** | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | - | - | - | - | - | - | 0.00 |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | 0.75 | 0.75 | 2 | 1 | - | - | 0.00 |
| 3D | 1.42 – 2.12 | | | | - | - | - | - | - | - | 0.00 |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | - | - | - | - | - | - | 0.00 |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | 4.00 | 4.00 | 1 | 1 | - | - | 0.00 |
| 4B | 4.78 – 7.17 | B2 | B | B | 6.00 | 6.00 | 1 | 1 | - | - | 0.00 |
| 4C | 7.17 – 10.75 | B3 | B- | B- | - | - | - | - | - | - | 0.00 |
| 4D | 10.75 – 16.13 | | | | - | - | - | - | - | - | 0.00 |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | - | - | - | - | - | - | 0.00 |
| **Default** | | | | | | | | | | | |
| 5 | 100.00 | | | | 100.00 | 100.00 | - | 3 | - | - | 0.00 |

FIG. 58 – EU CR9 – AIRB APPROACH – BACKTESTING OF THE PROBABILITY OF DEFAULT (PD) PER EXPOSURE CLASS AS AT DECEMBER 31, 2020

| a | b | c | | | d | e | f | | g | h | i |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Exposure class | PD range | External rating equivalent | | | Weighted average PD (%) | Arithmetic average PD by borrower (%) | Number of borrowers | | Defaulted borrowers in the year | | Average historical annual default rate (%) |
| | | Moody's | Standard & Poor's | Fitch | | | End of previous year | End of the year | | Of which: new borrowers | |
| **Central governments and central banks** | | | | | | | | | | | |
| Investment grade | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | - | - | - | - | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | - | - | - | - | - | - | - |
| 1E | 0.04 – 0.06 | | | | - | - | - | - | - | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | - | - | - | - | - | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | - | - | - | - | - | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | - | - | - | - | - | - | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | - | - | - | - | - | - | - |
| 2E | 0.28 – 0.42 | | | | - | - | - | - | - | - | - |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | - | - | - | - | - | - | - |
| Non-investment grade | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | - | - | - | - | - | - | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | - | - | - | - | - | - | - |
| 3D | 1.42 – 2.12 | | | | - | - | - | - | - | - | - |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | - | - | - | - | - | - | - |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | - | - | - | - | - | - | - |
| 4B | 4.78 – 7.17 | B2 | B | B | - | - | - | - | - | - | - |
| 4C | 7.17 – 10.75 | B3 | B- | B- | - | - | - | - | - | - | - |
| 4D | 10.75 – 16.13 | | | | - | - | - | - | - | - | - |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | - | - | - | - | - | - | - |
| Default | | | | | | | | | | | |
| 5 | 100.00 | | | | - | - | - | - | - | - | - |
| **Institutions** | | | | | | | | | | | |
| Investment grade | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | - | - | - | - | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | - | - | - | - | - | - | - |
| 1E | 0.04 – 0.06 | | | | - | - | - | - | - | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | - | - | - | - | - | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | - | - | - | - | - | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | - | - | - | - | - | - | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | - | - | - | - | - | - | - |
| 2E | 0.28 – 0.42 | | | | - | - | - | - | - | - | - |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | - | - | - | - | - | - | - |
| Non-investment grade | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | - | - | - | - | - | - | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | - | - | - | - | - | - | - |
| 3D | 1.42 – 2.12 | | | | - | - | - | - | - | - | - |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | - | - | - | - | - | - | - |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | - | - | - | - | - | - | - |
| 4B | 4.78 – 7.17 | B2 | B | B | - | - | - | - | - | - | - |
| 4C | 7.17 – 10.75 | B3 | B- | B- | - | - | - | - | - | - | - |
| 4D | 10.75 – 16.13 | | | | - | - | - | - | - | - | - |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | - | - | - | - | - | - | - |
| Default | | | | | | | | | | | |
| 5 | 100.00 | | | | - | - | - | - | - | - | - |

| a | b | | | c | d | e | | f | g | h | i |
|---|---|---|---|---|---|---|---|---|---|---|
| Exposure class | PD range | External rating equivalent | | | Weighted average PD (%) | Arithmetic average PD by borrower (%) | Number of borrowers | | Defaulted borrowers in the year | | Average historical annual default rate (%) |
| | | Moody's | Standard & Poor's | Fitch | | | End of previous year | End of the year | | Of which: new borrowers | |
| **Corporates** | | | | | | | | | | | |
| Investment grade | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | - | - | - | - | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | - | - | - | - | - | - | - |
| 1E | 0.04 – 0.06 | | | | - | - | - | - | - | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | - | - | - | - | - | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | - | - | - | - | - | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | - | - | 7 | - | - | - | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | 0.20 | 0.20 | 11 | 16 | - | - | - |
| 2E | 0.28 – 0.42 | | | | 0.35 | 0.35 | 69 | 13 | - | - | - |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | - | - | - | - | - | - | - |
| Non-investment grade | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | - | - | - | - | - | - | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | - | - | - | - | - | - | - |
| 3D | 1.42 – 2.12 | | | | 1.47 | 1.47 | 126 | 66 | - | - | - |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | - | - | - | - | - | - | - |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | - | - | - | - | - | - | - |
| 4B | 4.78 – 7.17 | B2 | B | B | 5.35 | 5.35 | 130 | 64 | 1 | - | 0.01 |
| 4C | 7.17 – 10.75 | B3 | B- | B- | 9.15 | 9.15 | 27 | 64 | 1 | - | 0.04 |
| 4D | 10.75 – 16.13 | | | | - | - | - | - | - | - | - |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | 31.52 | 31.52 | - | 11 | 23 | - | 1.77 |
| Default | | | | | | | | | | | |
| 5 | 100.00 | | | | 100.00 | 100.00 | - | 64 | - | - | - |
| **Corporates – of which: SMEs** | | | | | | | | | | | |
| Investment grade | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | - | - | - | - | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | - | - | - | - | - | - | - |
| 1E | 0.04 – 0.06 | | | | - | - | - | - | - | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | - | - | - | - | - | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | - | - | - | - | - | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | - | - | - | - | - | - | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | - | - | - | - | - | - | - |
| 2E | 0.28 – 0.42 | | | | - | - | - | - | - | - | - |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | - | - | - | - | - | - | - |
| Non-investment grade | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | - | - | - | - | - | - | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | - | - | - | - | - | - | - |
| 3D | 1.42 – 2.12 | | | | - | - | - | - | - | - | - |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | - | - | - | - | - | - | - |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | - | - | - | - | - | - | - |
| 4B | 4.78 – 7.17 | B2 | B | B | - | - | - | - | - | - | - |
| 4C | 7.17 – 10.75 | B3 | B- | B- | - | - | - | - | - | - | - |
| 4D | 10.75 – 16.13 | | | | - | - | - | - | - | - | - |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | - | - | - | - | - | - | - |
| Default | | | | | | | | | | | |
| 5 | 100.00 | | | | - | - | - | - | - | - | - |
| **Corporates – of which: specialized lending** | | | | | | | | | | | |
| Investment grade | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |

| a | b | | | c | d | e | | f | g | h | i |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Exposure class | PD range | External rating equivalent | | | Weighted average PD (%) | Arithmetic average PD by borrower (%) | Number of borrowers | | Defaulted borrowers in the year | | Average historical annual default rate (%) |
| | | Moody's | Standard & Poor's | Fitch | | | End of previous year | End of the year | | Of which: new borrowers | |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | - | - | - | - | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | - | - | - | - | - | - | - |
| 1E | 0.04 – 0.06 | | | | - | - | - | - | - | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | - | - | - | - | - | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | - | - | - | - | - | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | - | - | - | - | - | - | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | - | - | - | - | - | - | - |
| 2E | 0.28 – 0.42 | | | | - | - | - | - | - | - | - |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | - | - | - | - | - | - | - |
| **Non-investment grade** | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | - | - | - | - | - | - | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | - | - | - | - | - | - | - |
| 3D | 1.42 – 2.12 | | | | - | - | - | - | - | - | - |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | - | - | - | - | - | - | - |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | - | - | - | - | - | - | - |
| 4B | 4.78 – 7.17 | B2 | B | B | - | - | - | - | - | - | - |
| 4C | 7.17 – 10.75 | B3 | B- | B- | - | - | - | - | - | - | - |
| 4D | 10.75 – 16.13 | | | | - | - | - | - | - | - | - |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | - | - | - | - | - | - | - |
| **Default** | | | | | | | | | | | |
| 5 | 100.00 | | | | - | - | - | - | - | - | - |
| **Corporates – of which: purchased receivables** | | | | | | | | | | | |
| **Investment grade** | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | - | - | - | - | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | - | - | - | - | - | - | - |
| 1E | 0.04 – 0.06 | | | | - | - | - | - | - | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | - | - | - | - | - | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | - | - | - | - | - | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | - | - | - | - | - | - | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | - | - | - | - | - | - | - |
| 2E | 0.28 – 0.42 | | | | - | - | - | - | - | - | - |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | - | - | - | - | - | - | - |
| **Non-investment grade** | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | - | - | - | - | - | - | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | - | - | - | - | - | - | - |
| 3D | 1.42 – 2.12 | | | | - | - | - | - | - | - | - |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | - | - | - | - | - | - | - |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | - | - | - | - | - | - | - |
| 4B | 4.78 – 7.17 | B2 | B | B | - | - | - | - | - | - | - |
| 4C | 7.17 – 10.75 | B3 | B- | B- | - | - | - | - | - | - | - |
| 4D | 10.75 – 16.13 | | | | - | - | - | - | - | - | - |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | - | - | - | - | - | - | - |
| **Default** | | | | | | | | | | | |
| 5 | 100.00 | | | | - | - | - | - | - | - | - |
| **Corporates – of which: other** | | | | | | | | | | | |
| **Investment grade** | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | - | - | - | - | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | - | - | - | - | - | - | - |

| a | b | c | | | d | e | f | | g | h | i |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Exposure class | PD range | External rating equivalent | | | Weighted average PD (%) | Arithmetic average PD by borrower (%) | Number of borrowers | | Defaulted borrowers in the year | | Average historical annual default rate (%) |
| | | Moody's | Standard & Poor's | Fitch | | | End of previous year | End of the year | | Of which: new borrowers | |
| 1E | 0.04 – 0.06 | | | | - | - | - | - | - | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | - | - | - | - | - | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | - | - | - | - | - | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | - | - | 7 | - | - | - | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | 0.20 | 0.20 | 11 | 16 | - | - | - |
| 2E | 0.28 – 0.42 | | | | 0.35 | 0.35 | 69 | 13 | - | - | - |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | - | - | - | - | - | - | - |
| **Non-investment grade** | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | - | - | - | - | - | - | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | - | - | - | - | - | - | - |
| 3D | 1.42 – 2.12 | | | | 1.47 | 1.47 | 126 | 66 | - | - | - |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | - | - | - | - | - | - | - |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | - | - | - | - | - | - | - |
| 4B | 4.78 – 7.17 | B2 | B | B | 5.35 | 5.35 | 130 | 64 | 1 | - | 0.01 |
| 4C | 7.17 – 10.75 | B3 | B- | B- | 9.15 | 9.15 | 27 | 64 | 1 | - | 0.04 |
| 4D | 10.75 – 16.13 | | | | - | - | - | - | - | - | - |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | 31.52 | 31.52 | 13 | 11 | 23 | - | 1.77 |
| **Default** | | | | | | | | | | | |
| 5 | 100.00 | | | | 100.00 | 100.00 | 61 | 64 | - | - | - |
| **Retail business** | | | | | | | | | | | |
| **Investment grade** | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | - | - | - | - | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | - | - | - | - | - | - | - |
| 1E | 0.04 – 0.06 | | | | - | - | - | - | - | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | 0.07 | 0.07 | 109,007 | 25,220 | 8 | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | 0.11 | 0.11 | 64,736 | 44,666 | 7 | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | 0.14 | 0.14 | 78,664 | 120,233 | 43 | 2 | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | 0.26 | 0.26 | 203,181 | 257,308 | 20 | 1 | - |
| 2E | 0.28 – 0.42 | | | | 0.34 | 0.34 | 71,231 | 228,214 | 8 | 1 | - |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | 0.54 | 0.54 | 458,106 | 260,438 | 472 | - | - |
| **Non-investment grade** | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | 0.75 | 0.75 | 238,171 | 305,694 | 941 | - | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | 1.10 | 1.10 | 176,207 | 217,430 | 1,206 | - | 0 |
| 3D | 1.42 – 2.12 | | | | 1.70 | 1.70 | 91,821 | 140,178 | 9 | - | 0 |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | 2.60 | 2.60 | 286,864 | 92,800 | 1,319 | - | 0 |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | 4.00 | 4.00 | 25,208 | 52,517 | 990 | - | 0 |
| 4B | 4.78 – 7.17 | B2 | B | B | 6.00 | 6.00 | 15,615 | 31,264 | 1,418 | - | 0 |
| 4C | 7.17 – 10.75 | B3 | B- | B- | 9.00 | 9.00 | 43,635 | 14,607 | 1,010 | - | 0 |
| 4D | 10.75 – 16.13 | | | | 13.50 | 13.50 | 16,381 | 9,150 | 863 | - | 0 |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | 37.08 | 37.08 | 24,877 | 51,003 | 3,964 | - | 0 |
| **Default** | | | | | | | | | | | |
| 5 | 100.00 | | | | 100.00 | 100.00 | 50,878 | 53,372 | 1,797 | 833 | - |
| **Retail business – SMEs, secured by mortgages on immovable property** | | | | | | | | | | | |
| **Investment grade** | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | - | - | - | - | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | - | - | - | - | - | - | - |
| 1E | 0.04 – 0.06 | | | | - | - | - | - | - | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | - | - | - | - | - | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | - | - | - | - | - | - | - |

| a | b | c | | | d | e | f | | g | h | i |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Exposure class | PD range | External rating equivalent | | | Weighted average PD (%) | Arithmetic average PD by borrower (%) | Number of borrowers | | Defaulted borrowers in the year | | Average historical annual default rate (%) |
| | | Moody's | Standard & Poor's | Fitch | | | End of previous year | End of the year | | Of which: new borrowers | |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | - | - | - | - | - | - | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | 0.28 | 0.28 | - | 1 | - | - | - |
| 2E | 0.28 – 0.42 | | | | - | - | - | - | - | - | - |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | 0.63 | 0.63 | - | 1 | - | - | - |
| Non-investment grade | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | - | - | - | - | - | - | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | - | - | - | - | - | - | - |
| 3D | 1.42 – 2.12 | | | | - | - | - | - | - | - | - |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | - | - | - | - | - | - | - |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | - | - | - | - | - | - | - |
| 4B | 4.78 – 7.17 | B2 | B | B | - | - | - | - | - | - | - |
| 4C | 7.17 – 10.75 | B3 | B- | B- | - | - | - | - | - | - | - |
| 4D | 10.75 – 16.13 | | | | - | - | - | - | - | - | - |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | - | - | - | - | - | - | - |
| Default | | | | | | | | | | | |
| 5 | 100.00 | | | | - | - | - | - | - | - | - |
| **Retail business – non-SMEs, secured by mortgages on immovable property** | | | | | | | | | | | |
| Investment grade | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | - | - | - | - | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | - | - | - | - | - | - | - |
| 1E | 0.04 – 0.06 | | | | - | - | - | - | - | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | 0.07 | 0.07 | 71,457 | 25,220 | 8 | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | 0.10 | 0.10 | 26,927 | 29,663 | 7 | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | 0.15 | 0.15 | 39,680 | 102,194 | 12 | - | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | 0.23 | 0.23 | 121,397 | 206,233 | 19 | - | - |
| 2E | 0.28 – 0.42 | | | | 0.35 | 0.35 | 455 | 205,696 | 8 | 1 | - |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | 0.50 | 0.50 | 12,480 | 155,256 | 11 | - | - |
| Non-investment grade | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | 0.75 | 0.75 | 167,281 | 9,480 | 10 | - | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | 1.10 | 1.10 | 144,402 | 2,104 | 14 | - | 0 |
| 3D | 1.42 – 2.12 | | | | 1.70 | 1.70 | 71,614 | 1,099 | 9 | - | 0 |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | 2.60 | 2.60 | 27,129 | 432 | 7 | - | 0 |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | 4.00 | 4.00 | 16,587 | 319 | 12 | - | 0 |
| 4B | 4.78 – 7.17 | B2 | B | B | 6.00 | 6.00 | 7,716 | 238 | 9 | - | 0 |
| 4C | 7.17 – 10.75 | B3 | B- | B- | 9.00 | 9.00 | 6,397 | 158 | 11 | - | 0 |
| 4D | 10.75 – 16.13 | | | | 13.50 | 13.50 | 3,445 | 182 | 15 | - | 0 |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | 30.00 | 30.00 | 12,160 | 15,490 | 81 | - | 0 |
| Default | | | | | | | | | | | |
| 5 | 100.00 | | | | 100.00 | 100.00 | 8,795 | 9,495 | 13 | 3 | - |
| **Retail business – qualified revolving** | | | | | | | | | | | |
| Investment grade | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | - | - | - | - | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | - | - | - | - | - | - | - |
| 1E | 0.04 – 0.06 | | | | - | - | - | - | - | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | - | - | - | - | - | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | - | - | - | - | - | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | - | - | - | - | - | - | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | - | - | - | - | - | - | - |
| 2E | 0.28 – 0.42 | | | | - | - | - | - | - | - | - |

| a | b | c | | | d | e | f | | g | h | i |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Exposure class | PD range | External rating equivalent | | | Weighted average PD (%) | Arithmetic average PD by borrower (%) | Number of borrowers | | Defaulted borrowers in the year | | Average historical annual default rate (%) |
| | | Moody's | Standard & Poor's | Fitch | | | End of previous year | End of the year | | Of which: new borrowers | |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | - | - | - | - | - | - | - |
| Non-investment grade | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | - | - | - | - | - | - | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | - | - | - | - | - | - | - |
| 3D | 1.42 – 2.12 | | | | - | - | - | - | - | - | - |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | - | - | - | - | - | - | - |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | - | - | - | - | - | - | - |
| 4B | 4.78 – 7.17 | B2 | B | B | - | - | - | - | - | - | - |
| 4C | 7.17 – 10.75 | B3 | B- | B- | - | - | - | - | - | - | - |
| 4D | 10.75 – 16.13 | | | | - | - | - | - | - | - | - |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | - | - | - | - | - | - | - |
| Default | | | | | | | | | | | |
| 5 | 100.00 | | | | - | - | - | - | - | - | - |
| **Retail business – other SMEs** | | | | | | | | | | | |
| Investment grade | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | - | - | - | - | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | - | - | - | - | - | - | - |
| 1E | 0.04 – 0.06 | | | | - | - | - | - | - | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | - | - | - | - | - | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | 0.12 | 0.12 | - | 24 | - | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | 0.12 | 0.12 | 9 | 8 | - | - | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | 0.28 | 0.28 | 957 | 551 | 1 | 1 | - |
| 2E | 0.28 – 0.42 | | | | 0.33 | 0.33 | - | 891 | - | - | - |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | - | - | - | - | - | - | - |
| Non-investment grade | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | - | - | - | - | - | - | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | - | - | - | - | - | - | - |
| 3D | 1.42 – 2.12 | | | | - | - | - | - | - | - | - |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | - | - | - | - | - | - | - |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | - | - | - | - | - | - | - |
| 4B | 4.78 – 7.17 | B2 | B | B | - | - | - | - | - | - | - |
| 4C | 7.17 – 10.75 | B3 | B- | B- | - | - | - | - | - | - | - |
| 4D | 10.75 – 16.13 | | | | - | - | - | - | - | - | - |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | - | - | 492 | - | - | - | - |
| Default | | | | | | | | | | | |
| 5 | 100.00 | | | | 100.00 | 100.00 | 2 | 3 | 4 | 2 | 0 |
| **Retail business – other non-SMEs** | | | | | | | | | | | |
| Investment grade | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | | | | | | | |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | | | | | | | |
| 1C | 0.02 – 0.03 | | | | | | | | | | |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | | | | | | | |
| 1E | 0.04 – 0.06 | | | | | | | | | | |
| 2A | 0.06 – 0.08 | A2 | A | A | | | 37,550 | | | | |
| 2B | 0.08 – 0.12 | A3 | A- | A- | 0.12 | 0.12 | 37,809 | 14,979 | | | 0.00 |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | 0.15 | 0.15 | 38,975 | 18,031 | 31 | 2 | 0.00 |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | 0.23 | 0.23 | 80,827 | 50,523 | | | 0.00 |
| 2E | 0.28 – 0.42 | | | | 0.35 | 0.35 | 70,776 | 21,627 | | | 0.00 |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | 0.50 | 0.50 | 445,626 | 105,181 | 461 | | 0.00 |
| Non-investment grade | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | 0.75 | 0.75 | 70,890 | 296,214 | 931 | | 0.00 |

| a | b | c | | | d | e | f | | g | h | i |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Exposure class | PD range | External rating equivalent | | | Weighted average PD (%) | Arithmetic average PD by borrower (%) | Number of borrowers | | Defaulted borrowers in the year | | Average historical annual default rate (%) |
| | | Moody's | Standard & Poor's | Fitch | | | End of previous year | End of the year | | Of which: new borrowers | |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | 1.10 | 1.10 | 31,805 | 215,326 | 1,192 | | 0.00 |
| 3D | 1.42 – 2.12 | | | | 1.70 | 1.70 | 20,207 | 139,079 | | | 0.00 |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | 2.60 | 2.60 | 259,735 | 92,368 | 1,312 | | 0.00 |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | 4.00 | 4.00 | 8,621 | 52,198 | 978 | | 0.00 |
| 4B | 4.78 – 7.17 | B2 | B | B | 6.00 | 6.00 | 7,899 | 31,026 | 1,409 | | 0.00 |
| 4C | 7.17 – 10.75 | B3 | B- | B- | 9.00 | 9.00 | 37,238 | 14,449 | 999 | | 0.01 |
| 4D | 10.75 – 16.13 | | | | 13.50 | 13.50 | 12,936 | 8,968 | 848 | | 0.01 |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | 44.16 | 44.16 | 12,225 | 35,513 | 3,883 | | 0.07 |
| Default | | | | | | | | | | | |
| 5 | 100.00 | | | | 100.00 | 100.00 | 42,081 | 43,874 | 1,780 | 828.00 | 0.00 |

FIG. 59 – EU CR9 – AIRB APPROACH – BACKTESTING OF THE PROBABILITY OF DEFAULT (PD) PER EXPOSURE CLASS AS AT DECEMBER 31, 2019

| a | b | c | | | d | e | f | | g | h | i |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Exposure class | PD range | External rating equivalent | | | Weighted average PD (%) | Arithmetic average PD by borrower (%) | Number of borrowers | | Defaulted borrowers in the year | | Average historical annual default rate (%) |
| | | Moody's | Standard & Poor's | Fitch | | | End of previous year | End of the year | | Of which: new borrowers | |
| **Central governments and central banks** | | | | | | | | | | | |
| Investment grade | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | - | - | - | - | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | - | - | - | - | - | - | - |
| 1E | 0.04 – 0.06 | | | | - | - | - | - | - | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | - | - | - | - | - | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | - | - | - | - | - | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | - | - | - | - | - | - | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | - | - | - | - | - | - | - |
| 2E | 0.28 – 0.42 | | | | - | - | - | - | - | - | - |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | - | - | - | - | - | - | - |
| Non-investment grade | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | - | - | - | - | - | - | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | - | - | - | - | - | - | - |
| 3D | 1.42 – 2.12 | | | | - | - | - | - | - | - | - |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | - | - | - | - | - | - | - |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | - | - | - | - | - | - | - |
| 4B | 4.78 – 7.17 | B2 | B | B | - | - | - | - | - | - | - |
| 4C | 7.17 – 10.75 | B3 | B- | B- | - | - | - | - | - | - | - |
| 4D | 10.75 – 16.13 | | | | - | - | - | - | - | - | - |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | - | - | - | - | - | - | - |
| Default | | | | | | | | | | | |
| 5 | 100.00 | | | | - | - | - | - | - | - | - |

| a | b | | | c | d | e | | f | g | h | i |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Exposure class | PD range | External rating equivalent | | | Weighted average PD (%) | Arithmetic average PD by borrower (%) | Number of borrowers | | Defaulted borrowers in the year | | Average historical annual default rate (%) |
| | | Moody's | Standard & Poor's | Fitch | | | End of previous year | End of the year | | Of which: new borrowers | |
| **Institutions** | | | | | | | | | | | |
| Investment grade | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | - | - | - | - | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | - | - | - | - | - | - | - |
| 1E | 0.04 – 0.06 | | | | - | - | - | - | - | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | - | - | - | - | - | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | - | - | - | - | - | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | - | - | - | - | - | - | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | - | - | - | - | - | - | - |
| 2E | 0.28 – 0.42 | | | | - | - | - | - | - | - | - |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | - | - | - | - | - | - | - |
| Non-investment grade | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | - | - | - | - | - | - | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | - | - | - | - | - | - | - |
| 3D | 1.42 – 2.12 | | | | - | - | - | - | - | - | - |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | - | - | - | - | - | - | - |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | - | - | - | - | - | - | - |
| 4B | 4.78 – 7.17 | B2 | B | B | - | - | - | - | - | - | - |
| 4C | 7.17 – 10.75 | B3 | B- | B- | - | - | - | - | - | - | - |
| 4D | 10.75 – 16.13 | | | | - | - | - | - | - | - | - |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | - | - | - | - | - | - | - |
| Default | | | | | | | | | | | |
| 5 | 100.00 | | | | - | - | - | - | - | - | - |
| **Corporates** | | | | | | | | | | | |
| Investment grade | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | - | - | - | - | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | - | - | - | - | - | - | - |
| 1E | 0.04 – 0.06 | | | | - | - | - | - | - | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | - | - | - | - | - | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | - | - | - | - | - | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | 0.15 | - | - | 7 | - | - | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | 0.20 | - | - | 11 | - | - | - |
| 2E | 0.28 – 0.42 | | | | 0.35 | - | 5 | 69 | - | - | - |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | - | - | 2 | - | - | - | - |
| Non-investment grade | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | - | - | 168 | - | - | - | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | - | - | - | - | - | - | 0.01 |
| 3D | 1.42 – 2.12 | | | | 1.47 | - | - | 126 | 1 | - | 0.01 |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | - | - | 153 | - | - | - | - |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | - | - | - | - | - | - | - |
| 4B | 4.78 – 7.17 | B2 | B | B | 5.35 | - | - | 130 | 1 | - | 0.01 |
| 4C | 7.17 – 10.75 | B3 | B- | B- | 9.15 | - | 173 | 27 | 2 | - | 0.02 |
| 4D | 10.75 – 16.13 | | | | - | - | 5 | - | - | - | - |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | 31.52 | - | 86 | - | - | - | 0.19 |
| Default | | | | | | | | | | | |
| 5 | 100.00 | | | | 100.00 | - | 149 | - | - | - | 0.00 |
| **Corporates – of which: SMEs** | | | | | | | | | | | |
| Investment grade | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |

| a | b | | | c | d | e | | f | g | h | i |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Exposure class** | **PD range** | **External rating equivalent** | | | **Weighted average PD (%)** | **Arithmetic average PD by borrower (%)** | **Number of borrowers** | | **Defaulted borrowers in the year** | | **Average historical annual default rate (%)** |
| | | **Moody's** | **Standard & Poor's** | **Fitch** | | | **End of previous year** | **End of the year** | | **Of which: new borrowers** | |
| 1C | 0.02 – 0.03 | | | | - | - | - | - | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | - | - | - | - | - | - | - |
| 1E | 0.04 – 0.06 | | | | - | - | - | - | - | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | - | - | - | - | - | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | - | - | - | - | - | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | - | - | - | - | - | - | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | - | - | - | - | - | - | - |
| 2E | 0.28 – 0.42 | | | | - | - | - | - | - | - | - |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | - | - | - | - | - | - | - |
| **Non-investment grade** | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | - | - | - | - | - | - | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | - | - | - | - | - | - | - |
| 3D | 1.42 – 2.12 | | | | - | - | - | - | - | - | - |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | - | - | - | - | - | - | - |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | - | - | - | - | - | - | - |
| 4B | 4.78 – 7.17 | B2 | B | B | - | - | - | - | - | - | - |
| 4C | 7.17 – 10.75 | B3 | B- | B- | - | - | - | - | - | - | - |
| 4D | 10.75 – 16.13 | | | | - | - | - | - | - | - | - |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | - | - | - | - | - | - | - |
| **Default** | | | | | | | | | | | |
| 5 | 100.00 | | | | - | - | - | - | - | - | - |
| **Corporates – of which: specialized lending** | | | | | | | | | | | |
| **Investment grade** | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | - | - | - | - | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | - | - | - | - | - | - | - |
| 1E | 0.04 – 0.06 | | | | - | - | - | - | - | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | - | - | - | - | - | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | - | - | - | - | - | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | - | - | - | - | - | - | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | - | - | - | - | - | - | - |
| 2E | 0.28 – 0.42 | | | | - | - | - | - | - | - | - |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | - | - | - | - | - | - | - |
| **Non-investment grade** | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | - | - | - | - | - | - | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | - | - | - | - | - | - | - |
| 3D | 1.42 – 2.12 | | | | - | - | - | - | - | - | - |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | - | - | - | - | - | - | - |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | - | - | - | - | - | - | - |
| 4B | 4.78 – 7.17 | B2 | B | B | - | - | - | - | - | - | - |
| 4C | 7.17 – 10.75 | B3 | B- | B- | - | - | - | - | - | - | - |
| 4D | 10.75 – 16.13 | | | | - | - | - | - | - | - | - |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | - | - | - | - | - | - | - |
| **Default** | | | | | | | | | | | |
| 5 | 100.00 | | | | - | - | - | - | - | - | - |
| **Corporates – of which: purchased receivables** | | | | | | | | | | | |
| **Investment grade** | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | - | - | - | - | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | - | - | - | - | - | - | - |
| 1E | 0.04 – 0.06 | | | | - | - | - | - | - | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | - | - | - | - | - | - | - |

| a | b | | | c | d | e | | f | g | h | i |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Exposure class | PD range | External rating equivalent | | | Weighted average PD (%) | Arithmetic average PD by borrower (%) | Number of borrowers | | Defaulted borrowers in the year | | Average historical annual default rate (%) |
| | | Moody's | Standard & Poor's | Fitch | | | End of previous year | End of the year | | Of which: new borrowers | |
| 2B | 0.08 – 0.12 | A3 | A- | A- | - | - | - | - | - | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | - | - | - | - | - | - | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | - | - | - | - | - | - | - |
| 2E | 0.28 – 0.42 | | | | - | - | - | - | - | - | - |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | - | - | - | - | - | - | - |
| Non-investment grade | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | - | - | - | - | - | - | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | - | - | - | - | - | - | - |
| 3D | 1.42 – 2.12 | | | | - | - | - | - | - | - | - |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | - | - | - | - | - | - | - |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | - | - | - | - | - | - | - |
| 4B | 4.78 – 7.17 | B2 | B | B | - | - | - | - | - | - | - |
| 4C | 7.17 – 10.75 | B3 | B- | B- | - | - | - | - | - | - | - |
| 4D | 10.75 – 16.13 | | | | - | - | - | - | - | - | - |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | - | - | - | - | - | - | - |
| Default | | | | | | | | | | | |
| 5 | 100.00 | | | | - | - | - | - | - | - | - |
| **Corporates – of which: other** | | | | | | | | | | | |
| Investment grade | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | - | - | - | - | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | - | - | - | - | - | - | - |
| 1E | 0.04 – 0.06 | | | | - | - | - | - | - | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | - | - | - | - | - | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | - | - | - | - | - | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | 0.15 | - | - | 7 | - | - | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | 0.20 | - | - | 11 | - | - | - |
| 2E | 0.28 – 0.42 | | | | 0.35 | - | 5 | 69 | - | - | - |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | - | - | 2 | - | - | - | - |
| Non-investment grade | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | - | - | 168 | - | - | - | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | - | - | - | - | - | - | 0.01 |
| 3D | 1.42 – 2.12 | | | | 1.47 | - | - | 126 | 1 | - | 0.01 |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | - | - | 153 | - | - | - | - |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | - | - | - | - | - | - | - |
| 4B | 4.78 – 7.17 | B2 | B | B | 5.35 | - | - | 130 | 1 | - | 0.01 |
| 4C | 7.17 – 10.75 | B3 | B- | B- | 9.15 | - | 173 | 27 | 2 | - | 0.02 |
| 4D | 10.75 – 16.13 | | | | - | - | 5 | - | - | - | - |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | 31.52 | - | 86 | 13 | 10 | - | 0.19 |
| Default | | | | | | | | | | | |
| 5 | 100.00 | | | | 100.00 | - | 149 | 61 | - | - | 0.00 |
| **Retail business** | | | | | | | | | | | |
| Investment grade | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | - | - | - | - | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | - | - | - | - | - | - | - |
| 1E | 0.04 – 0.06 | | | | - | - | - | - | - | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | - | - | - | - | - | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | - | - | - | - | - | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | - | - | - | - | - | - | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | - | - | - | - | - | - | - |
| 2E | 0.28 – 0.42 | | | | - | - | - | - | - | - | - |

| a | b | c | | | d | e | f | | g | h | i |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Exposure class | PD range | External rating equivalent | | | Weighted average PD (%) | Arithmetic average PD by borrower (%) | Number of borrowers | | Defaulted borrowers in the year | | Average historical annual default rate (%) |
| | | Moody's | Standard & Poor's | Fitch | | | End of previous year | End of the year | | Of which: new borrowers | |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | - | - | - | - | - | - | - |
| Non-investment grade | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | - | - | - | - | - | - | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | - | - | - | - | - | - | - |
| 3D | 1.42 – 2.12 | | | | - | - | - | - | - | - | - |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | - | - | - | - | - | - | - |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | - | - | - | - | - | - | - |
| 4B | 4.78 – 7.17 | B2 | B | B | - | - | - | - | - | - | - |
| 4C | 7.17 – 10.75 | B3 | B- | B- | - | - | - | - | - | - | - |
| 4D | 10.75 – 16.13 | | | | - | - | - | - | - | - | - |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | - | - | - | - | - | - | - |
| Default | | | | | | | | | | | |
| 5 | 100.00 | | | | - | - | - | - | - | - | - |
| **Retail business – SMEs, secured by mortgages on immovable property** | | | | | | | | | | | |
| Investment grade | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | - | - | - | - | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | - | - | - | - | - | - | - |
| 1E | 0.04 – 0.06 | | | | - | - | - | - | - | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | 0.07 | 0.00 | 97,999 | 71,457 | - | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | 0.10 | 0.00 | 36,929 | 26,927 | - | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | 0.16 | 0.00 | 54,418 | 39,680 | 7 | - | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | 0.25 | 0.00 | 166,487 | 121,397 | 5 | - | - |
| 2E | 0.28 – 0.42 | | | | 0.36 | 0.00 | 624 | 455 | 3 | - | - |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | 0.54 | 0.01 | 17,116 | 12,480 | 4 | - | - |
| Non-investment grade | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | 0.88 | 0.01 | 229,414 | 167,281 | 13 | - | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | 1.23 | 0.02 | 198,037 | 144,402 | 3 | - | - |
| 3D | 1.42 – 2.12 | | | | 1.91 | 0.02 | 98,213 | 71,614 | 3 | - | - |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | 3.43 | 0.05 | 37,206 | 27,129 | 5 | - | - |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | 4.85 | 0.07 | 22,748 | 16,587 | 9 | - | - |
| 4B | 4.78 – 7.17 | B2 | B | B | 6.98 | 0.09 | 10,582 | 7,716 | 5 | - | - |
| 4C | 7.17 – 10.75 | B3 | B- | B- | 9.89 | 0.11 | 8,773 | 6,397 | 5 | - | - |
| 4D | 10.75 – 16.13 | | | | 13.47 | 0.14 | 4,724 | 3,445 | 4 | - | - |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | 30.04 | 0.31 | 16,676 | 12,160 | 50 | - | - |
| Default | | | | | | | | | | | |
| 5 | 100.00 | | | | 92.30 | 0.90 | 15,454 | 8,795 | 87 | 2 | |
| **Retail business – non-SMEs, secured by mortgages on immovable property** | | | | | | | | | | | |
| Investment grade | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | - | - | - | - | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | - | - | - | - | - | - | - |
| 1E | 0.04 – 0.06 | | | | - | - | - | - | - | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | - | - | - | - | - | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | - | - | - | - | - | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | - | - | - | - | - | - | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | - | - | - | - | - | - | - |
| 2E | 0.28 – 0.42 | | | | - | - | - | - | - | - | - |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | - | - | - | - | - | - | - |
| Non-investment grade | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | - | - | - | - | - | - | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | - | - | - | - | - | - | - |

| a | b | | | c | d | e | | f | g | h | i |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Exposure class | PD range | External rating equivalent | | | Weighted average PD (%) | Arithmetic average PD by borrower (%) | Number of borrowers | | Defaulted borrowers in the year | | Average historical annual default rate (%) |
| | | Moody's | Standard & Poor's | Fitch | | | End of previous year | End of the year | | Of which: new borrowers | |
| 3D | 1.42 – 2.12 | | | | - | - | - | - | - | - | - |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | - | - | - | - | - | - | - |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | - | - | - | - | - | - | - |
| 4B | 4.78 – 7.17 | B2 | B | B | - | - | - | - | - | - | - |
| 4C | 7.17 – 10.75 | B3 | B- | B- | - | - | - | - | - | - | - |
| 4D | 10.75 – 16.13 | | | | - | - | - | - | - | - | - |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | - | - | - | - | - | - | - |
| **Default** | | | | | | | | | | | |
| 5 | 100.00 | | | | - | - | - | - | - | - | - |
| **Retail business – qualified revolving** | | | | | | | | | | | |
| **Investment grade** | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | - | - | - | - | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | - | - | - | - | - | - | - |
| 1E | 0.04 – 0.06 | | | | - | - | - | - | - | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | - | - | - | - | - | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | - | - | - | - | - | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | 0.14 | 0.00 | 2 | 9 | - | - | 0.00 |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | 0.23 | 0.00 | - | 957 | - | - | - |
| 2E | 0.28 – 0.42 | | | | - | - | - | - | - | - | - |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | - | - | - | - | - | - | - |
| **Non-investment grade** | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | - | - | - | - | - | - | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | - | - | - | - | - | - | - |
| 3D | 1.42 – 2.12 | | | | - | - | - | - | - | - | - |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | - | - | - | - | - | - | - |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | - | - | - | - | - | - | - |
| 4B | 4.78 – 7.17 | B2 | B | B | - | - | - | - | - | - | - |
| 4C | 7.17 – 10.75 | B3 | B- | B- | - | - | - | - | - | - | - |
| 4D | 10.75 – 16.13 | | | | - | - | - | - | - | - | - |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | 1.38 | 0.01 | | 492 | - | - | - |
| **Default** | | | | | | | | | | | |
| 5 | 100.00 | | | | - | 1.00 | - | 2 | 2 | 2 | - |
| **Retail business – other SMEs** | | | | | | | | | | | |
| **Investment grade** | | | | | | | | | | | |
| 1A | 0.00 – 0.02 | Aaa-Aa2 | AAA-AA | AAA-AA | - | - | - | - | - | - | - |
| 1B | 0.02 – 0.02 | Aa3 | AA- | AA- | - | - | - | - | - | - | - |
| 1C | 0.02 – 0.03 | | | | - | - | | - | - | - | - |
| 1D | 0.03 – 0.04 | A1 | A+ | A+ | - | - | - | - | - | - | - |
| 1E | 0.04 – 0.06 | | | | - | - | - | - | - | - | - |
| 2A | 0.06 – 0.08 | A2 | A | A | 0.00 | 0.00 | 40,740 | 37,550 | - | - | - |
| 2B | 0.08 – 0.12 | A3 | A- | A- | 0.00 | 0.00 | 41,021 | 37,809 | - | - | - |
| 2C | 0.12 – 0.19 | Baa1 | BBB+ | BBB+ | 0.13 | 0.00 | 42,286 | 38,975 | 1 | - | - |
| 2D | 0.19 – 0.28 | Baa2 | BBB | BBB | 1.27 | 0.00 | 87,692 | 80,827 | - | - | - |
| 2E | 0.28 – 0.42 | | | | 0.00 | 0.00 | 76,788 | 70,776 | - | - | - |
| 3A | 0.42 – 0.63 | Baa3 | BBB- | BBB- | 1.55 | 0.00 | 483,478 | 445,626 | - | - | - |
| **Non-investment grade** | | | | | | | | | | | |
| 3B | 0.63 – 0.94 | Ba1 | BB+ | BB+ | 0.74 | 0.00 | 76,911 | 70,890 | - | - | - |
| 3C | 0.94 – 1.42 | Ba2 | BB | BB | 2.24 | 0.00 | 34,507 | 31,805 | - | - | - |
| 3D | 1.42 – 2.12 | | | | 3.75 | 0.00 | 21,923 | 20,207 | - | - | - |
| 3E | 2.12 – 3.19 | Ba3 | BB- | BB- | 3.84 | 0.00 | 281,797 | 259,735 | - | - | - |
| 4A | 3.19 – 4.78 | B1 | B+ | B+ | 6.22 | 0.00 | 9,353 | 8,621 | - | - | - |
| 4B | 4.78 – 7.17 | B2 | B | B | 8.27 | 0.00 | 8,570 | 7,899 | - | - | - |

| a | b | | c | | d | e | | f | g | h | i |
|---|---|---|---|---|---|---|---|---|---|---|
| Exposure class | PD range | External rating equivalent | | | Weighted average PD (%) | Arithmetic average PD by borrower (%) | Number of borrowers | | Defaulted borrowers in the year | | Average historical annual default rate (%) |
| | | Moody's | Standard & Poor's | Fitch | | | End of previous year | End of the year | | Of which: new borrowers | |
| 4C | 7.17 – 10.75 | B3 | B- | B- | 13.59 | 0.00 | 40,401 | 37,238 | - | - | - |
| 4D | 10.75 – 16.13 | | | | 19.66 | 0.00 | 14,035 | 12,936 | - | - | - |
| 4E | 16.13 – 100.00 | Caa1 or | CCC+ or | CCC+ or | 39.47 | 0.00 | 13,263 | 12,225 | - | - | - |
| Default | | | | | | | | | | | |
| 5 | 100.00 | | | | 95.26 | 1.00 | 55,419 | 42,081 | 3 | 3 | - |

FIG. 60 – COMPARISON OF LOSS ESTIMATES AND ACTUAL LOSSES IN NON-DEFAULTING EXPOSURE CLASSES UNDER THE IRB APPROACH

| € million | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Exposure class** | **Expected Dec. 31, 2019** | **Actual 2020** | Expected **Dec. 31, 2018** | Actual **2019** | Expected **Dec. 31, 2017** | Actual **2018** | Expected **Dec. 31, 2016** | Actual **2017** | Expected **Dec. 31, 2015** | Actual **2016** |
| Central governments and central banks | - | - | - | - | 4 | - | 6 | - | 9 | - |
| Institutions | 0 | 0 | - | - | 15 | - | 17 | - | 22 | 5 |
| Corporates | 9 | 176 | 23 | 46 | 173 | 71 | 263 | 442 | 298 | 203 |
| Equity exposures | - | - | - | - | - | - | - | - | 6 | - |
| Mortgage-backed retail IRBA receivables | 104 | 4 | 97 | 17 | 103 | 25 | 105 | 18 | 201 | 23 |
| Qualified revolving retail IRBA receivables | - | - | - | - | - | - | - | - | - | - |
| Other retail IRBA receivables | 104 | 120 | 119 | 125 | 101 | 131 | 101 | 86 | 198 | 78 |
| **Total** | **218** | **300** | **240** | **187** | **395** | **227** | **493** | **547** | **652** | **233** |

Fig. 60 shows that the losses of €300 million actually incurred in 2020 (2019: €187 million) across all exposure classes were higher than the expected figure of €218 million (December 31, 2019: €240 million). This was due to market turbulence caused by COVID-19.

### 6.6.4.8 Average risk parameters by country of domicile of borrowing entity and exposure class

(ARTICLE 452 SENTENCE 1 LETTER J CRR)

The information in Fig. 61 relates to the following exposure classes: central governments and central banks, institutions, corporates (including small and medium-sized enterprises (SMEs), specialized lending, and purchased receivables that are treated as corporate loans), and long-term equity investments that are backed by own funds based on individual probabilities of default (PD/LGD approach). Using the foundation IRB approach, the average exposure-weighted PD per country in which loans and advances are granted (country of asset) is disclosed as a percentage.

FIG. 61 – AVERAGE PD BY COUNTRY AND EXPOSURE CLASS UNDER THE FOUNDATION IRB APPROACH

| | Exposure class | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Central governments and central banks | Institutions | Corporates | | | | Long-term equity investments | Total | Total as at Dec. 31, 2019 |
| | | | of which: | | | | | | |
| Average PD (percent) | | | SMEs | Specialized lending | Receivables purchased | Other | | | |
| Country | | Dec. 31, 2020 | | | | | | | |
| Germany | 0.01 | 0.25 | 0.38 | 0.74 | 1.01 | 2.45 | 0.12 | 1.01 | 1.64 |
| Egypt | - | 6.00 | - | 1.10 | - | 6.00 | - | 6.00 | 33.08 |
| Algeria | 1.10 | 1.10 | - | - | - | - | - | 1.10 | 0.75 |
| Angola | - | 30.00 | - | - | - | - | - | 30.00 | 9.00 |
| Argentina | - | - | - | - | - | 100.00 | - | 100.00 | 30.00 |
| Armenia | - | 6.00 | - | - | 6.00 | - | - | 6.00 | - |
| Azerbaijan | - | - | - | - | - | - | - | - | - |
| Ethiopia | - | - | - | - | - | - | - | - | - |
| Australia | - | 0.05 | - | 65.75 | - | 0.20 | - | - | 0.22 |
| Bahamas | - | - | - | - | - | - | - | - | 0.75 |
| Bahrain | - | - | - | - | - | - | - | - | 4.00 |
| Bangladesh | - | 9.00 | - | - | 9.00 | - | - | 9.00 | 9.00 |
| Belgium | - | 0.06 | - | - | 0.07 | 0.21 | - | 0.07 | 0.10 |
| Benin | - | - | - | - | - | - | - | - | 30.00 |
| Bermuda | - | - | - | - | - | 4.00 | - | 4.00 | 0.52 |
| Botswana | - | 1.70 | - | - | - | - | - | 1.70 | 1.10 |
| Brazil | - | 1.22 | - | - | - | - | - | 1.22 | 1.13 |
| British Virgin Islands | - | - | - | 0.03 | - | - | - | 0.03 | 0.04 |
| Bulgaria | - | - | - | - | - | - | - | - | 4.00 |
| Burundi | - | - | - | - | - | - | - | - | - |
| Chile | - | 0.10 | - | - | - | - | - | 0.10 | - |
| China | - | 0.12 | - | - | 0.10 | 4.26 | - | 0.10 | 0.41 |
| Denmark | - | 0.28 | - | 54.26 | 0.10 | 0.38 | - | 0.10 | 2.03 |
| Côte d'Ivoire | - | 30.00 | - | - | - | - | - | 30.00 | 30.00 |
| Finland | - | 0.05 | - | - | - | 0.27 | - | 0.06 | 0.10 |
| France | - | 0.07 | - | 1.02 | - | 0.23 | - | 0.21 | 0.14 |
| Gabon | - | - | - | - | - | - | - | - | - |
| Georgia | - | - | - | - | - | - | - | - | - |
| Ghana | - | - | - | - | - | 1.70 | - | 1.70 | 1.96 |
| Greece | - | - | - | - | - | - | - | - | - |
| United Kingdom | - | 0.09 | 0.24 | 0.08 | 0.35 | 0.71 | 0.10 | 0.35 | 0.33 |
| Guernsey | - | - | - | 0.13 | - | - | - | 0.13 | 0.13 |
| Guinea | - | 30.00 | - | - | - | - | - | 30.00 | - |
| Hong Kong | 0.03 | 0.08 | - | - | - | 6.46 | - | 2.85 | 0.45 |
| India | - | 0.58 | - | - | 0.75 | 1.58 | - | 0.75 | 0.73 |
| Indonesia | - | 0.54 | - | - | 0.50 | - | - | 0.50 | 0.50 |
| Iran | - | - | - | - | - | 100.00 | - | 100.00 | 100.00 |
| Ireland | - | 0.11 | - | - | - | 0.24 | - | 0.12 | 0.18 |
| Iceland | - | 1.10 | - | - | - | - | - | 1.10 | 95.98 |
| Isle of Man | - | - | - | 0.08 | - | - | - | 0.08 | 0.28 |
| Israel | - | 0.07 | - | - | - | - | - | 0.07 | 0.15 |
| Italy | - | 4.12 | - | - | - | 0.27 | 0.75 | 2.17 | 1.26 |
| Japan | - | 0.13 | - | - | - | 0.18 | - | 0.13 | 0.14 |
| Jersey | - | - | - | 13.50 | - | - | - | 13.50 | 0.10 |
| Jordan | - | 4.00 | - | - | - | - | - | 4.00 | - |
| Cameroon | - | - | - | - | - | - | - | - | - |
| Canada | - | 0.04 | - | - | - | 0.36 | - | 0.09 | 0.17 |
| Kazakhstan | - | 1.10 | - | - | - | - | - | 1.10 | 1.10 |

| | Exposure class | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Central governments and central banks | Institutions | Corporates | | | | Long-term equity investments | Total | Total as at Dec. 31, 2019 |
| | | | of which: | | | | | | |
| Average PD (percent) | | | SMEs | Specialized lending | Receivables purchased | Other | | | |
| Country | Dec. 31, 2020 | | | | | | | | |
| Qatar | - | 0.15 | - | - | 0.13 | - | - | 0.13 | 0.34 |
| Kenya | - | 12.99 | - | - | 13.50 | - | - | 13.50 | 6.00 |
| Colombia | - | 0.75 | - | - | - | - | - | 0.75 | 0.50 |
| Korea | - | 0.06 | - | - | 0.04 | 0.05 | - | 0.04 | 0.06 |
| Croatia | 0.50 | 0.50 | - | - | - | - | - | 0.50 | 0.75 |
| Cuba | - | 91.48 | - | - | 100.00 | - | - | 100.00 | 65.64 |
| Kuwait | - | 0.05 | - | - | - | - | - | 0.05 | 0.08 |
| Lebanon | - | - | - | - | - | - | - | - | - |
| Liberia | - | - | - | - | - | 0.35 | - | 0.35 | 15.69 |
| Liechtenstein | - | 0.23 | 0.23 | - | - | - | - | 0.23 | 0.17 |
| Lithuania | - | - | - | - | - | - | - | - | - |
| Luxembourg | - | 0.11 | 0.26 | 0.23 | - | 0.48 | - | 0.31 | 0.22 |
| Malaysia | - | 0.21 | - | - | - | - | - | 0.21 | 0.74 |
| Mali | - | 30.00 | - | - | - | - | - | 30.00 | - |
| Malta | - | 0.35 | - | - | - | - | - | 0.35 | 1.70 |
| Morocco | - | 1.51 | - | - | - | - | - | 1.51 | 1.26 |
| Mauritius | - | 0.50 | - | - | - | - | - | 0.50 | 0.35 |
| Mexico | - | 0.35 | 0.75 | - | - | 0.84 | - | 0.89 | 1.07 |
| Moldova | - | - | - | - | - | - | - | - | 30.00 |
| Mongolia | - | 13.50 | - | - | - | - | - | 13.50 | 13.50 |
| Myanmar | - | - | - | - | - | - | - | - | 2.60 |
| Namibia | - | 2.60 | - | - | - | - | - | 2.60 | 1.10 |
| New Zealand | - | 0.06 | - | - | - | - | - | 0.06 | 0.18 |
| Netherlands | - | 0.07 | 0.09 | 0.23 | - | 0.47 | - | 0.23 | 0.23 |
| Netherlands Antilles | - | - | - | - | - | - | - | - | - |
| Niger | - | - | - | - | - | - | - | - | 30.00 |
| Nigeria | - | 9.00 | - | - | - | 5.88 | - | 5.88 | 6.00 |
| Norway | - | 0.04 | - | - | - | 0.23 | - | 0.07 | 0.07 |
| Oman | - | 1.70 | - | - | - | - | - | 1.70 | 4.00 |
| Austria | - | 0.23 | 0.15 | 0.18 | - | 9.07 | - | 3.80 | 0.31 |
| Pakistan | - | - | - | - | - | - | - | - | 30.00 |
| Panama | - | - | - | - | - | - | - | - | 0.07 |
| Papua New Guinea | - | 6.00 | - | - | - | - | - | 6.00 | 6.00 |
| Peru | - | 0.15 | - | - | - | 0.75 | - | 0.44 | 0.50 |
| Philippines | - | 0.50 | - | - | - | 6.00 | - | 6.00 | 1.67 |
| Poland | - | 0.15 | 0.75 | 0.23 | 0.10 | 14.98 | 6.00 | 5.20 | 5.31 |
| Portugal | - | 0.35 | - | - | - | 0.35 | - | 0.35 | 0.47 |
| Rwanda | - | 13.50 | - | - | - | - | - | 13.50 | 13.50 |
| Romania | - | 0.72 | - | - | - | - | - | 0.72 | 0.75 |
| Russia | - | 0.58 | - | - | 0.59 | 0.82 | - | 0.59 | 0.59 |
| Saudi Arabia | - | 0.23 | - | - | 0.15 | 0.50 | - | 0.15 | 0.87 |
| Sweden | - | 0.04 | - | 0.22 | - | 0.11 | - | 0.06 | 0.10 |
| Switzerland | 0.01 | 2.76 | - | 0.08 | - | 0.55 | 0.10 | 0.76 | 0.55 |
| Senegal | - | 4.00 | - | - | - | - | - | 4.00 | 4.00 |
| Zimbabwe | - | 30.00 | - | - | - | - | - | 30.00 | 30.00 |
| Singapore | 0.01 | 0.03 | - | - | - | 2.57 | - | 2.01 | 6.16 |
| Slovakia | - | 0.50 | - | - | - | - | - | 0.50 | 0.50 |
| Slovenia | - | - | - | - | - | 0.15 | - | 0.15 | 0.15 |
| Other | 0.01 | 1.10 | - | - | - | - | - | 0.01 | 0.56 |
| Spain | - | 0.27 | 0.23 | - | - | 0.39 | - | 0.30 | 0.39 |
| Sri Lanka | - | 13.50 | - | - | - | - | - | 13.50 | 9.00 |

| Average PD (percent) | Exposure class: Central governments and central banks | Institutions | Corporates – of which: SMEs | Specialized lending | Receivables purchased | Other | Long-term equity investments | Total | Total as at Dec. 31, 2019 |
|---|---|---|---|---|---|---|---|---|---|
| **Country** | **Dec. 31, 2020** | | | | | | | | |
| South Africa | - | 13.50 | - | - | - | - | - | 13.50 | 1.10 |
| Sudan | - | 30.00 | - | - | 30.00 | - | - | 30.00 | 30.00 |
| Taiwan | - | 0.08 | - | - | - | - | - | 0.08 | 0.06 |
| Tanzania | - | 13.50 | - | - | - | - | - | 13.50 | 13.50 |
| Thailand | 0.15 | 0.20 | - | - | - | - | - | 0.15 | 0.31 |
| Togo | - | - | - | - | - | - | - | - | - |
| Chad | - | - | - | - | - | - | - | - | - |
| Czech Republic | - | 0.13 | - | - | - | 11.24 | - | 7.54 | 6.75 |
| Tunisia | 9.00 | 9.73 | - | - | - | - | - | 9.72 | 10.00 |
| Turkey | - | 6.06 | - | 1.10 | 6.05 | 5.40 | - | 6.05 | 4.22 |
| Turkmenistan | - | 9.00 | - | - | - | - | - | 9.00 | 9.00 |
| Ukraine | - | 13.50 | - | - | 13.50 | - | - | 13.50 | 13.50 |
| Hungary | - | 1.10 | - | - | - | 0.75 | - | 1.05 | 0.75 |
| Uzbekistan | - | 6.00 | - | - | - | - | - | 6.00 | 9.00 |
| United Arab Emirates | - | 0.13 | - | - | 0.15 | - | - | 0.15 | 0.32 |
| United States | 0.47 | 0.09 | - | 1.10 | - | 0.74 | - | 0.13 | 0.64 |
| Vietnam | - | 2.60 | - | 1.10 | - | - | - | 1.85 | 14.42 |
| Belarus | - | 9.00 | - | - | 9.00 | - | - | 9.00 | 9.44 |
| Cyprus | - | - | - | - | - | 0.75 | - | 0.75 | 1.70 |
| **Total average PD as at Dec. 31, 2020** | **0.08** | **0.52** | **0.38** | **1.01** | **-** | **2.32** | **0.52** | **0.81** | |
| Total average PD as at Dec. 31, 2019 | 0.04 | 0.45 | 0.47 | 1.06 | 2.45 | 2.09 | 0.50 | | 1.20 |

1 Prior-year value corrected.

The information given in Fig. 62 relates to the following exposure classes: central governments and central banks, institutions, corporates (including SMEs, specialized lending, and purchased receivables that are treated as corporate loans), long-term equity investments that are backed by own funds based on individual probabilities of default (PD/LGD approach), and retail business (broken down into mortgage-backed IRBA exposures, qualified revolving IRBA exposures, and other IRBA exposures). Using the advanced IRB approach, the average exposure-weighted PD and LGD per country in which loans and advances are granted (country of asset) is disclosed as a percentage.

FIG. 62 – AVERAGE PD AND LGD BY COUNTRY AND EXPOSURE CLASS UNDER THE ADVANCED IRB APPROACH

| Country | | Exposure class | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Corporates | | | | Retail business | | | | | |
| | | | | of which: | | | | of which: | | | | | |
| % | Risk parameter | Central governments | Institutions | SMEs | Specialized lending | Receivables purchased | Other | Mortgage-backed IRBA exposures | Qualified revolving IRBA | Other IRBA retail exposures | Long-term equity investments | Total as at Dec. 31, 2020 | Total as at Dec. 31, 2019 |
| Germany | Ø PD | - | - | - | - | - | 5.65 | 2.32 | - | 4.16 | - | 4.04 | 3.99 |
| | Ø LGD | - | - | - | - | - | 0.49 | 10.59 | - | 38.73 | - | 16.60 | 16.60 |
| Egypt | Ø PD | - | - | - | - | - | - | - | - | - | - | - | 100.00 |
| | Ø LGD | - | - | - | - | - | - | - | - | - | - | - | 13.76 |
| Andorra | Ø PD | - | - | - | - | - | - | - | - | - | - | - | 0.15 |
| | Ø LGD | - | - | - | - | - | - | - | - | - | - | - | 25.89 |
| Angola | Ø PD | - | - | - | - | - | - | - | - | 0.75 | - | 0.75 | 1.10 |
| | Ø LGD | - | - | - | - | - | - | - | - | 44.53 | - | 44.53 | 50.12 |
| Argentina | Ø PD | - | - | - | - | - | - | 1.58 | - | 50.80 | - | 26.19 | 35.91 |
| | Ø LGD | - | - | - | - | - | - | 12.79 | - | 59.68 | - | 36.24 | 42.96 |
| Australia | Ø PD | - | - | - | - | - | - | 3.90 | - | 0.86 | - | 2.38 | 2.70 |
| | Ø LGD | - | - | - | - | - | - | 11.27 | - | 27.57 | - | 19.42 | 18.74 |
| Bahamas | Ø PD | - | - | - | - | - | 5.56 | 100.00 | - | - | - | 52.78 | 56.42 |
| | Ø LGD | - | - | - | - | - | 0.35 | 10.87 | - | - | - | 5.61 | 11.92 |
| Barbados | Ø PD | - | - | - | - | - | - | 1.10 | - | - | - | 1.10 | 1.10 |
| | Ø LGD | - | - | - | - | - | - | 10.75 | - | - | - | 10.75 | 11.29 |
| Belgium | Ø PD | - | - | - | - | - | - | 4.60 | - | 7.88 | - | 6.24 | 5.61 |
| | Ø LGD | - | - | - | - | - | - | 10.87 | - | 30.29 | - | 20.58 | 13.56 |
| Bermuda | Ø PD | - | - | - | - | - | 4.32 | - | - | - | - | 4.32 | 9.99 |
| | Ø LGD | - | - | - | - | - | 11.66 | - | - | - | - | 11.66 | 4.51 |
| Bosnia and Herzegovina | Ø PD | - | - | - | - | - | - | 1.10 | - | 88.79 | - | 44.95 | 48.28 |
| | Ø LGD | - | - | - | - | - | - | 11.13 | - | 35.44 | - | 23.29 | 26.18 |
| Brazil | Ø PD | - | - | - | - | - | 100.00 | 0.96 | - | 2.06 | - | 34.34 | 40.38 |
| | Ø LGD | - | - | - | - | - | 53.83 | 6.88 | - | 62.43 | - | 41.05 | 37.64 |
| British Virgin Islands | Ø PD | - | - | - | - | - | 37.96 | - | - | - | - | 37.96 | 10.10 |
| | Ø LGD | - | - | - | - | - | 16.07 | - | - | - | - | 16.07 | 3.16 |
| Brunei | Ø PD | - | - | - | - | - | - | - | - | - | - | - | 1.10 |
| | Ø LGD | - | - | - | - | - | - | - | - | - | - | - | 56.90 |
| Bulgaria | Ø PD | - | - | - | - | - | - | - | - | 22.07 | - | 22.07 | 32.39 |
| | Ø LGD | - | - | - | - | - | - | - | - | 52.93 | - | 52.93 | 55.33 |
| Cayman Islands | Ø PD | - | - | - | - | - | 44.50 | - | - | - | - | 44.50 | 53.30 |
| | Ø LGD | - | - | - | - | - | 25.37 | - | - | - | - | 25.37 | 39.72 |
| Chile | Ø PD | - | - | - | - | - | 1.94 | 1.10 | - | - | - | 1.52 | 1.09 |
| | Ø LGD | - | - | - | - | - | 9.47 | 12.35 | - | - | - | 10.91 | 6.85 |
| China | Ø PD | - | - | - | - | - | - | 1.27 | - | 0.10 | - | 0.68 | 1.37 |
| | Ø LGD | - | - | - | - | - | - | 9.10 | - | 25.71 | - | 17.41 | 8.42 |
| Denmark | Ø PD | - | - | - | - | - | - | 0.82 | - | 12.59 | - | 6.71 | 3.02 |
| | Ø LGD | - | - | - | - | - | - | 9.23 | - | 30.35 | - | 19.79 | 20.49 |
| Estonia | Ø PD | - | - | - | - | - | - | - | - | 31.19 | - | 31.19 | 28.62 |
| | Ø LGD | - | - | - | - | - | - | - | - | 65.90 | - | 65.90 | 65.32 |
| Faroe Islands | Ø PD | - | - | - | - | - | 100.00 | - | - | - | - | 100.00 | 100.00 |
| | Ø LGD | - | - | - | - | - | 63.23 | - | - | - | - | 63.23 | 55.23 |
| Finland | Ø PD | - | - | - | - | - | - | 5.46 | - | 21.60 | - | 13.53 | 5.23 |
| | Ø LGD | - | - | - | - | - | - | 26.75 | - | 49.07 | - | 37.91 | 16.37 |
| France | Ø PD | - | - | - | - | - | 1.78 | 9.31 | - | 4.04 | - | 5.04 | 14.03 |
| | Ø LGD | - | - | - | - | - | 26.35 | 10.93 | - | 27.39 | - | 21.56 | 18.96 |

| Country % | Risk parameter | Exposure class: Central governments | Institutions | Corporates, of which: SMEs | Corporates, of which: Specialized lending | Corporates, of which: Receivables purchased | Corporates, of which: Other | Retail business, of which: Mortgage-backed IRBA exposures | Retail business, of which: Qualified revolving IRBA | Retail business, of which: Other IRBA retail exposures | Long-term equity investments | Total as at Dec. 31, 2020 | Total as at Dec. 31, 2019 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ghana | Ø PD | - | - | - | - | - | - | 0.07 | - | - | - | 0.07 | 0.07 |
| | Ø LGD | - | - | - | - | - | - | 9.48 | - | - | - | 9.48 | 9.48 |
| Greece | Ø PD | - | - | - | - | - | 100.00 | 2.59 | - | 19.14 | - | 40.58 | 46.92 |
| | Ø LGD | - | - | - | - | - | 90.35 | 15.20 | - | 51.82 | - | 52.45 | 23.36 |
| United Kingdom | Ø PD | - | - | - | - | - | 30.00 | 2.15 | - | 0.81 | - | 10.98 | 2.92 |
| | Ø LGD | - | - | - | - | - | 0.35 | 9.29 | - | 25.90 | - | 11.85 | 20.20 |
| Guatemala | Ø PD | - | - | - | - | - | - | 100.00 | - | - | - | 100.00 | 100.00 |
| | Ø LGD | - | - | - | - | - | - | 22.77 | - | - | - | 22.77 | 22.70 |
| Hong Kong | Ø PD | - | - | - | - | - | 14.48 | 2.41 | - | 0.10 | - | 5.66 | 44.09 |
| | Ø LGD | - | - | - | - | - | 1.26 | 10.53 | - | 25.71 | - | 12.50 | 19.42 |
| India | Ø PD | - | - | - | - | - | 100.00 | - | - | - | - | 100.00 | 21.50 |
| | Ø LGD | - | - | - | - | - | 90.35 | - | - | - | - | 90.35 | 13.77 |
| Indonesia | Ø PD | - | - | - | - | - | - | - | - | 6.00 | - | 6.00 | 26.55 |
| | Ø LGD | - | - | - | - | - | - | - | - | 53.97 | - | 53.97 | 54.90 |
| Iran | Ø PD | - | - | - | - | - | - | 1.10 | - | - | - | 1.10 | 4.00 |
| | Ø LGD | - | - | - | - | - | - | 6.53 | - | - | - | 6.53 | 6.64 |
| Ireland | Ø PD | - | - | - | - | - | 95.62 | 2.85 | - | 11.43 | - | 36.63 | 18.42 |
| | Ø LGD | - | - | - | - | - | 70.81 | 9.57 | - | 6.93 | - | 29.10 | 18.09 |
| Isle of Man | Ø PD | - | - | - | - | - | 0.50 | - | - | - | - | 0.50 | 27.40 |
| | Ø LGD | - | - | - | - | - | 0.35 | - | - | - | - | 0.35 | 13.45 |
| Israel | Ø PD | - | - | - | - | - | - | 2.83 | - | 0.55 | - | 1.69 | 0.89 |
| | Ø LGD | - | - | - | - | - | - | 10.51 | - | 26.94 | - | 18.73 | 18.30 |
| Italy | Ø PD | - | - | - | - | - | - | 3.22 | - | 28.89 | - | 16.06 | 18.77 |
| | Ø LGD | - | - | - | - | - | - | 11.66 | - | 45.00 | - | 28.33 | 23.01 |
| Jamaica | Ø PD | - | - | - | - | - | - | 1.70 | - | - | - | 1.70 | 1.70 |
| | Ø LGD | - | - | - | - | - | - | 7.13 | - | - | - | 7.13 | 7.20 |
| Japan | Ø PD | - | - | - | - | - | - | 17.07 | - | 24.94 | - | 21.01 | 15.12 |
| | Ø LGD | - | - | - | - | - | - | 1.29 | - | 11.77 | - | 6.53 | 6.72 |
| Jordan | Ø PD | - | - | - | - | - | - | 9.00 | - | - | - | 9.00 | 3.55 |
| | Ø LGD | - | - | - | - | - | - | 8.45 | - | - | - | 8.45 | 25.84 |
| Cambodia | Ø PD | - | - | - | - | - | - | - | - | - | - | - | 3.40 |
| | Ø LGD | - | - | - | - | - | - | - | - | - | - | - | 47.93 |
| Canada | Ø PD | - | - | - | - | - | - | 3.88 | - | 0.83 | - | 2.35 | 5.72 |
| | Ø LGD | - | - | - | - | - | - | 8.37 | - | 27.67 | - | 18.02 | 30.93 |
| Qatar | Ø PD | - | - | - | - | - | - | 1.55 | - | - | - | 1.55 | 0.96 |
| | Ø LGD | - | - | - | - | - | - | 9.43 | - | - | - | 9.43 | 6.29 |
| Korea | Ø PD | - | - | - | - | - | - | - | - | 0.82 | - | 0.82 | 15.14 |
| | Ø LGD | - | - | - | - | - | - | - | - | 22.20 | - | 22.20 | 12.52 |
| Kosovo | Ø PD | - | - | - | - | - | - | - | - | 50.34 | - | 50.34 | 30.26 |
| | Ø LGD | - | - | - | - | - | - | - | - | 58.53 | - | 58.53 | 51.23 |
| Croatia | Ø PD | - | - | - | - | - | - | 2.89 | - | 31.98 | - | 17.43 | 42.35 |
| | Ø LGD | - | - | - | - | - | - | 7.10 | - | 57.74 | - | 32.42 | 52.00 |
| Cuba | Ø PD | - | - | - | - | - | - | - | - | - | - | - | 0.75 |
| | Ø LGD | - | - | - | - | - | - | - | - | - | - | - | 13.05 |
| Kuwait | Ø PD | - | - | - | - | - | 2.60 | 3.41 | - | - | - | 3.00 | 4.84 |
| | Ø LGD | - | - | - | - | - | 10.61 | 12.93 | - | - | - | 11.77 | 6.79 |
| Latvia | Ø PD | - | - | - | - | - | - | - | - | 100.00 | - | 100.00 | 69.73 |
| | Ø LGD | - | - | - | - | - | - | - | - | 63.00 | - | 63.00 | 40.13 |
| Liberia | Ø PD | - | - | - | - | - | 17.92 | - | - | - | - | 17.92 | 4.21 |
| | Ø LGD | - | - | - | - | - | 12.06 | - | - | - | - | 12.06 | 3.40 |
| | Ø PD | - | - | - | - | - | - | 7.17 | - | 0.10 | - | 3.63 | 0.72 |

| Country | | Exposure class | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Corporates | | | | Retail business | | | | | |
| | | | | of which: | | | | of which: | | | | | |
| % | Risk parameter | Central governments | Institutions | SMEs | Specialized lending | Receivables purchased | Other | Mortgage-backed IRBA exposures | Qualified revolving IRBA | Other IRBA retail exposures | Long-term equity investments | Total as at Dec. 31, 2020 | Total as at Dec. 31, 2019 |
| Liechtenstein | Ø LGD | - | - | - | - | - | - | 8.05 | - | 25.71 | - | 16.88 | 17.65 |
| Lithuania | Ø PD | - | - | - | - | - | - | - | - | 0.35 | - | 0.35 | 1.10 |
| | Ø LGD | - | - | - | - | - | - | - | - | 71.93 | - | 71.93 | 59.76 |
| Luxembourg | Ø PD | - | - | - | - | - | - | 6.90 | - | 10.51 | - | 8.71 | 16.86 |
| | Ø LGD | - | - | - | - | - | - | 12.47 | - | 22.24 | - | 17.36 | 11.81 |
| Malaysia | Ø PD | - | - | - | - | - | - | 0.67 | - | - | - | 0.67 | 0.66 |
| | Ø LGD | - | - | - | - | - | - | 10.63 | - | - | - | 10.63 | 11.80 |
| Malta | Ø PD | - | - | - | - | - | 8.66 | 1.10 | - | 6.00 | - | 5.25 | 12.75 |
| | Ø LGD | - | - | - | - | - | 6.40 | 7.76 | - | 50.12 | - | 21.42 | 24.66 |
| Morocco | Ø PD | - | - | - | - | - | - | 0.15 | - | - | - | 0.15 | - |
| | Ø LGD | - | - | - | - | - | - | 5.14 | - | - | - | 5.14 | - |
| Marshall Islands | Ø PD | - | - | - | - | - | 20.87 | - | - | - | - | 20.87 | 12.94 |
| | Ø LGD | - | - | - | - | - | 10.31 | - | - | - | - | 10.31 | 3.05 |
| Mauritius | Ø PD | - | - | - | - | - | - | 100.00 | - | - | - | 100.00 | 30.00 |
| | Ø LGD | - | - | - | - | - | - | 26.25 | - | - | - | 26.25 | 13.65 |
| Mexico | Ø PD | - | - | - | - | - | 100.00 | 1.10 | - | - | - | 50.55 | 11.51 |
| | Ø LGD | - | - | - | - | - | 51.92 | 8.56 | - | - | - | 30.24 | 21.42 |
| Moldova | Ø PD | - | - | - | - | - | - | - | - | - | - | - | 100.00 |
| | Ø LGD | - | - | - | - | - | - | - | - | - | - | - | 15.87 |
| Montenegro | Ø PD | - | - | - | - | - | - | 1.10 | - | - | - | 1.10 | 58.76 |
| | Ø LGD | - | - | - | - | - | - | 7.84 | - | - | - | 7.84 | 3.44 |
| Namibia | Ø PD | - | - | - | - | - | - | 0.47 | - | - | - | 0.47 | 50.48 |
| | Ø LGD | - | - | - | - | - | - | 29.63 | - | - | - | 29.63 | 46.01 |
| New Zealand | Ø PD | - | - | - | - | - | - | 2.60 | - | 0.35 | - | 1.48 | 1.10 |
| | Ø LGD | - | - | - | - | - | - | 6.32 | - | 39.81 | - | 23.06 | 11.39 |
| Netherlands | Ø PD | - | - | - | - | - | 20.04 | 4.97 | - | 8.91 | - | 11.31 | 8.72 |
| | Ø LGD | - | - | - | - | - | 25.60 | 11.04 | - | 26.95 | - | 21.19 | 24.47 |
| Netherlands Antilles | Ø PD | - | - | - | - | - | - | - | - | - | - | - | - |
| | Ø LGD | - | - | - | - | - | - | - | - | - | - | - | - |
| North Macedonia | Ø PD | - | - | - | - | - | - | - | - | 10.44 | - | 10.44 | 100.00 |
| | Ø LGD | - | - | - | - | - | - | - | - | 53.37 | - | 53.37 | 74.55 |
| Norway | Ø PD | - | - | - | - | - | 64.49 | 2.52 | - | 31.03 | - | 32.68 | 23.06 |
| | Ø LGD | - | - | - | - | - | 32.14 | 9.85 | - | 35.72 | - | 25.91 | 24.11 |
| Oman | Ø PD | - | - | - | - | - | - | - | - | - | - | - | 0.75 |
| | Ø LGD | - | - | - | - | - | - | - | - | - | - | - | 7.74 |
| Austria | Ø PD | - | - | - | - | - | - | 3.73 | - | 5.07 | - | 4.40 | 4.69 |
| | Ø LGD | - | - | - | - | - | - | 13.05 | - | 27.82 | - | 20.43 | 20.81 |
| Panama | Ø PD | - | - | - | - | - | 52.11 | 0.07 | - | 0.10 | - | 17.43 | 4.34 |
| | Ø LGD | - | - | - | - | - | 19.59 | 12.12 | - | 25.71 | - | 19.14 | 14.22 |
| Philippines | Ø PD | - | - | - | - | - | - | 100.00 | - | 38.20 | - | 69.10 | 71.37 |
| | Ø LGD | - | - | - | - | - | - | - | - | 31.90 | - | 31.90 | 37.97 |
| Poland | Ø PD | - | - | - | - | - | - | 3.35 | - | 36.93 | - | 20.14 | 15.73 |
| | Ø LGD | - | - | - | - | - | - | 10.12 | - | 47.90 | - | 29.01 | 27.63 |
| Portugal | Ø PD | - | - | - | - | - | - | 2.23 | - | 13.69 | - | 7.96 | 14.57 |
| | Ø LGD | - | - | - | - | - | - | 12.97 | - | 31.96 | - | 22.47 | 25.65 |
| Romania | Ø PD | - | - | - | - | - | - | - | - | 32.77 | - | 32.77 | 40.86 |
| | Ø LGD | - | - | - | - | - | - | - | - | 51.70 | - | 51.70 | 56.79 |
| Russia | Ø PD | - | - | - | - | - | - | 6.98 | - | 10.57 | - | 8.78 | 23.04 |
| | Ø LGD | - | - | - | - | - | - | 11.67 | - | 54.28 | - | 32.97 | 27.66 |
| Saudi Arabia | Ø PD | - | - | - | - | - | - | 1.10 | - | - | - | 1.10 | 1.10 |
| | Ø LGD | - | - | - | - | - | - | 7.24 | - | - | - | 7.24 | 7.48 |

| Country | | Exposure class | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Corporates | | | | Retail business | | | | | |
| | | | | of which: | | | | of which: | | | | | |
| % | Risk parameter | Central governments | Institutions | SMEs | Specialized lending | Receivables purchased | Other | Mortgage-backed IRBA exposures | Qualified revolving IRBA | Other IRBA retail exposures | Long-term equity investments | Total as at Dec. 31, 2020 | Total as at Dec. 31, 2019 |
| Sweden | Ø PD | - | - | - | - | - | - | 8.87 | - | 2.66 | - | 5.77 | 11.33 |
| | Ø LGD | - | - | - | - | - | - | 10.18 | - | 26.12 | - | 18.15 | 19.81 |
| Switzerland | Ø PD | - | - | - | - | - | 9.00 | 2.63 | - | 1.36 | - | 4.33 | 2.22 |
| | Ø LGD | - | - | - | - | - | 45.72 | 16.06 | - | 26.35 | - | 29.38 | 21.93 |
| Singapore | Ø PD | - | - | - | - | - | 47.45 | 1.16 | - | 0.12 | - | 16.24 | 8.00 |
| | Ø LGD | - | - | - | - | - | 18.11 | 14.27 | - | 24.94 | - | 19.11 | 16.09 |
| Slovakia | Ø PD | - | - | - | - | - | - | - | - | 64.87 | - | 64.87 | 35.15 |
| | Ø LGD | - | - | - | - | - | - | - | - | 44.65 | - | 44.65 | 57.16 |
| Slovenia | Ø PD | - | - | - | - | - | - | 0.15 | - | 18.87 | - | 9.51 | 19.79 |
| | Ø LGD | - | - | - | - | - | - | 9.48 | - | 53.38 | - | 31.43 | 26.35 |
| Spain | Ø PD | - | - | - | - | - | - | 5.94 | - | 2.46 | - | 4.20 | 5.11 |
| | Ø LGD | - | - | - | - | - | - | 10.40 | - | 26.86 | - | 18.63 | 13.49 |
| South Africa | Ø PD | - | - | - | - | - | - | 0.62 | - | - | - | 0.62 | 1.96 |
| | Ø LGD | - | - | - | - | - | - | 9.59 | - | - | - | 9.59 | 9.64 |
| Taiwan | Ø PD | - | - | - | - | - | - | 0.23 | - | - | - | 0.23 | 0.23 |
| | Ø LGD | - | - | - | - | - | - | 9.48 | - | - | - | 9.48 | 9.48 |
| Tanzania | Ø PD | - | - | - | - | - | - | - | - | 0.79 | - | 0.79 | 1.10 |
| | Ø LGD | - | - | - | - | - | - | - | - | 40.25 | - | 40.25 | 62.73 |
| Thailand | Ø PD | - | - | - | - | - | - | 19.09 | - | 11.08 | - | 15.09 | 10.66 |
| | Ø LGD | - | - | - | - | - | - | 8.45 | - | 59.82 | - | 34.13 | 27.18 |
| Czech Republic | Ø PD | - | - | - | - | - | - | 3.33 | - | 18.62 | - | 10.97 | 10.26 |
| | Ø LGD | - | - | - | - | - | - | 10.09 | - | 37.22 | - | 23.66 | 22.45 |
| Tunisia | Ø PD | - | - | - | - | - | - | 0.23 | - | 0.15 | - | 0.19 | 0.35 |
| | Ø LGD | - | - | - | - | - | - | 9.48 | - | 37.19 | - | 23.34 | 9.48 |
| Turkey | Ø PD | - | - | - | - | - | - | 1.85 | - | 65.61 | - | 33.73 | 27.02 |
| | Ø LGD | - | - | - | - | - | - | 10.00 | - | 48.71 | - | 29.36 | 19.57 |
| Ukraine | Ø PD | - | - | - | - | - | - | 0.18 | - | 0.82 | - | 0.50 | 0.67 |
| | Ø LGD | - | - | - | - | - | - | 9.48 | - | 45.57 | - | 27.52 | 27.51 |
| Hungary | Ø PD | - | - | - | - | - | - | 0.82 | - | 32.58 | - | 16.70 | 16.47 |
| | Ø LGD | - | - | - | - | - | - | 8.90 | - | 51.17 | - | 30.04 | 29.17 |
| Uzbekistan | Ø PD | - | - | - | - | - | - | - | - | 0.35 | - | 0.35 | 13.50 |
| | Ø LGD | - | - | - | - | - | - | - | - | 39.81 | - | 39.81 | 39.81 |
| United Arab Emirates | Ø PD | - | - | - | - | - | 18.24 | 0.70 | - | 0.75 | - | 6.56 | 4.26 |
| | Ø LGD | - | - | - | - | - | 0.35 | 9.42 | - | 25.97 | - | 11.91 | 11.01 |
| United States | Ø PD | - | - | - | - | - | 47.10 | 2.51 | - | 3.44 | - | 17.68 | 12.63 |
| | Ø LGD | - | - | - | - | - | 14.28 | 9.78 | - | 27.07 | - | 17.04 | 16.21 |
| Vietnam | Ø PD | - | - | - | - | - | - | 1.77 | - | - | - | 1.77 | 2.31 |
| | Ø LGD | - | - | - | - | - | - | 12.10 | - | - | - | 12.10 | 14.84 |
| Cyprus | Ø PD | - | - | - | - | - | - | 5.91 | - | - | - | 5.91 | 7.56 |
| | Ø LGD | - | - | - | - | - | - | 12.68 | - | - | - | 12.68 | 6.55 |
| **Total Ø PD as at Dec. 31, 2020** | | **-** | **-** | **-** | **-** | **-** | **27.95** | **2.33** | **-** | **4.15** | **-** | **11.48** | |
| **Total Ø LGD as at Dec. 31, 2020** | | **-** | **-** | **-** | **-** | **-** | **15.41** | **10.60** | **-** | **38.62** | **-** | **21.54** | |
| Total Ø PD as at Dec. 31, 2019 | | - | - | - | - | - | 19.72 | 2.42 | - | 4.44 | - | | 8.86 |
| Total Ø LGD as at Dec. 31, 2019 | | - | - | - | - | - | 8.91 | 10.64 | - | 38.72 | - | | 19.42 |

## 6.7 Disclosures on action in response to the COVID-19 crisis

Section 6.7 of this risk report contains information about loans and advances subject to legislative and non-legislative moratoria and about newly originated loans and advances provided under public guarantee schemes introduced in response to the COVID-19 crisis. This information had to be disclosed for the first time as at June 30, 2020 as a result of EBA/GL/2020/07 coming into force.

Detailed information about the effects of the COVID-19 crisis on the DZ BANK Group and the subsidiaries can be found in sections 2.3.2 (page 79), 2.3.3 (pages 79 and 80), and 2.4 (pages 81 to 83) of the commercial-law risk report. The impact of the COVID-19 pandemic on risk-bearing capacity is explained in section 5.2.3 (page 108), on the regulatory minimum requirements, capital ratios, leverage ratio, and MREL in section 5.3.3 (pages 112 to 116), on specific credit risk factors in section 6.3.2 (pages 120 to 121), on securitizations in section 6.6.8 (pages 137 and 138), on exposures particularly affected by the COVID-19 pandemic in section 6.7 (pages 138 and 139), on credit portfolios with increased risk content in section 6.8 (pages 139 to 142) and section 6.10.2 (pages 143 to 144), and on market risk in section 8.3.2 (page 147) and section 8.7 (page 151) of the commercial-law risk report.

FIG. 63 – INFORMATION ON LOANS AND ADVANCES SUBJECT TO LEGISLATIVE AND NON-LEGISLATIVE MORATORIA

**Dec. 31, 2020**

| | a | b | c | d | e | f | g | h | i | j | k | l | m | n | o |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **€ million** | **Gross carrying amount** | | | | | | | **Accumulated impairment, accumulated negative changes in fair value due to credit risk** | | | | | | | **Gross carrying amount** |
| | | **Performing** | | | **Non-performing** | | | | **Performing** | | | **Non-performing** | | | |
| | | | **Of which: exposures with forbearance measures** | **Of which: instruments with significant increase in credit risk since initial recognition, but not credit-impaired (stage 2)** | | **Of which: exposures with forbearance measures** | **Of which: unlikely to pay that are not past due or past due <= 90 days** | | | **Of which: exposures with forbearance measures** | **Of which: instruments with significant increase in credit risk since initial recognition, but not credit-impaired (stage 2)** | | **Of which: exposures with forbearance measures** | **Of which: unlikely to pay that are not past due or past due <= 90 days** | **Inflows to non-performing exposures** |
| Loans and advances subject to moratorium | 645 | 585 | 5 | 107 | 61 | 50 | 59 | -14 | -6 | 0 | -2 | -8 | -6 | -8 | 38 |
| of which: households | 634 | 575 | 5 | 105 | 59 | 49 | 57 | -14 | -6 | 0 | -2 | -8 | -6 | -7 | 37 |
| of which: collateralized by residential immovable property | 565 | 508 | 4 | 93 | 57 | 47 | 55 | -12 | -4 | 0 | -1 | -8 | -5 | -7 | 36 |
| of which: non-financial corporations | 11 | 9 | 0 | 2 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| of which: small and medium-sized enterprises | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| of which: collateralized by commercial immovable property | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Jun. 30, 2020**

| | a | b | c | d | e | f | g | h | i | j | k | l | m | n | o |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **€ million** | **Gross carrying amount** | | | | | | | **Accumulated impairment, accumulated negative changes in fair value due to credit risk** | | | | | | | **Gross carrying amount** |
| | | **Performing** | | | **Non-performing** | | | | **Performing** | | | **Non-performing** | | | |
| | | | **Of which: exposures with forbearance measures** | **Of which: instruments with significant increase in credit risk since initial recognition, but not credit-impaired (stage 2)** | | **Of which: exposures with forbearance measures** | **Of which: unlikely to pay that are not past due or past due <= 90 days** | | | **Of which: exposures with forbearance measures** | **Of which: instruments with significant increase in credit risk since initial recognition, but not credit-impaired (stage 2)** | | **Of which: exposures with forbearance measures** | **Of which: unlikely to pay that are not past due or past due <= 90 days** | **Inflows to non-performing exposures** |
| Loans and advances subject to moratorium | 1,533 | 1,382 | 21 | 174 | 151 | 129 | 148 | -22 | -12 | 0 | -5 | -11 | -7 | -10 | 84 |
| of which: households | 1,500 | 1,353 | 20 | 169 | 148 | 126 | 145 | -22 | -11 | 0 | -5 | -11 | -7 | -10 | 81 |
| of which: collateralized by residential immovable property | 1,383 | 1,242 | 19 | 153 | 141 | 121 | 139 | -18 | -9 | 0 | -3 | -10 | -7 | -9 | 78 |
| of which: non-financial corporations | 32 | 29 | 1 | 5 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| of which: small and medium-sized enterprises | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| of which: collateralized by commercial immovable property | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

The gross carrying amount of the loans and advances subject to legislative and non-legislative moratoria was €645 million as at December 31, 2020 (June 30, 2020: €1,533 million). Of this total, 98 percent was attributable to households with a gross carrying amount of €634 million (June 30, 2020: 98 percent). The remaining €11 million, or 2 percent, was accounted for by non-financial corporations (June 30, 2020: €32 million or 2 percent).

Of the loans and advances to households, approximately 88 percent, or €565 million, was collateralized by residential immovable property (June 30, 2020: 92 percent or €1,383 million).

Of the total loans and advances subject to moratoria, a volume of €585 million was performing (June 30, 2020: €1,382 million), which equates to 91 percent of the aforementioned total gross carrying amount of €645 million (June 30, 2020: 90 percent of the total gross carrying amount of €1,533 million). Of the performing volume, €107 million had seen a significant increase in credit risk since initial recognition but was not credit-impaired (stage 2) (June 30, 2020: €174 million).

Of the loans and advances subject to moratoria, a volume of €61 million was classified as non-performing (June 30, 2020: €151 million), which equates to around 9 percent of the aforementioned total gross carrying amount of €645 million (June 30, 2020: 10 percent of the total gross carrying amount of €1,533 million). The largest proportion of non-performing loans and advances is attributable, in an amount of €57 million, to loans and advances to households that are unlikely to pay, even though these loans and advances are not past due (or are past due by 90 days or fewer) (June 30, 2020: €145 million).

The accumulated impairment for all loans and advances subject to moratoria stood at €14 million (June 30, 2020: €22 million). Of this amount, 42 percent or €6 million was attributable to performing loans and advances (June 30, 2020: 52 percent or €12 million) and 58 percent or €8 million to non-performing loans and advances (June 30, 2020: 48 percent or €11 million). With a share of 99 percent, households accounted for almost all of the accumulated impairment on non-performing loans and advances (June 30, 2020: 99 percent).

FIG. 64 – BREAKDOWN OF LOANS AND ADVANCES SUBJECT TO LEGISLATIVE AND NON-LEGISLATIVE MORATORIA BY RESIDUAL MATURITY OF MORATORIA

**Dec. 31, 2020**

| | a | b | c | d | e | f | g | h | i |
|---|---|---|---|---|---|---|---|---|---|
| | | Gross carrying amount | | | | | | | |
| | | | | | Residual maturity of moratoria | | | | |
| € million | Number of borrowers | | Of which: legislative moratoria | Of which: expired | <= 3 months | > 3 months <= 6 months | > 6 months <= 9 months | > 9 months <= 12 months | > 1 year |
| Loans and advances for which moratorium was offered | 55,066 | 1,713 | - | - | - | - | - | - | - |
| Loans and advances subject to moratorium (granted) | 53,255 | 1,698 | 618 | 1,053 | 221 | 9 | 416 | - | - |
| of which: households | - | 1,640 | 583 | 1,005 | 217 | 9 | 408 | - | - |
| of which: collateralized by residential immovable property | - | 1,485 | 466 | 920 | 179 | 6 | 380 | - | - |
| of which: non-financial corporations | - | 57 | 34 | 46 | 3 | - | 8 | - | - |
| of which: small and medium-sized enterprises | - | - | - | - | - | - | - | - | - |
| of which: collateralized by commercial immovable property | - | 2 | 2 | 2 | - | - | - | - | - |

**Jun. 30, 2020**

| | a | b | c | d | e | f | g | h | i |
|---|---|---|---|---|---|---|---|---|---|
| | | Gross carrying amount | | | | | | | |
| | | | | | Residual maturity of moratoria | | | | |
| € million | Number of borrowers | | Of which: legislative moratoria | Of which: expired | <= 3 months | > 3 months <= 6 months | > 6 months <= 9 months | > 9 months <= 12 months | > 1 year |
| Loans and advances for which moratorium was offered | 56,693 | 1,728 | — | — | — | — | — | — | — |
| Loans and advances subject to moratorium (granted) | 54,921 | 1,667 | 656 | 134 | 764 | 732 | 37 | — | — |
| of which: households | — | 1,607 | 620 | 106 | 747 | 717 | 37 | — | — |
| of which: collateralized by residential immovable property | — | 1,455 | 505 | 73 | 710 | 664 | 9 | — | — |
| of which: non-financial corporations | — | 59 | 35 | 27 | 17 | 14 | — | — | — |
| of which: small and medium-sized enterprises | — | — | — | — | — | — | — | — | — |
| of which: collateralized by commercial immovable property | — | 2 | 2 | 2 | — | — | — | — | — |

As at the reporting date, a moratorium had been offered to 55,066 borrowers (June 30, 2020: 56,693 borrowers). This equates to a gross carrying amount of €1,713 million (June 30, 2020: €1,728 million). A moratorium was actually granted to 53,255 borrowers, representing a gross carrying amount of €1,698 million (June 30, 2020: 54,921 borrowers representing a gross carrying amount of €1,667 million). This equates to a share of 99 percent (June 30, 2020: 96 percent).

Almost all of the loans and advances were granted to households, which accounted for a share of 97 percent (June 30, 2020: 96 percent); the remaining gross carrying amount (€57 million) was attributable to non-financial corporations (June 30, 2020: €59 million). Legislative moratoria accounted for 36 percent or a gross carrying amount of €618 million (June 30, 2020: 39 percent or a gross carrying amount of €656 million). Expired moratoria accounted for a gross carrying amount of €1,053 million (June 30, 2020: €134 million), which equates to 62 percent of the loans and advances granted (June 30, 2020: 8 percent).

As at the reporting date, the gross carrying amount was largely attributable, in an amount of €416 million (24 percent of the loans and advances granted) to loans and advances with moratoria that had a residual maturity of more than 6 months but not more than 9 months and, in an amount of €221 million (13 percent of the loans and advances granted) to loans and advances with moratoria that had a residual maturity of not more than 3 months. Just 1 percent of the loans and advances had moratoria with a residual maturity of more than 3 months but not more than 6 months.

FIG. 65 – INFORMATION ON NEWLY ORIGINATED LOANS AND ADVANCES PROVIDED UNDER NEWLY APPLICABLE PUBLIC GUARANTEE SCHEMES INTRODUCED IN RESPONSE TO THE COVID-19 CRISIS

**Dec. 31, 2020**

| | a | b | c | d |
|---|---|---|---|---|
| **€ million** | **Gross carrying amount** | | **Maximum amount of the guarantee that can be considered** | **Gross carrying amount** |
| | | **of which: forborne** | **Public guarantees received** | **Inflows to non-performing exposures** |
| Newly originated loans and advances subject to public guarantee schemes | 1,141 | 11 | 974 | 6 |
| of which: households | 1 | - | - | - |
| of which: collateralized by residential immovable | - | - | - | - |
| of which: non-financial corporations | 1,123 | 10 | 958 | 6 |
| of which: small and medium-sized enterprises | 626 | - | - | 0 |
| of which: collateralized by commercial immovable | - | - | - | - |

**Jun. 30, 2020**

| | a | b | c | d |
|---|---|---|---|---|
| **€ million** | **Gross carrying amount** | | **Maximum amount of the guarantee that can be considered** | **Gross carrying amount** |
| | | **of which: forborne** | **Public guarantees received** | **Inflows to non-performing exposures** |
| Newly originated loans and advances subject to public guarantee schemes | 461 | 3 | 401 | — |
| of which: households | — | — | — | — |
| of which: collateralized by residential immovable | — | — | — | — |
| of which: non-financial corporations | 449 | 3 | 392 | — |
| of which: small and medium-sized enterprises | 331 | — | — | — |
| of which: collateralized by commercial immovable | — | — | — | — |

The gross carrying amount of the newly originated loans and advances provided under public guarantee schemes was €1,141 million as at December 31, 2020 (June 30, 2020: €461 million), of which €11 million (1 percent) was attributable to forborne loans (June 30, 2020: €3 million or 1 percent). The bulk of the loans (€1,123 million) was accounted for by non-financial corporations (June 30, 2020: €449 million), which equates to 98 percent of the aforementioned total gross carrying amount (June 30, 2020: 97 percent).

A gross carrying amount of €974 million was covered by public guarantees (June 30, 2020: €401 million), which equates to 85 percent of the total gross carrying amount of the loans and advances of €1,141 million (June 30, 2020: 87 percent of the total gross carrying amount of €461 million).

## 6.8 Counterparty credit risk

### 6.8.1 Required qualitative disclosures

(ARTICLE 435 (1) LETTER A CRR AND ARTICLE 439 LETTERS A TO D CRR)

In the Bank sector, counterparty credit risk is assigned to credit risk as replacement risk and refers to the risk of the counterparty to a transaction defaulting before the final settlement of the payments associated with that transaction. The counterparty is the other party in a derivatives transaction or securities financing transaction (SFT). A special feature of counterparty credit risk is that, in contrast to other types of credit risk, article 271 CRR stipulates that transactions in the trading book be taken into account in addition to transactions in the banking book.

The following disclosures on managing derivative counterparty risk exposure in the banking book and trading book of the DZ BANK banking group can be found in the commercial-law risk report.

FIG. 66 – DISCLOSURES IN THE REGULATORY RISK REPORT RELATING TO ARTICLE 435 (1) LETTER A CRR AND ARTICLE 439 LETTERS A TO D CRR

| Article | Subject | Commercial-law risk report | |
|---|---|---|---|
| | | **Section** | **Page** |
| Article 435 (1) letter a CRR | **Risk management objectives and policies:** strategies and processes for the management of risk | 6.2; 6.5.5; 6.5.6 | 119 and 120; 125 and 126; 126 and 127 |
| Article 439 letter a CRR | **Internal procedure for allocating capital** to cover derivative counterparty risk exposures and **procedure for determining the upper limits** for individual counterparties | 3.6.2; 3.6.4; 6.5.5 | 95 to 96; 96; 125 to 126 |
| Article 439 letter b CRR | **Procedure for obtaining collateral** (rules for guarantees and other measures for mitigating risk and for the measurement of counterparty credit risk) | 3.6.5; 6.5.7 | 96 to 97; 127 to 129 |
| Article 439 letter c CRR | **Handling of correlations** of market risk and counterparty risk | 6.5.6 | 126 to 127 |

In the derivatives business, there are master agreements entered into with individual counterparties that contractually require additional collateral to be provided to the counterparty in the event of DZ BANK's external credit rating being downgraded (article 439 sentence 1 letter d CRR). A three-notch downgrade as at December 31, 2020 would have led to additional collateral being provided in a total amount of around €428 million.

### 6.8.2 Regulatory measures

(ARTICLE 439 LETTERS E, F, AND I CRR)

#### 6.8.2.1 Analysis of counterparty credit risk

Fig. 67 presents the methods used to calculate the regulatory requirements for counterparty credit risk as well as the main parameters of each method.

FIG. 67 – EU CCR1 – ANALYSIS OF COUNTERPARTY CREDIT RISK BY APPROACH

| € million | | a | b | c | d | e | f | g |
|---|---|---|---|---|---|---|---|---|
| **Method** | | **Notional** | **Replacement cost/ current market value** | **Potential future credit exposure** | **Effective expected positive exposure (EEPE)** | **Multiplier** | **EAD after credit risk mitigation** | **RWAs** |
| 1 | Mark-to-market method | | 26,544 | 4,448 | | | 10,521 | 2,805 |
| 2 | Original exposure method | - | | | | | - | - |
| 3 | Standardized Approach | | - | - | | | - | - |
| 4 | IMM (for derivatives and securities financing transactions) | | | | - | - | - | - |
| 5 | of which: securities financing transactions | | | | - | - | - | - |
| 6 | of which: derivatives and long-settlement transactions | | | | - | - | - | - |
| 7 | of which: from contractual cross-product netting | | | | - | - | - | - |
| 8 | Financial collateral simple method (for securities financing transactions) | | | | | | - | - |
| 9 | Financial collateral comprehensive method (for securities financing transactions) | | | | | | - | - |
| 10 | VaR for securities financing transactions | | | | | | - | - |
| **11** | **Total as at Dec. 31, 2020** | | | | | | | **2,805** |
| | **Total as at Jun. 30, 2020** | | | | | | | 2,928 |

As at the reporting date, the RWAs resulting from counterparty credit risk were lower than as at June 30, 2020 owing to maturing transactions.

### 6.8.2.2 Capital requirement for adjustment of the credit valuation

(ARTICLE 439 LETTERS E AND F CRR)

The exposure value and the risk-weighted asset amount for transactions subject to capital requirements for credit valuation adjustments (CVA charge) must be disclosed separately. Based on the requirements in the CRR, Fig. 68 shows the regulatory calculations for adjustment of the credit valuation (broken down into the standardized and advanced approaches).

FIG. 68 – EU CCR2 – CVA CAPITAL CHARGE

| | | a | b | a | b |
|---|---|---|---|---|---|
| | | Dec. 31, 2020 | | Jun. 30, 2020 | |
| € million | | Exposure value | RWAs | Exposure value | RWAs |
| 1 | Total portfolios subject to the advanced method | - | - | - | - |
| 2 | (i) VaR component (including the 3x multiplier) | - | - | - | - |
| 3 | (ii) Stressed VaR component (sVaR, including the 3x multiplier) | - | - | - | - |
| 4 | All portfolios subject to the standardized method | 2,680 | 1,091 | 2,547 | 1,078 |
| EU4 | Based on the original exposure method | - | - | - | - |
| **5** | **Total subject to the CVA capital charge** | **2,680** | **1,091** | **2,547** | **1,078** |

The capital requirement for adjustment of the credit valuation as at December 31, 2020 varied only slightly from the requirement as at June 30, 2020.

### 6.8.2.3 Exposures to central counterparties

(ARTICLE 439 LETTERS E AND F CRR)

Specific information about credit risk arising from derivatives with central counterparties (CCPs) and associated exposures are shown in Fig. 69, which provides a comprehensive picture of the DZ BANK banking group's exposures.

FIG. 69 – EU CCR8 – EXPOSURES TO CCPS

| | | a | b | a | b |
|---|---|---|---|---|---|
| | | Dec. 31, 2020 | | Jun. 30, 2020 | |
| € million | | EAD after credit risk mitigation | RWAs | EAD after credit risk mitigation | RWAs |
| **1** | **Total exposures to qualified CCPs** | | **375** | | **248** |
| 2 | Exposures for trades at qualified CCPs (excluding initial margin and default fund contributions); of which: | 6,524 | 64 | 9,065 | 61 |
| 3 | i) OTC derivatives | 2,143 | 33 | 2,169 | 30 |
| 4 | ii) Exchange-traded derivatives | 1,479 | 27 | 1,090 | 19 |
| 5 | iii) Securities financing transactions | 2,901 | 4 | 5,806 | 11 |
| 6 | iv) Netting sets where cross-product netting has been approved | - | - | - | - |
| 7 | Segregated initial margin | - | | - | |
| 8 | Non-segregated initial margin | 97 | 2 | 157 | 3 |
| 9 | Prefunded default fund contributions | 284 | 309 | 377 | 184 |
| 10 | Alternative calculation of capital requirements for exposures | | - | | - |
| **11** | **Total exposures to non-qualified CCPs** | | **-** | | **41** |
| 12 | Exposures for trades at non-qualified CCPs (excluding initial margin and default fund contributions); of which: | - | - | 41 | 41 |
| 13 | i) OTC derivatives | - | - | 41 | 41 |
| 14 | ii) Exchange-traded derivatives | - | - | - | - |
| 15 | iii) Securities financing transactions | - | - | - | - |
| 16 | iv) Netting sets where cross-product netting has been approved | - | - | - | - |
| 17 | Segregated initial margin | - | | - | |
| 18 | Non-segregated initial margin | - | - | - | - |
| 19 | Prefunded default fund contributions | - | - | - | - |
| 20 | Unfunded default fund contributions | - | - | - | - |

As at the reporting date, the exposures to qualifying central counterparties were higher than at June 30, 2020 due to increased risk-weighted assets for EUREX's default fund.

### 6.8.3 Counterparty credit risk exposures: Standardized Approach

(ARTICLE 444 SENTENCE 1 LETTER E IN CONJUNCTION WITH ARTICLE 92 SENTENCE 3 LETTER F CRR)

Fig. 70 shows the counterparty credit risk exposures after credit risk mitigation, broken down by portfolio (type of counterparty) and risk weight (risk content attributed according to the Standardized Approach).

FIG. 70 – EU CCR3 – STANDARDIZED APPROACH – COUNTERPARTY CREDIT RISK EXPOSURES BY REGULATORY PORTFOLIO AND RISK[1]

| € million | | Risk weight (%) | | | | | | | | | | | Total | of which: unrated |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Exposure class | 0 | 2 | 4 | 10 | 20 | 50 | 70 | 75 | 100 | 150 | Other | | |
| 1 | Central governments or central banks | 107 | - | - | - | 1 | 0 | - | - | - | - | - | 108 | 24 |
| 2 | Regional governments or local authorities | 308 | - | - | - | 8 | - | - | - | - | - | - | 316 | 308 |
| 3 | Public-sector entities | 286 | - | - | - | - | - | - | - | - | - | - | 286 | 197 |
| 4 | Multilateral development banks | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 5 | International | 1 | - | - | - | - | - | - | - | - | - | - | 1 | 1 |
| 6 | Institutions | 4,326 | - | - | - | 9 | 7 | - | - | - | - | - | 4,342 | 3,836 |
| 7 | Corporates | - | - | - | - | 217 | 11 | - | - | 984 | 0 | 0 | 1,212 | 980 |
| 8 | Retail business | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 9 | Institutions and corporates with a short-term credit assessment | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 10 | Other items | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 11 | Secured by mortgages on immovable property | - | - | - | - | - | 1 | - | - | - | - | - | 1 | 1 |
| 12 | Exposures in default | - | - | - | - | - | - | - | - | 4 | 0 | - | 4 | 4 |
| 13 | Exposures associated with particularly high risk | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 14 | Covered bonds | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 15 | Collective investment undertakings (CIUs) | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 16 | Equity exposures | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **17** | **Total as at Dec. 31, 2020** | **5,028** | **-** | **-** | **-** | **235** | **19** | **-** | **-** | **988** | **0** | **0** | **6,270** | **5,351** |
| 17 | Total as at Jun. 30, 2020 | 4,472 | - | - | - | 247 | 6 | - | - | 1,170 | - | - | 5,896 | 5,638 |

[1] Restatement of the figures as at June 30, 2020 (now including SFTs).

The increase in the total exposure compared with June 30, 2020 was primarily attributable to the institutions and corporates exposure classes. While this rise was due to the growth of business with these customer groups, the changes between the reporting dates of June 30, 2020 and December 31, 2020 in the other exposure classes were the result of fluctuation within the normal range.

### 6.8.4 Counterparty credit risk exposures: IRB approach

(ARTICLE 452 SENTENCE 1 LETTER E IN CONJUNCTION WITH ARTICLE 92 SENTENCE 3 LETTER F CRR)

Fig. 71 and Fig. 72 show key parameters used to calculate the capital requirements for counterparty credit risk in the IRB models.

FIG. 71 – EU CCR4 – FIRB APPROACH – COUNTERPARTY CREDIT RISK EXPOSURES BY PORTFOLIO AND PD SCALE

| € million (unless indicated otherwise) | a | b | c | d | e | f | g |
|---|---|---|---|---|---|---|---|
| **PD scale by exposure class** | **EAD after credit risk mitigation** | **Ø PD (%)** | **Number of borrowers** | **Ø LGD (%)** | **Ø maturity (days)** | **RWAs** | **RWA density (%)** |
| **Central governments and central banks** | | | | | | | |
| 0.00 to < 0.15 | 98 | 0.01 | 4 | 45.00 | 900 | 8 | 7.98 |
| 0.15 to < 0.25 | 39 | 0.15 | 1 | 45.00 | 900 | 15 | 39.67 |
| 0.25 to < 0.50 | - | - | - | - | - | - | - |
| 0.50 to < 0.75 | 114 | 0.50 | 1 | 45.00 | 900 | 2 | 2.06 |
| 0.75 to < 2.50 | 0 | 1.10 | 1 | 45.00 | 900 | 0 | 101.19 |
| 2.50 to < 10.00 | - | - | - | - | - | - | - |
| 10.00 to < 100.00 | - | - | - | - | - | - | - |
| 100.00 (default) | - | - | - | - | - | - | - |
| **Subtotal** | **250** | **0.05** | **7** | **45.00** | **900** | **26** | **10.25** |
| **Institutions** | | | | | | | |
| 0.00 to < 0.15 | 3,987 | 0.06 | 121 | 32.19 | 900 | 634 | 15.91 |
| 0.15 to < 0.25 | 1,889 | 0.19 | 52 | 36.54 | 900 | 284 | 15.03 |
| 0.25 to < 0.50 | 334 | 0.35 | 19 | 30.23 | 900 | 154 | 46.18 |
| 0.50 to < 0.75 | 472 | 0.50 | 13 | 13.90 | 900 | 92 | 19.57 |
| 0.75 to < 2.50 | 19 | 1.18 | 17 | 18.14 | 900 | 8 | 41.57 |
| 2.50 to < 10.00 | 2 | 5.40 | 6 | 29.43 | 900 | 1 | 57.16 |
| 10.00 to < 100.00 | - | - | - | - | - | - | - |
| 100.00 (default) | - | - | - | - | - | - | - |
| **Subtotal** | **6,703** | **0.14** | **228** | **31.63** | **900** | **1,174** | **17.51** |
| **Corporates** | | | | | | | |
| 0.00 to < 0.15 | 505 | 0.02 | 106 | 21.82 | 474 | 111 | 21.96 |
| 0.15 to < 0.25 | 250 | 0.18 | 179 | 40.65 | 822 | 122 | 48.91 |
| 0.25 to < 0.50 | 121 | 0.34 | 106 | 43.25 | 865 | 77 | 63.65 |
| 0.50 to < 0.75 | 75 | 0.50 | 116 | 44.87 | 897 | 54 | 72.30 |
| 0.75 to < 2.50 | 286 | 0.83 | 310 | 32.04 | 642 | 292 | 102.23 |
| 2.50 to < 10.00 | 50 | 3.70 | 107 | 44.47 | 900 | 67 | 132.96 |
| 10.00 to < 100.00 | 0 | 30.00 | 2 | 45.00 | 900 | 0 | 263.75 |
| 100.00 (default) | 46 | 100.00 | 19 | 44.99 | 900 | - | - |
| **Subtotal** | **1,333** | **3.84** | **945** | **32.43** | **665** | **724** | **54.30** |
| **of which: SMEs** | | | | | | | |
| 0.00 to < 0.15 | 1 | 0.10 | 3 | 45.00 | 900 | 0 | 24.12 |
| 0.15 to < 0.25 | 9 | 0.21 | 49 | 45.00 | 900 | 3 | 36.11 |
| 0.25 to < 0.50 | 2 | 0.35 | 28 | 45.00 | 900 | 1 | 45.85 |
| 0.50 to < 0.75 | 6 | 0.50 | 34 | 45.00 | 900 | 3 | 51.59 |
| 0.75 to < 2.50 | 27 | 1.31 | 102 | 44.20 | 900 | 21 | 77.93 |
| 2.50 to < 10.00 | 11 | 4.07 | 49 | 45.00 | 900 | 12 | 107.27 |
| 10.00 to < 100.00 | - | - | - | - | - | - | - |
| 100.00 (default) | - | - | - | - | - | - | - |
| **Subtotal** | **56** | **1.54** | **265** | **44.62** | **900** | **40** | **71.99** |
| **of which: specialized** | | | | | | | |
| 0.00 to < 0.15 | 2 | 0.10 | 1 | 45.00 | 900 | 1 | 31.43 |
| 0.15 to < 0.25 | 5 | 0.23 | 1 | 45.00 | 900 | 3 | 50.17 |
| 0.25 to < 0.50 | - | - | - | - | - | - | - |
| 0.50 to < 0.75 | - | - | - | - | - | - | - |
| 0.75 to < 2.50 | - | - | - | - | - | - | - |
| 2.50 to < 10.00 | - | - | - | - | - | - | - |

| € million (unless indicated otherwise) | a | b | c | d | e | f | g |
|---|---|---|---|---|---|---|---|
| PD scale by exposure class | EAD after credit risk mitigation | Ø PD (%) | Number of borrowers | Ø LGD (%) | Ø maturity (days) | RWAs | RWA density (%) |
| 10.00 to < 100.00 | - | - | - | - | - | - | - |
| 100.00 (default) | 17 | 100.00 | 6 | 44.98 | 900 | - | - |
| **Subtotal** | **24** | **70.79** | **8** | **44.98** | **900** | **3** | **13.32** |
| **of which: other** | | | | | | | |
| 0.00 to < 0.15 | 502 | 0.05 | 102 | 41.36 | 900 | 110 | 21.92 |
| 0.15 to < 0.25 | 235 | 0.20 | 129 | 44.49 | 900 | 116 | 49.38 |
| 0.25 to < 0.50 | 119 | 0.35 | 78 | 45.00 | 900 | 76 | 63.98 |
| 0.50 to < 0.75 | 70 | 0.50 | 82 | 45.00 | 900 | 51 | 73.98 |
| 0.75 to < 2.50 | 259 | 1.13 | 208 | 45.00 | 900 | 272 | 104.71 |
| 2.50 to < 10.00 | 39 | 3.59 | 58 | 44.32 | 900 | 55 | 140.47 |
| 10.00 to < 100.00 | 0 | 30.00 | 2 | 45.00 | 900 | 0 | 263.75 |
| 100.00 (default) | 29 | 100.00 | 13 | 45.00 | 900 | - | - |
| **Subtotal** | **1,253** | **3.69** | **672** | **43.79** | **900** | **680** | **54.29** |
| **Long-term equity** | | | | | | | |
| 0.00 to < 0.15 | 2 | 0.09 | 6 | 90.00 | 1,800 | 2 | 96.45 |
| 0.15 to < 0.25 | - | - | - | - | - | - | - |
| 0.25 to < 0.50 | - | - | - | - | - | - | - |
| 0.50 to < 0.75 | - | - | - | - | - | - | - |
| 0.75 to < 2.50 | 0 | 0.75 | 1 | 90.00 | 1,800 | 0 | 241.04 |
| 2.50 to < 10.00 | - | - | - | - | - | - | - |
| 10.00 to < 100.00 | - | - | - | - | - | - | - |
| 100.00 (default) | - | - | - | - | - | - | - |
| **Subtotal** | **2** | **0.09** | **7** | **90.00** | **1,800** | **2** | **96.89** |
| **Total (all portfolios) as at Dec. 31, 2020** | **8,289** | **1.10** | **1,187** | **34.35** | **900** | **1,925** | **32.67** |
| Total (all portfolios) as at Jun. 30, 2020 | 5,030 | 0.28 | 1,231 | 34.93 | 900 | 1,673 | 33.27 |

Securities financing transactions (SFTs) were presented within counterparty credit risk for the first time as at December 31, 2020. They had previously been assigned to credit risk. As a result, there was a significant increase in the institutions exposure class. The reclassification also led to a general rise in risk-weighted assets.

FIG. 72 – EU CCR4 – AIRB APPROACH – COUNTERPARTY CREDIT RISK EXPOSURES BY PORTFOLIO AND PD SCALE

| € million (unless indicated otherwise) | a | b | c | d | e | f | g |
|---|---|---|---|---|---|---|---|
| PD scale by exposure class | EAD after credit risk mitigation | Ø PD (%) | Number of borrowers | Ø LGD (%) | Ø maturity (days) | RWAs | RWA density (%) |
| **Central governments and central banks** | | | | | | | |
| 0.00 to < 0.15 | - | - | - | - | - | - | - |
| 0.15 to < 0.25 | - | - | - | - | - | - | - |
| 0.25 to < 0.50 | - | - | - | - | - | - | - |
| 0.50 to < 0.75 | - | - | - | - | - | - | - |
| 0.75 to < 2.50 | - | - | - | - | - | - | - |
| 2.50 to < 10.00 | - | - | - | - | - | - | - |
| 10.00 to < 100.00 | - | - | - | - | - | - | - |
| 100.00 (default) | - | - | - | - | - | - | - |
| Subtotal | - | - | - | - | - | - | - |
| **Institutions** | | | | | | | |
| 0.00 to < 0.15 | - | - | - | - | - | - | - |
| 0.15 to < 0.25 | - | - | - | - | - | - | - |
| 0.25 to < 0.50 | - | - | - | - | - | - | - |
| 0.50 to < 0.75 | - | - | - | - | - | - | - |

| € million (unless indicated otherwise) | a | b | c | d | e | f | g |
|---|---|---|---|---|---|---|---|
| PD scale by exposure class | EAD after credit risk mitigation | Ø PD (%) | Number of borrowers | Ø LGD (%) | Ø maturity (days) | RWAs | RWA density (%) |
| 0.75 to < 2.50 | - | - | - | - | - | - | - |
| 2.50 to < 10.00 | - | - | - | - | - | - | - |
| 10.00 to < 100.00 | - | - | - | - | - | - | - |
| 100.00 (default) | - | - | - | - | - | - | - |
| Subtotal | - | - | - | - | - | - | - |
| **Retail - Secured by real estate SME** | | | | | | | |
| 0.00 to < 0.15 | - | - | - | - | - | - | - |
| 0.15 to < 0.25 | - | - | - | - | - | - | - |
| 0.25 to < 0.50 | - | - | - | - | - | - | - |
| 0.50 to < 0.75 | - | - | - | - | - | - | - |
| 0.75 to < 2.50 | - | - | - | - | - | - | - |
| 2.50 to < 10.00 | - | - | - | - | - | - | - |
| 10.00 to < 100.00 | - | - | - | - | - | - | - |
| 100.00 (default) | - | - | - | - | - | - | - |
| Subtotal | | | | | | | |
| **Retail - Secured by real estate non- SME** | | | | | | | |
| 0.00 to < 0.15 | - | - | - | - | - | - | - |
| 0.15 to < 0.25 | - | - | - | - | - | - | - |
| 0.25 to < 0.50 | - | - | - | - | - | - | - |
| 0.50 to < 0.75 | - | - | - | - | - | - | - |
| 0.75 to < 2.50 | - | - | - | - | - | - | - |
| 2.50 to < 10.00 | - | - | - | - | - | - | - |
| 10.00 to < 100.00 | - | - | - | - | - | - | - |
| 100.00 (default) | - | - | - | - | - | - | - |
| Subtotal | - | - | - | - | - | - | - |
| **Retail - Qualifying revolving** | | | | | | | |
| 0.00 to < 0.15 | - | - | - | - | - | - | - |
| 0.15 to < 0.25 | - | - | - | - | - | - | - |
| 0.25 to < 0.50 | - | - | - | - | - | - | - |
| 0.50 to < 0.75 | - | - | - | - | - | - | - |
| 0.75 to < 2.50 | - | - | - | - | - | - | - |
| 2.50 to < 10.00 | - | - | - | - | - | - | - |
| 10.00 to < 100.00 | - | - | - | - | - | - | - |
| 100.00 (default) | - | - | - | - | - | - | - |
| Subtotal | - | - | - | - | - | - | - |
| **Retail– other SMEs** | | | | | | | |
| 0.00 to < 0.15 | - | - | - | - | - | - | - |
| 0.15 to < 0.25 | - | - | - | - | - | - | - |
| 0.25 to < 0.50 | - | - | - | - | - | - | - |
| 0.50 to < 0.75 | - | - | - | - | - | - | - |
| 0.75 to < 2.50 | - | - | - | - | - | - | - |
| 2.50 to < 10.00 | - | - | - | - | - | - | - |
| 10.00 to < 100.00 | - | - | - | - | - | - | - |
| 100.00 (default) | - | - | - | - | - | - | - |
| Subtotal | - | - | - | - | - | - | - |

| € million (unless indicated otherwise) | a | b | c | d | e | f | g |
|---|---|---|---|---|---|---|---|
| PD scale by exposure class | EAD after credit risk mitigation | Ø PD (%) | Number of borrowers | Ø LGD (%) | Ø maturity (days) | RWAs | RWA density (%) |
| **Other non-credit-obligation assets** | | | | | | | |
| 0.00 to < 0.15 | - | - | - | - | - | - | - |
| 0.15 to < 0.25 | - | - | - | - | - | - | - |
| 0.25 to < 0.50 | - | - | - | - | - | - | - |
| 0.50 to < 0.75 | - | - | - | - | - | - | - |
| 0.75 to < 2.50 | - | - | - | - | - | - | - |
| 2.50 to < 10.00 | - | - | - | - | - | - | - |
| 10.00 to < 100.00 | - | - | - | - | - | - | - |
| 100.00 (default) | - | - | - | - | - | - | - |
| Subtotal | - | - | - | - | - | - | - |
| **Total (all portfolios) as at Dec. 31, 2020** | **2** | **50.63** | **4** | **31.78** | **989** | **0** | **4.98** |
| Total (all portfolios) as at Jun. 30, 2020 | 4 | 36.72 | 7 | 21.83 | 1,070 | 1 | 17.43 |

The change shown in Fig. 72 in the total exposure compared with June 30, 2020 was primarily attributable to the corporates exposure class. The change in the risk-weighted assets compared with June 30, 2020 was insignificant.

### 6.8.5 Further information on counterparty credit risk

(ARTICLE 439 SENTENCE 1 LETTERS E, G, AND H CRR)

#### 6.8.5.1 Impact of netting and collateral held on exposure values

(ARTICLE 439 LETTER E CRR)

Fig. 73 shows the aggregate derivative counterparty risk exposure in the banking book and trading book in the form of positive fair values before and after the offsetting of net derivatives exposures and collateral. Exposures that are processed directly via a central counterparty (clearing house) are not shown. The table therefore primarily shows listed derivatives that are traded via an intermediary, such as a broker, and OTC derivatives.

FIG. 73 – EU CCR5-A – IMPACT OF NETTING AND COLLATERAL HELD ON EXPOSURE VALUES

| | | a | b | c | d | e |
|---|---|---|---|---|---|---|
| € million | | Gross positive fair value or net carrying amount | Netting benefits | Netted current credit exposure | Collateral held | Net credit exposure |
| 1 | Derivatives | 50,989 | 40,458 | 10,531 | 5,462 | 5,069 |
| 2 | Securities financing | - | - | - | - | - |
| 3 | Cross-product netting | - | - | - | - | - |
| **4** | **Total as at Dec. 31, 2020** | **50,989** | **40,458** | **10,531** | **5,462** | **5,069** |
| | Total as at Jun. 30, 2020 | 55,151 | 44,971 | 10,181 | 5,093 | 5,088 |

The change in the gross positive fair value over the second half of 2020 was due to normalizing market conditions following the outbreak of COVID-19. This also had an impact on netting. The table above therefore shows a moderate decrease in the net credit exposure.

### 6.8.5.2 Composition of collateral for exposures subject to counterparty credit risk
(ARTICLE 439 LETTER E CRR)

Fig. 74 provides a breakdown for all types of collateral (cash collateral, sovereign debt, corporate bonds, etc.) posted or received by DZ BANK or the DZ BANK banking group in order to reduce counterparty credit risk related to derivatives transactions or securities financing transactions, including transactions cleared through a central counterparty.

FIG. 74 – EU CCR5-B – COMPOSITION OF COLLATERAL FOR EXPOSURES TO COUNTERPARTY CREDIT RISK

| | a | b | c | d | e | f |
|---|---|---|---|---|---|---|
| | Collateral used in derivatives transactions | | | | Collateral used in securities financing transactions | |
| | Fair value of collateral received | | Fair value of collateral posted | | Fair value of collateral received | Fair value of collateral posted |
| € million | Segregated | Unsegregated | Segregated | Unsegregated | | |
| Derivatives | - | 5,402 | 4,354 | 6,493 | - | - |
| of which: cash collateral | - | 5,101 | 4,354 | 6,493 | - | - |
| of which: bonds of domestic borrowers | - | 53 | - | - | - | - |
| of which: bonds of foreign borrowers | - | 23 | - | - | - | - |
| of which: other bonds | - | 80 | - | - | - | - |
| of which: long-term equity investments | - | 145 | - | - | - | - |
| of which: other collateral | - | - | - | - | - | - |
| Securities financing transactions | - | - | - | - | - | - |
| Cross-product netting | - | - | - | - | - | - |
| **Total as at Dec. 31, 2020** | **-** | **5,402** | **4,354** | **6,493** | **-** | **-** |
| Total as at Jun. 30, 2020 | - | 5,332 | 3,829 | 6,677 | - | - |

The changes in value presented in Fig. 74 were due to normal market fluctuation in the second half of 2020.

### 6.8.5.3 Exposures secured by credit derivatives
(ARTICLE 439 LETTERS G AND H CRR)

Fig. 75 shows the notional amounts of credit derivatives bought and sold, broken down by type of credit derivative. As had been the case at the end of previous reporting periods, no credit derivatives from the intermediary operations of DZ BANK banking group entities were held as at December 31, 2020.

FIG. 75 – EU CCR6 – CREDIT DERIVATIVES EXPOSURES

| | a | b | c | d |
|---|---|---|---|---|
| | Credit derivative hedges | | Other credit derivatives | Intermediary operations |
| **€ million** | **Protection bought** | **Protection sold** | | |
| **Notionals** | | | | |
| Single-name credit default swaps | - | - | 17,496 | - |
| Index credit default swaps | - | - | - | - |
| Total return swaps | - | - | 38 | - |
| Credit options | - | - | - | - |
| Other credit derivatives | - | - | 11,040 | - |
| **Total notionals as at Dec. 31, 2020** | **-** | **-** | **28,574** | **-** |
| Total notionals as at Jun. 30, 2020 | - | - | 28,728 | - |
| **Fair values** | | | | |
| Positive fair values (assets) | - | - | 348 | - |
| Negative fair values (equity and liabilities) | - | - | -91 | - |
| **Total fair value as at Dec. 31, 2020** | **-** | **-** | **257** | **-** |
| Total fair value as at Jun. 30, 2020 | - | - | 172 | - |

The notionals for the exposures secured by credit derivatives decreased slightly as a result of normal business activity in the DZ BANK banking group.

# 7 Securitizations

## 7.1 Scope, objectives, and risks of securitization

(ARTICLE 449 SENTENCE 1 LETTERS A, D, E, AND I CRR)

The securitization activities of the DZ BANK banking group comprise not only funding activities in asset-backed commercial paper (ABCP) programs but also investing, trading, and funding activities involving asset-backed securities (ABSs). In the first half of 2017, DZ BANK opened up its credit risk strategy to new investments in ABSs, albeit with significant restrictions, in order to give itself greater flexibility when investing in high-quality liquid assets (HQLAs). Investing activities continue to include the legacy portfolios of investor-related exposures dating back to the period prior to the financial crisis. As before, ABSs are held as part of trading activities in order to pass on exposures within a short period of time and funding activities are still carried out for selected customers.

As a sponsor, DZ BANK uses special-purpose entities, which are funded by issuing money market-linked ABCP. The ABCP programs are made available for DZ BANK customers who then securitize assets via these companies. In these programs, the customers sell assets to a separate special-purpose entity, the consideration normally including a purchase price reduction. The purchase of the assets is funded by issuing money market-linked ABCP and using liquidity lines of DZ BANK. The redemption of the ABCP is covered by the asset pool in the program. The contractual structure of the transactions ensures that the assets are not included in the asset seller's insolvency proceedings.

DZ BANK is deemed a sponsor of securitizations in accordance with the EU Securitization Regulation (Regulation (EU) 2017/2402 of the European Parliament and of the Council dated December 12, 2017).

The CORAL ABCP program has been set up to provide securitization of assets predominantly from European entities. This program is funded by liquidity lines and by the issuance of ABCP. DZ BANK is also the sponsor of the AUTOBAHN ABCP program, which offers securitization for assets from North American customers and is funded by ABCP issues and liquidity lines.

In addition, DZ BANK operates a program for purchasing commercial customer assets that are recognized on the balance sheet. The master agreements for this program are designed such that division of the credit risk into two or more tranches is agreed between the seller of the assets and DZ BANK at the moment that the assets are purchased.

DZ BANK's investor-related exposures are assigned to the banking book, and to a lesser extent to the trading book, and are actively managed with the aim of optimizing the portfolio, risk, and own funds.

Fig. 76 provides an overview of DZ BANK's securitization activities as sponsor in accordance with article 449 sentence 1 letter i CRR. The DZ BANK banking group no longer acts as an originator and, at the moment, does not plan to do so in the future.

FIG. 76 – SECURITIZATION EXPOSURES AS ORIGINATOR AND SPONSOR

| Entity / transaction | Type of transaction | Role | Purpose of transaction | Type of assets | Volume | | Retained exposures | |
|---|---|---|---|---|---|---|---|---|
| € million | | | | | Dec. 31, 2020 | Dec. 31, 2019 | Dec. 31, 2020 | Dec. 31, 2019 |
| **DZ BANK** | | | | | | | | |
| CORAL | ABCP conduit | Sponsor | Generation of commission income | Predominantly loans and advances to European corporates | 2,497 | 2,113 | Commitments of 2,497, of which 1,476 has been utilized | Commitments of 2,113, of which 1,310 has been utilized |
| AUTOBAHN | ABCP conduit | Sponsor | Generation of commission income | Loans and advances to North American customers | 2,239 | 1,853 | Commitments of 2,239, of which 228 has been utilized | Commitments of 1,853, of which 131 has been utilized |
| Purchase of assets | Purchase for the bank's balance sheet | Sponsor | Generation of commission income | Loans and advances predominantly to German customers | 317 | 320 | Commitments of 317, of which 279 has been utilized | Commitments of 320, of which 320 has been utilized |

In accordance with article 449 sentence 1 letter i CRR, DZ BANK does not advise or manage any other entities that are invested in securitization exposures originated by the DZ BANK banking group or by special-purpose entities sponsored by DZ BANK.

DZ BANK also acts as a counterparty for interest-rate swaps within securitizations. To this end, DZ BANK generally enters into a receiver interest-rate swap with the special-purpose entity in order to protect the entity against interest-rate risk. The notional amount of the interest-rate swap is adjusted to the notional amount of the securitized assets on an ongoing basis. A (countervailing) payer interest-rate swap is entered into with the originator, whereby the risk of early repayment attaching to the securitized assets is transferred to the originator. DZ BANK also enters into interest-rate swaps with ABCP conduits and with upstream special-purpose entities set up by customers without an offsetting position. The notional amounts of these swaps are not adjusted on an ongoing basis.

## 7.2 Risk management in respect of securitizations

(ARTICLE 449 SENTENCE 1 LETTERS B, C, F, AND G CRR)

### 7.2.1 Overview

Exposures to ABSs, which constitute investor-related exposures within the meaning of the CRR, are managed by DZ BANK and DZ HYP and are subject to the groupwide risk management standards. One of the requirements in these standards is that securitization exposures are analyzed individually and have separate limits.

The structure of transactions is analyzed and the external credit ratings awarded by the rating agencies are validated as part of a defined process. Furthermore, all ABS asset classes at DZ BANK are subjected to an annual portfolio analysis process that assesses the macroeconomic and asset-class-specific risks involved.

At sectoral level, portfolio risk exposures are included each quarter in the credit risk report submitted to the credit risk management function and to DZ BANK's Board of Managing Directors. This reporting process covers the total exposure and provides the basis for managing the risks incurred from structured products.

Securitization exposures that are not held so that they can be passed on within a short period of time are monitored regardless of whether they are assigned to the banking book or the trading book and regardless of whether DZ BANK is acting as the investor or counterparty in an interest-rate swap. Besides continuous monitoring of external credit ratings, exposures are classified on a quarterly basis using stress tests specific to each asset class. A particular feature of the tests is that factors such as payment delays, defaults, and degree of loss are balanced against the existing credit enhancements in each transaction. If an exposure does not pass a stress test, the expected loss is determined using a model particular to the asset class concerned.

The credit risk arising in connection with the transactions in the ABCP programs and senior exposures in the asset purchase program is monitored using performance reports prepared at least monthly by the asset seller. The purchased assets are generally subject to regular due diligence in the form of random sample tests.

Re-securitizations are structures in which the securitized exposure in turn comprises one or more other securitization exposures. Re-securitization exposures are monitored in much the same way as other asset classes. Expected losses on these exposures are modeled using portfolio models from rating agencies that particularly factor in the range of ratings in the securitized portfolio and the assumptions made by the agencies with regard to the extent of losses and industry correlations. When modeling the expected losses, DZ HYP looks through the securitized portfolio.

The economic stress tests encompass both the credit risk and the spread risk arising from the Bank sector's entire securitization exposure.

### 7.2.2 Managing credit risk arising from securitizations

Credit risk in connection with securitizations in the banking book arises primarily from investments in securitizations and the provision of liquidity facilities for ABCP and senior exposures in the asset purchase program.

The liquidity facilities provided as part of the ABCP programs and senior exposures in the asset purchase program are managed in the banking book. The resulting risk largely depends on the quality of the asset pool.

In the context of the portfolio as a whole, the re-securitization exposures and related risks are of minor significance.

### 7.2.3 Managing market risk arising from securitizations

For the purposes of internal management, market risk associated with securitizations (for example, interest-rate risk, spread risk, or currency risk) is included in DZ BANK and DZ HYP's internal market risk models, regardless of whether the securitizations are posted in the banking book or the trading book. The regulatory capital requirement for general price risk is also calculated for securitizations in DZ BANK's trading book using the internal model.

At DZ BANK, the risk exposure arising from securitizations in the banking book and the trading book forms an integral part of the daily market risk report and is reflected in the values used for the weekly stress scenario calculations for market risk.

In the case of securitizations, extreme scenarios are also simulated for the weighted Ø lifetime and recovery assumptions. DZ HYP holds all securitizations in its banking book. They are included in the daily measurement of market risk and in reporting.

### 7.2.4 Managing other risk arising from securitizations

In addition to credit risk and market risk, the securitization activities of the DZ BANK banking group also give rise to liquidity risk and operational risk. These risks form an integral part of the group's standard risk management system. Disclosures related to these risks have been included in the relevant sections of the commercial-law risk report, as follows:

– Liquidity risk management:
  section 2.1.2 (page 73) and section 4.2.5 (pages 100 and 101) in the commercial-law risk report
– Operational risk management:
  section 12.4 (pages 160 and 161) in the commercial-law risk report.

### 7.2.5 Risk mitigation

In ABCP programs managed exclusively in the banking book, the risk arising from some of the purchased asset portfolios is covered by credit insurance in addition to the discount on the purchase price already referred to above.

As the DZ BANK banking group has no securitization exposures where it acts as originator, which means no hedging operations are necessary, this risk report does not contain any disclosures pursuant to article 449 letter g CRR.

## 7.3 Accounting policies applied to securitizations

### 7.3.1 Recognition methods

(ARTICLE 449 SENTENCE 1 LETTER J (I), (III), (IV), AND (VI) CRR)

The accounting treatment of securitizations does not distinguish between the regulatory categories of banking book and trading book. As required by IFRS 9, the DZ BANK banking group's investor exposures are either held in the 'hold to collect' or 'hold to collect and sell' business models or held in the trading book. In general, the holding of debt instruments results in measurement at amortized cost (AC), whereas in the 'hold to collect and sell' business model it leads to measurement at fair value through other comprehensive income (FVOCI). Exercise of the fair value option and assignment to the trading book both result in measurement at fair value through profit or loss (FVTPL).

Drawn liquidity facilities are recognized as loans and advances to customers and measured at amortized cost. Purchased commercial customer assets are recognized as loans and advances to customers and measured at amortized cost. Redemptions and loss allocations during the term to maturity are recognized in accordance with the agreed division into tranches. Undrawn liquidity facilities and loan guarantees are not recognized on the balance sheet; if they give rise to any imminent risks, loss allowances are determined in accordance with IFRS 9 and recognized as provisions in the amount of the expected loss in accordance with IAS 37. Derivative instruments such as swaps that are used to hedge interest-rate or currency risks are assigned to the trading book in accordance with IFRS 9 and measured at fair value.

The special-purpose entities involved in the ABCP programs are unconsolidated structured entities. According to IFRS 10, an investor controls an entity and must consolidate the entity if the investor directs relevant activities, is exposed to variable returns from its involvement, and has the ability to affect those returns through its power over the investee. As at December 31, 2020, the DZ BANK banking group did not exercise control as defined in IFRS 10 over the special-purpose entities involved in the ABCP programs.

Legal asset sales – which are known as true-sale securitizations – are derecognized from the balance sheet to the extent that the opportunities and risks arising from the asset portfolio have been transferred to the buyer. There are currently no true-sale securitizations that have been originated by an entity in the DZ BANK banking group. Consequently, no gains on sale are recognized.

There are no liabilities arising from obligations to support securitized assets.

### 7.3.2 Measurement methods

(ARTICLE 449 SENTENCE 1 LETTER J (II) AND (V) CRR)

Last year, the European securitization market was affected by the coronavirus pandemic and the extensive measures taken to contain it. Lockdowns brought much of Europe to a temporary standstill, with economic activity tailing off on an unprecedented scale and at an unprecedented rate. Politicians in the eurozone reacted quickly to the coronavirus crisis at both national and supranational level. The ECB also responded promptly, taking extraordinary measures with regard to monetary policy and regulatory requirements in order to soften the economic shock for the eurozone and safeguard the supply of liquidity for banks and companies. Although the fiscal stimulus packages and monetary policy support measures helped to ward off a severe recession in the eurozone and a sharp increase in unemployment, they were unable to prevent them entirely in 2020. The pandemic and ensuing lockdowns did not leave the real estate markets and house prices in Europe unscathed either. Nonetheless, the Ø price increase in selected European countries that are relevant from a securitization perspective was approximately 2.2 percent in the first half of 2020. The coronavirus crisis therefore did not lead to the feared collapse of residential property prices, and certainly not on the huge scale seen in the preceding global financial crisis. In contrast to the housing markets, however, the markets for commercial real estate faced much greater economic challenges as a result of the pandemic. The sectors hit particularly hard by containment measures, such as retail and shopping malls, experienced falling rental yields and decreases in the capital value of commercial properties.

In these difficult conditions, the European securitization market saw new issues totaling €218.4 billion in 2020, a year-on-year fall of around 2.4 percent. However, the volume placed with investors was just €78.5 billion, which was down by €42.2 billion or 35.1 percent compared with 2019. Whereas the volume issued in the first quarter of 2020 was a substantial 44 percent higher than in the same quarter of 2019, the volumes in the second and fourth quarters of 2020 – which tend to see higher volumes – declined year on year, in some cases significantly. In the secondary market, the shock from the coronavirus crisis caused a noticeable divergence in the widening of spreads in the various ABS segments, which reached their high points in March. Thereafter, a general narrowing of spreads was observable that continued until the end of 2020. However, the degree to which spreads narrowed varied depending on how affected the segment was by the pandemic. As at the end of 2020, ABS spreads had nonetheless widened by an Ø of around 38 basis points, or approximately 76.2 percent, compared with their level at the start of the year. Unlike other bond markets, the Ø level of ABS spreads was thus significantly higher than their pre-coronavirus level in February. The only ABS segment to buck the trend was UK prime residential mortgage-backed securities (RMBSs), which saw spreads narrow by an Ø of around 9.5 basis points, or 17.4 percent, compared with their level at the start of 2020.

Assessing the collateral performance of European securitizations was made more difficult in 2020 due to the introduction of moratoria – mainly legislative – in many EU countries. These were designed to tackle the economic fallout from COVID-19 by providing temporary protection for borrowers who were finding it difficult to make payments as a result of the pandemic. Further regulatory intervention took place in a number of countries, for example suspension of the obligation to apply for insolvency in certain circumstances. The actual default and insolvency situation in terms of collateral for European securitizations was therefore clouded by these measures and the reported performance data offers limited information. A significant rise in default and loss rates is feared when the forbearance periods end in 2021. In this context, the rating agencies are reviewing the credit ratings of European securitizations on an ongoing basis, but the ratings have shown themselves to be resilient to the macroeconomic impact of the coronavirus pandemic so far. The reviews of the credit ratings have resulted in only a limited number of downgrades despite the additional stress assumptions. Reflecting the logic of the tranche system, the credit rating downgrades primarily affected the subordinated non-investment-grade tranches and, in terms of segment, mostly commercial mortgage-backed securities (CMBSs) and collateralized loan obligations (CLOs). The continuing pandemic-related risks, which may lead to further credit rating downgrades in the medium term, were taken into account by giving the individual affected transactions a negative rating outlook.

Securitizations are measured on the basis of externally available market data. The validity of the measurement method used can be verified by regular comparison with the external market prices offered by other market participants. This ensures that an appropriate measurement method based on Level 2 input data in the fair value hierarchy is used to determine the fair value of securitizations.

There are currently no exposures at DZ BANK for which securitization is planned. The valuation methods used for this purpose are therefore not presented in this report.

## 7.4 Regulatory treatment of securitizations

### 7.4.1 Procedure for determining risk-weighted exposures

(ARTICLE 449 SENTENCE 1 LETTER H CRR)

The regulatory treatment of securitizations is based on the provisions of the CRR, amended by Regulation (EU) 2017/2401 of the European Parliament and of the Council dated December 12, 2017.

When calculating the risk-weighted exposures, DZ BANK generally uses the hierarchy of methods pursuant to article 254 (1) and (2) CRR. Because DZ BANK does not apply the Securitization Internal Ratings-based Approach (SEC-IRBA) pursuant to article 258 CRR, this hierarchy of methods specifies that first the Securitization Standardized Approach (SEC-SA) pursuant to article 261 CRR must be applied, then the Securitization External Ratings-Based Approach (SEC-ERBA) pursuant to article 263 CRR, and finally the deduction from common equity Tier 1 capital must be made. The option pursuant to article 254 (3) CRR, which permits the SEC-ERBA instead of the SEC-SA to be used for rated securitization exposures, was no longer used with effect from January 1, 2020 for the 2020 financial year.

For ABCP programs for which no external credit ratings exist, the Internal Assessment Approach (IAA) pursuant to article 265 CRR, which has been tested and approved by the supervisory authority, was the main approach used to determine the risk-weighted exposures in connection with sponsor activities. To a lesser extent, the SEC-SA or SEC-ERBA was used in this context. Transactions that did not meet the conditions for the aforementioned measurement approaches were deducted from common equity Tier 1 capital.

In exercise of the aforementioned option, investor-related exposures in the banking book were subject to the SEC-SA in the first instance, after which SEC-ERBA was applied or a deduction was made from common equity Tier 1 capital.

Pursuant to article 337 (1) CRR, it is a requirement to use the aforementioned regulatory standardized approaches to assess the specific risk of investor-related securitization positions held in the trading book.

A modified Standardized Approach is available for the correlation trading portfolio (CTP) in addition to the Standardized Approach for calculating market risk exposures (recognition of net exposure). For regulatory purposes, only securitizations and nth-to-default credit derivatives must be allocated to the CTP. Under the modified Standardized Approach, the capital requirement for the CTP is always calculated on the basis of the higher of the eligible amounts for long positions or short positions. However, only nth-to-default credit derivatives are currently allocated to the CTP.

### 7.4.2 External ratings

(ARTICLE 449 SENTENCE 1 LETTER K CRR)

During its securitization activities, the DZ BANK banking group uses the classifications prescribed by the rating agencies Standard & Poor's, Moody's, and Fitch for rating the regulatory asset classes listed below. DZ BANK also used the classifications prescribed by DBRS until February 29, 2020.

– Receivables from residential real estate loans
– Lease receivables originated or purchased (retail and commercial)
– Other receivables from retail loans
– Receivables from loans on wholly or partially commercial real estate
– Other receivables from corporates, e.g. from corporate loans.

External credit ratings awarded by these recognized rating agencies are applied to the securitization exposures of the DZ BANK banking group in accordance with the requirements of article 263 CRR (SEC-ERBA). Competing external ratings are included in the calculation of risk-weighted exposures in accordance with article 270d CRR. Section 6.5.1 (pages 122 to 123) and figure 20 (page 123) of the commercial-law risk report show a reconciliation of external and internal ratings and Fig. 77 below shows a reconciliation of external and internal ratings for ABSs.

FIG. 77 – RECONCILIATION OF EXTERNAL AND INTERNAL ABS RATINGS[1]

| External rating | | Asset class | | | | | |
|---|---|---|---|---|---|---|---|
| **S&P** | **Moody's** | **ABSs** | **US RMBSs** | **Non-US RMBSs** | **CMBSs** | **CLOs** | **CDOs (excl. CLOs)** |
| AAA | AAA | 1A | 2D | 1A | 2B | 1C | 3D |
| AA+ | Aa1 | 1A | 2E | 1A | 2C | 1E | 3D |
| AA | Aa2 | 1B | 3B | 1B | 2C | 2B | 3D |
| AA- | Aa3 | 1C | 3B | 1C | 2D | 2C | 3D |
| A+ | A1 | 1E | 3B | 1D | 2E | 2C | 3E |
| A | A2 | 2A | 3C | 1E | 3A | 2D | 3E |
| A- | A3 | 2B | 3D | 2A | 3B | 2E | 3E |
| BBB+ | Baa1 | 2C | 3D | 2B | 3C | 3A | 4A |
| BBB | Baa2 | 2D | 3E | 2C | 3D | 3B | 4A |
| BBB- | Baa3 | 2E | 4A | 2D | 3E | 3C | 4A |
| BB+ | Ba1 | 3A | 4A | 2E | 4A | 3D | 4A |
| BB | Ba2 | 3A | 4B | 3A | 4B | 3E | 4A |
| BB- | Ba3 | 3B | 4C | 3B | 4C | 4A | 4A |
| B+ | B1 | 3C | 4D | 3D | 4C | 4B | 4A |
| B | B2 | 3E | 4D | 3E | 4D | 4C | 4B |
| B- | B3 | 4A | 4E | 4B | 4E | 4D | 4B |
| CCC+ or lower | Caa1 | 4D | 4E | 4E | 4E | 4E | 4C |
| unrated, no default | | 4E | 4E | 4E | 4E | 4E | 4E |

1 The internal credit ratings of the exposures in DZ BANK's internal ABS portfolio are reconciled to the external credit ratings from S&P and Moody's using this credit rating reconciliation table.

## 7.4.3 Internal ratings

(ARTICLE 449 SENTENCE 1 LETTER L CRR)

The Internal Assessment Approach (IAA) is used to determine ratings for liquidity facilities provided for ABCP programs if such facilities have not been rated by external agencies (in accordance with article 265 CRR for new business). This arrangement relates solely to the banking book because the entities in the DZ BANK banking group do not have any such exposures in the trading book.

When used to assess risk in accordance with regulatory requirements, the IAA closely follows the models used by external rating agencies. Depending on the assets securitized in an ABCP transaction, one of a number of submodels within the IAA may be used to ensure that the measurement is appropriate to the risk. Lease receivables, trade receivables, and other items are securitized. In compliance with article 265 CRR, the stress factors used to measure the relevant cushions against potential loss and the resulting rating categories are at least as conservative as those used by external rating agencies. The stress factors used for determining internal ratings are used in a similar way by the rating agencies in their procedures. In addition, the IAA is used for portfolios of individually assessed loans and advances. Likewise, the resulting credit ratings in this case are no less conservative than would be expected from the use of credit portfolio models by external rating agencies. Besides being used for determining capital requirements, the IAA is also used for the purposes of internal risk management and pricing in the lending business.

The IAA is comprehensively validated each year. The employees responsible for this task receive extensive training and are familiar with current developments relating to the area of securitization. Suitable organizational structures are in place to ensure that front office, back office, model development, and model validation are segregated. Credit procedures and rating models are also subject to regular review by both internal and external auditors.

## 7.5 Securitization exposure and capital requirements

### 7.5.1 Total amount of asset securitizations

(ARTICLE 449 SENTENCE 1 LETTERS M, N (I), AND Q CRR)

There are no longer any activities with the DZ BANK banking group as originator. Furthermore, there were no true-sale securitizations in the banking book, neither were there any securitizations of assets associated with market risk exposures in the trading book. If granted lines are drawn, exposures to the CORAL and AUTOBAHN special-purpose entities arise.

The year-on-year change in sponsor exposures was largely due to new transactions and the expansion of exposures.

### 7.5.2 Impaired securitizations, past-due securitized loans, and losses realized during the reporting period

(ARTICLE 449 SENTENCE 1 LETTERS P AND M CRR)

As there are no longer any activities with the DZ BANK banking group as originator, no disclosures on the portions of the group's own asset securitizations that are past due or at risk of default are provided, nor are the losses on such exposures realized during the reporting year presented.

### 7.5.3 Securitizations during the reporting period

(ARTICLE 449 SENTENCE 1 LETTERS N (VI), M, AND R CRR)

No assets were effectively securitized with the DZ BANK banking group as originator during 2020. There are still no securitization structures with an early amortization approach.

In the reporting period, the DZ BANK banking group did not provide any implicit support within the meaning of article 250 CRR.

### 7.5.4 Retained, purchased or off-balance-sheet securitization exposures

(ARTICLE 449 SENTENCE 1 LETTERS N (II) AND M CRR)

Fig. 78 and Fig. 79 show the securitization exposures in the banking book and trading book, indicating the DZ BANK banking group's role in respect of the securitization exposures (originator, sponsor, or investor).

FIG. 78 – EU-SEC1 – SECURITIZATION EXPOSURES IN THE BANKING BOOK

| | | a | b | c | d | e | f | g | h | i | j | k | l | m | n | o |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Institution acts as originator | | | | | | | Institution acts as sponsor | | | | Institution acts as investor | | | |
| | | Traditional | | | | Synthetic | | | Traditional | | | | Traditional | | | |
| | | STS | | Non-STS | | | | | | | | | | | | |
| | | | of which SRT | | of which SRT | | of which significant risk transfer (SRT) | Subtotal | STS | Non-STS | Synthetic | Subtotal | STS | Non-STS | Synthetic | Subtotal |
| 1 | **Total exposure** | - | - | - | - | - | - | - | 1,095 | 4,051 | - | 5,146 | 293 | 1,716 | - | 2,008 |
| 2 | **Retail business (total)** | - | - | - | - | - | - | - | - | 583 | - | 583 | 200 | 1,407 | - | 1,607 |
| 3 | Residential mortgages | - | - | - | - | - | - | - | - | - | - | - | 55 | 1,056 | - | 1,111 |
| 4 | Credit cards | - | - | - | - | - | - | - | - | - | - | - | - | 0 | - | 0 |
| 5 | Other retail exposures | - | - | - | - | - | - | - | - | 583 | - | 583 | 145 | 351 | - | 496 |
| 6 | Re-securitizations | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 7 | **Wholesale (total)** | - | - | - | - | - | - | - | 1,095 | 3,468 | - | 4,562 | 92 | 308 | - | 401 |
| 8 | Loans to corporates | - | - | - | - | - | - | - | - | 116 | - | 116 | - | 15 | - | 15 |
| 9 | Commercial mortgages | - | - | - | - | - | - | - | - | - | - | - | - | 44 | - | 44 |
| 10 | Leases and receivables | - | - | - | - | - | - | - | 1,095 | 3,318 | - | 4,413 | 92 | 242 | - | 334 |
| 11 | Other wholesale | - | - | - | - | - | - | - | - | 33 | - | 33 | - | 8 | - | 8 |
| 12 | Re-securitizations | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

As at the reporting date, the securitization portfolio in the banking book had changed only moderately compared with December 31, 2019 due to two opposing effects. On the one hand, there was an increase in sponsor activities and, on the other, the investor portfolio contracted due to redemptions, primarily in the portfolio of DZ HYP.

FIG. 79 – EU-SEC2 – SECURITIZATION EXPOSURES IN THE TRADING BOOK

| | | a | b | c | d | e | f | g | h | i | j | k | l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Institution acts as originator | | | | Institution acts as sponsor | | | | Institution acts as investor | | | |
| | | Traditional | | | | Traditional | | | | Traditional | | | |
| | | STS | Non-STS | Synthetic | Subtotal | STS | Non-STS | Synthetic | Subtotal | STS | Non-STS | Synthetic | Subtotal |
| 1 | **Total exposure** | - | - | - | - | - | - | - | - | - | 166 | - | 166 |
| 2 | **Retail business (total)** | - | - | - | - | - | - | - | - | - | 115 | - | 115 |
| 3 | Residential mortgages | - | - | - | - | - | - | - | - | - | 59 | - | 59 |
| 4 | Credit cards | - | - | - | - | - | - | - | - | - | - | - | - |
| 5 | Other retail exposures | - | - | - | - | - | - | - | - | - | 56 | - | 56 |
| 6 | Re-securitizations | - | - | - | - | - | - | - | - | - | - | - | - |
| 7 | **Wholesale (total)** | - | - | - | - | - | - | - | - | - | 51 | - | 51 |
| 8 | Loans to corporates | - | - | - | - | - | - | - | - | - | - | - | - |
| 9 | Commercial mortgages | - | - | - | - | - | - | - | - | - | - | - | - |
| 10 | Leases and receivables | - | - | - | - | - | - | - | - | - | 51 | - | 51 |
| 11 | Other wholesale | - | - | - | - | - | - | - | - | - | - | - | - |
| 12 | Re-securitizations | - | - | - | - | - | - | - | - | - | - | - | - |

As at the reporting date, the securitization portfolio in the trading book had contracted sharply compared with December 31, 2019 due to normal fluctuation in the markets.

### 7.5.5 Exposure values and capital requirements for retained or purchased securitizations broken down by the approach used to calculate the capital requirement

(ARTICLE 449 SENTENCE 1 LETTERS O (I) AND M AND ARTICLE 444 LETTER E CRR)

Fig. 80 shows the securitization exposures in the banking book and the related regulatory capital requirements where the institution acts as originator or sponsor.

Disclosure of the quantitative information about using the Securitization Standardized Approach is in line with article 444 letter e CRR.

### 7.5.6 Securitization exposures and deductions from own funds

(ARTICLE 449 SENTENCE 1 LETTERS N (V) AND M CRR)

Fig. 80 shows the risk-weighted exposure amounts and capital requirements broken down by banking book transaction.

FIG. 80 – EU-SEC3 – SECURITIZATION EXPOSURES IN THE BANKING BOOK AND ASSOCIATED REGULATORY CAPITAL REQUIREMENTS – INSTITUTION ACTING AS ORIGINATOR OR AS SPONSOR

| | | a | b | c | d | e | f | g | h | i | j | k | l | m | n | o | p | q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Exposure values (by risk weight (RW) bands/deductions) | | | | | Exposure values (by regulatory approach) | | | | RWEA (by regulatory approach) | | | | Capital charge after cap | | | |
| | € million | ≤20% RW | >20% to 50% RW | >50% to 100% RW | >100% to <1,250% RW | 1,250% RW/deductions | SEC-IRBA | SEC-ERBA (including IAA) | SEC-SA | 1,250% RW/deductions | SEC-IRBA | SEC-ERBA (including IAA) | SEC-SA | 1,250% RW/deductions | SEC-IRBA | SEC-ERBA (including IAA) | SEC-SA | 1,250% RW/deductions |
| 1 | Total exposure | 629 | 1,559 | 2,864 | 94 | - | - | 4,710 | 436 | - | - | 3,404 | 377 | - | - | 272 | 30 | - |
| 2 | **Traditional transactions** | 629 | 1,559 | 2,864 | 94 | - | - | 4,710 | 436 | - | - | 3,404 | 377 | - | - | 272 | 30 | - |
| 3 | Securitizations | 629 | 1,559 | 2,864 | 94 | - | - | 4,710 | 436 | - | - | 3,404 | 377 | - | - | 272 | 30 | - |
| 4 | Retail business | 172 | 55 | 356 | 0 | - | - | 337 | 246 | - | - | 324 | 55 | - | - | 26 | 4 | - |
| 5 | Of which STS | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 6 | Wholesale | 457 | 1,503 | 2,508 | 94 | - | - | 4,373 | 190 | - | - | 3,080 | 322 | - | - | 246 | 26 | - |
| 7 | Of which STS | - | - | - | - | - | - | 1,095 | - | - | - | 572 | - | - | - | 46 | - | - |
| 8 | Re-securitizations | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 9 | **Synthetic transactions** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 10 | Securitizations | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 11 | Retail business | - | - | - | - | - | - | - | - | - | - | - | - | 14 | - | - | - | - |
| 12 | Wholesale | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 13 | Re-securitizations | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

As at the reporting date, the exposures for sponsor activities had increased compared with December 31, 2019 due to new business. They are primarily calculated using the IAA. A portfolio of purchased receivables is also shown under the Standardized Approach (SEC-SA). The DZ BANK Group does not use the Internal Ratings-based Approach (SEC-IRBA). The risk-weighted assets in this portfolio increased sharply owing to full application of the new securitization framework. There were no capital deductions as at the reporting date.

FIG. 81 – EU-SEC4 – SECURITIZATION EXPOSURES IN THE BANKING BOOK AND ASSOCIATED REGULATORY CAPITAL REQUIREMENTS – INSTITUTION ACTING AS INVESTOR

| | | a | b | c | d | e | f | g | h | i | j | k | l | m | n | o | p | q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Exposure values (by risk weight (RW) bands/deductions) | | | | | Exposure values (by regulatory approach) | | | | RWEA (by regulatory approach) | | | | Capital charge after cap | | | |
| | € million | ≤20% RW | >20% to 50% RW | >50% to 100% RW | >100% to <1,250% RW | 1,250% RW/deductions | SEC-IRBA | SEC-ERBA (including IAA) | SEC-SA | 1,250% RW/deductions | SEC-IRBA | SEC-ERBA (including IAA) | SEC-SA | 1,250% RW/deductions | SEC-IRBA | SEC-ERBA (including IAA) | SEC-SA | 1,250% RW/deductions |
| 1 | Total exposure | 1,287 | 276 | 145 | 262 | 38 | - | 1,392 | 579 | 38 | - | 815 | 231 | - | - | 65 | 19 | - |
| 2 | **Traditional securitizations** | 1,287 | 276 | 145 | 262 | 38 | - | 1,392 | 579 | 38 | - | 815 | 231 | - | - | 65 | 19 | - |
| 3 | Securitizations | 1,287 | 276 | 145 | 262 | 38 | - | 1,392 | 579 | 38 | - | 815 | 231 | - | - | 65 | 19 | - |
| 4 | Retail business | 955 | 269 | 140 | 219 | 24 | - | 1,151 | 433 | 24 | - | 693 | 209 | - | - | 55 | 17 | - |
| 5 | Of which STS | - | - | - | - | - | - | 149 | 51 | - | - | 16 | 5 | - | - | 1 | 0 | - |
| 6 | Wholesale | 332 | 7 | 5 | 43 | 14 | - | 241 | 146 | 14 | - | 122 | 22 | - | - | 10 | 2 | - |
| 7 | Of which STS | - | - | - | - | - | - | 81 | 12 | - | - | 8 | 1 | - | - | 1 | 0 | - |
| 8 | Re-securitizations | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 9 | **Synthetic securitizations** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 10 | Securitizations | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 11 | Retail business | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 12 | Wholesale | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 13 | Re-securitizations | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

As at the reporting date, the investor portfolio had contracted compared with December 31, 2019 due to redemptions and sales. The risk-weighted assets in this portfolio increased sharply owing to full application of the new securitization framework. The reduction in capital deductions was the result of applying the new securitization framework in full. The External Ratings-based Approach (SEC-ERBA) and the Standardized Approach (SEC-SA) are the main approaches used. Here too, the SEC-IRBA is not used.

Template EU-SEC5 is not relevant because there are no such exposures in the DZ BANK banking group.

### 7.5.7 Re-securitization exposures and collateralization amounts

(ARTICLE 449 SENTENCE 1 LETTERS O (II) AND M CRR)

No re-securitization exposures were held as at December 31, 2020.

### 7.5.8 Planned securitizations

(ARTICLE 449 SENTENCE 1 LETTER N (III) CRR)

As at December 31, 2020, there were no plans for any securitizations.

# 8 Market risk

Market risk is defined in section 2.2 (page 75 and figure 4 on pages 76 and 77) in conjunction with section 8.1 (page 146) of the commercial-law risk report.

## 8.1 Market risk management

(ARTICLE 435 (1) CRR)

The principles and objectives of market risk management and the methods used to manage risk are presented in sections 8.2, 8.5, and 8.6 (pages 146 to 147 and pages 148 to 150) of the commercial-law risk report. The structure and organization of the market risk management function are described in section 8.4 (page 147 to 148) of the commercial-law risk report. Information on the scope and nature of the market risk measurement systems is provided in sections 8.2.2 and 8.5.1 to 8.5.4 (pages 146 to 147 and pages 148 to 149) of the commercial-law risk report. Section 8.5.5 (pages 149 to 150) of the commercial-law risk report sets out the strategies for hedging and mitigating market risk and strategies and processes for monitoring the ongoing effectiveness of the measures taken to hedge market risk.

## 8.2 Required qualitative disclosures on market risk

(ARTICLE 445 AND ARTICLE 455 CRR IN CONJUNCTION WITH ARTICLE 435 (1) LETTERS A, B, AND D AND ARTICLE 448 CRR)

For regulatory purposes, DZ BANK is classed as a trading book institution. It conducts trading activities as part of its role as the central institution in the cooperative financial network and – on this basis – as a corporate bank for customers outside the cooperative financial network.

In line with the requirements in articles 102 to 104 CRR, DZ BANK has defined clear rules on the delimitation and the running and management of the trading book. The trading book is defined using criteria relating to the intention to trade and generate returns, maturities, tradability, the ability to mitigate risk, and the characteristics of the financial instruments. A clear decision-making path for the assignment of an exposure to either the trading book or the banking book is also mandatory.

When a transaction is entered into, its purpose must be documented in a verifiable manner by recognizing it in a specific portfolio – trading book or banking book – so that it is clearly assigned. Compliance with the assignment rules is regularly monitored within a defined process. The assignment to the trading book or banking book can only be changed subsequently in accordance with defined rules as part of a reallocation process.

The handling of risk in the trading book is documented in DZ BANK's trading strategy. The rules for running and managing the trading book, the definition of the trading book, and the trading strategy are reviewed and, if necessary, updated at least once a year.

DZ BANK generally manages market risk on a decentralized, portfolio basis. The traders responsible for managing a portfolio bear responsibility for its risk and performance.

Exposures in the trading book are, where available, measured daily using liquid market prices available in active markets (mark-to-market). These exposures are mainly liquid securities (bonds and equities) and exchange-traded derivatives. If there are no liquid market prices available, the exposures are measured with market-standard valuation models using predominantly observable market data (mark-to-model). Calibration of the valuation models on the basis of observable market data ensures that measurement reflects the market. The extent of unobservable market parameters that influence value is always kept as small as possible in the measurement. Generally, unobservable market parameters are derived from similar instruments or data that is not observable on a daily basis. As a rule, they are included in the calculation of gains and losses with an adjustment to the instrument's measurement that is appropriate to the degree of imprecision in the measurement. A description of the valuation methods and measurement adjustments can be found in the notes to the financial statements in DZ BANK's Annual Report, part E 'Financial instruments and fair value disclosures' in the 'Fair value measurements within Levels 2 and 3' section.

Pursuant to articles 34 and 105 CRR and Delegated Regulation (EU) 2016/101, DZ BANK calculates regulatory write-downs for all exposures recognized at fair value in accordance with the core approach and deducts them from common equity Tier 1 capital. For the disclosures as at June 30, 2020, September 30, 2020, and December 31, 2020, it also applied regulatory technical standards EBA/RTS/2020/04, which permits the adjusted offsetting of fair value adjustments. Measurement is based on the methods and models used to measure fair value under commercial law; measurement uncertainties relating to market prices, market parameters, and model selection are reflected by taking the 90 percent quantile into account. Additional write-downs for operational risk, future administrative expenses, and exposure concentrations are recognized in accordance with the prescribed methodology and deducted from Tier 1 capital.

## 8.3 Market risk under the Standardized Approach

(ARTICLE 445 CRR)

Fig. 82 contains the disclosures on the capital requirements for market risk according to article 92 (3) letters b and c CRR under the Standardized Approach. The capital requirement for specific interest-rate risk relating to securitization exposures pursuant to article 445 sentence 2 CRR is also disclosed here. As at December 31, 2020, the proportion of market risk-weighted assets subject to the Standardized Approach was 11.95 percent (June 30, 2020: 14.93 percent).

FIG. 82 – EU MR1 – MARKET RISK UNDER THE STANDARDIZED APPROACH

| | | Dec. 31, 2020 | | Jun. 30, 2020 | |
|---|---|---|---|---|---|
| | | a | b | a | b |
| € million | | RWAs | Capital requirements | RWAs | Capital requirements |
| | **Outright products** | | | | |
| 1 | Interest-rate risk (general and specific) | 1 | 0 | 114 | 9 |
| 2 | Equity risk (general and specific) | - | - | - | - |
| 3 | Currency risk | 887 | 71 | 1,508 | 121 |
| 4 | Commodity risk | 12 | 1 | 10 | 1 |
| **5** | **Options** | | | | |
| 6 | Simplified approach | 0 | 0 | 0 | 0 |
| 7 | Delta-plus method | - | - | - | - |
| 8 | Scenario approach | - | - | - | - |
| **9** | **Securitization (specific risk)** | 103 | 8 | 159 | 13 |
| **10** | **Total** | **1,003** | **80** | **1,791** | **144** |

Market risk under the Standardized Approach was €788 million lower than at June 30, 2020. This decrease was mainly the result of including the currency risk for DZ BANK AG's pension funds in the internal market risk model. The dominant risk categories are currency risk and interest-rate risk.

## 8.4 Internal market risk model

### 8.4.1 Qualitative information on the internal market risk model

(ARTICLE 455 SENTENCE 1 LETTERS A (I) AND B CRR)

The model approved by BaFin for calculating the regulatory capital requirements for general and specific market risk pursuant to the CRR is used for all portfolios of DZ BANK.

DZ BANK's internal model approved by BaFin for calculating the regulatory capital requirements for general and specific market risk pursuant to the CRR is used to calculate **value-at-risk** and **stressed value-at-risk** (crisis risk amount) on a daily basis with a unilateral confidence level of 99.00 percent over a one-year observation period and a holding period of 10 trading days. A historical simulation is used to generate market data scenarios.

**Description of the crisis scenarios used, pursuant to article 455 sentence 1 letter a (iii) CRR**
Risks arising from extreme market situations are primarily recorded using **stress tests**. The crisis scenarios underlying the market risk stress tests include the simulation of significant fluctuations in risk factors and serve to highlight potential losses not generally recognized in the value-at-risk approach. Stress tests are based on extreme market fluctuations that have actually occurred in the past together with crisis scenarios that – regardless of market data history – are considered to be relevant. The crisis scenarios used in this case are constantly reviewed and updated to ensure they are appropriate. Reverse stress tests are also used to identify scenarios that could pose a potential threat to the institution.

**Qualitative information about stress tests and about which portfolios undergo stress tests pursuant to article 435 sentence 1 letter a CRR**
Risks arising from extreme market situations are primarily recorded using stress tests. The crisis scenarios underlying the market risk stress tests include the simulation of significant fluctuations in risk factors and serve to highlight potential losses not generally recognized in the value-at-risk approach. Extreme market fluctuations that have actually occurred in the past as a result of crisis events (e.g. September 11, 2001, Lehman insolvency, Iceland's default) are used for historical stress test scenarios; crisis scenarios are also used in which individual risk factor groups are exposed to strong hypothetical fluctuation, regardless of market data history. All portfolios of DZ BANK are remeasured in full in respect of all scenarios, taking account of any relevant changes in the risk factors. The crisis scenarios used in this case are constantly reviewed and updated to ensure they are appropriate. Reverse stress tests are also used to identify scenarios that could pose a potential threat to the institution. Changes in the risk factors are determined that would generate losses above a previously defined threshold in the event of a DZ BANK portfolio being remeasured in full.

**Additional default and migration risk (incremental risk charge)**

(ARTICLE 455 SENTENCE 1 LETTER A (II) CRR)

Since December 2011, DZ BANK has been using an internal risk model approved by the supervisory authority to determine the capital requirements related to the additional default and migration risk in the trading book (incremental risk charge, IRC). In this model, sudden market changes arising from rating migrations or default by an issuer are specifically factored into the regulatory risk calculation. Potential losses from migrations and defaults are measured on the basis of a one-sided prediction interval with a confidence level of 99.90 percent and a prediction horizon of one year. A factor-based portfolio model is used. Calculations assume a constant risk position over the prediction horizon.

### Measurement undertaken independently of the trading function, and model validation

(ARTICLE 455 SENTENCE 1 LETTERS A (IV) AND G CRR)

Independently of the trading function, exposures are measured daily using current market parameters. To this end, the market data is largely collected by Risk Controlling itself and the **measurement methods and models** are developed largely independently of the trading units and validated entirely independently. An independent price verification process takes place where market parameters are not used independently of the trading function. Any discrepancies identified through comparison with data from external suppliers of market data are recognized as a valuation reserve.

The internal market risk model is subject to continuous operational review as part of standard processes. The review is carried out by market risk control using analyses of the value-at-risk and evaluations of the backtesting and stress test results.

An enhanced review of the model (appropriateness test) is carried out at least once a year. It includes a comprehensive analysis of time series, parameterization, stress test scenarios, processes, and a review of the time period for calculating the stressed value-at-risk. As part of the annual appropriateness test, statistical tests are carried out on the predictive quality of the value-at-risk model and procedural aspects are taken into account, such as delivery times and the quality of the value-at-risk figure.

Market risk model validation consists of five key components: daily risk analysis, daily backtesting, monthly validation, risk self-assessment, and the annual appropriateness test.

Validation governance stipulates that the results of the daily risk analysis and backtesting are used to compile a monthly validation report, with additional analysis and validation as required, and communicated to the Board of Managing Directors.

The annual appropriateness test also includes an assessment of the processes connected with the preparation of key risk indicators, analysis of the stress tests implemented, statistical tests to check the predictive quality of the risk model, and portfolio-level examination of anomalies (if they have not already been noted in the monthly reports).

The risk self-assessment is carried out once a year, or whenever required, with the aim of creating a standard, structured list of known failings in the market risk model, setting logical validation priorities, and defining and monitoring improvement measures.

In addition, the internal market risk model is audited regularly by internal audit during annual audits.

### Required disclosures on the use of VaR models and sVaR models

(ARTICLE 455 SENTENCE 1 LETTERS A (I), (III), (IV) AND B CRR)

Within the DZ BANK banking group, only DZ BANK has a **market risk model** that has been approved by the supervisory authority. The other entities use the **Standardized Approach**.

Portfolio and market data is updated each trading day. Risk is measured using a historical simulation for a 250-day, equally weighted review period. In the context of risk measurement, financial instruments are mostly remeasured in full.

The **VaR model** used for regulatory purposes is also used for internal management, largely using the same methods and processes. The only differences in the VaR model used for internal management are as follows:

– The holding period used is shorter (1 day, 99 percent quantile).
– All asset classes are taken into account, including in the banking book.
– Separate equity event risk is ignored.
– Differences may arise in relation to add-ons or buffers for risks that are not contained in the model.

Risk factor changes are directly derived from 10-day changes observed in the past.

An integrated view of the general and specific risk factors is taken in the historical scenarios.

Risk factors are generally varied on a relative basis unless it is acceptable to assume negative values. That is why all interest-rate and spread risk factors, in particular, are varied on an absolute basis.

The **sVaR model** uses the same methods and processes as the VaR model. Only the historical market data from the stress period is fed into the sVaR model. The stress period chosen was August 25, 2008 to August 7, 2009 because this historical period consistently gave the biggest value for the 99 percent quantile. Since the outbreak of the coronavirus crisis, the VaR has exceeded the sVaR at times. The stress period is usually reviewed in the first quarter of each year using a complete historical simulation from October 2007 to the review date in question. The regular review of the stress period was brought forward due to the low sVaR level relative to the VaR. The review led to the stress period being adjusted in the first quarter of 2021.

**Required disclosures on the use of an IRC model for determining the capital requirement**
(ARTICLE 455 SENTENCE 1 LETTER A (II) (III), AND (IV) CRR)

To determine the additional default and migration risk (IRC), a portfolio model is used in which credit rating changes are determined depending on systematic risk factors and using credit rating transition matrices. The credit rating transition matrices, the factor weightings, and the correlations between the systematic risk factors are derived from detailed data supplied by the major rating agencies on migrations and defaults and using established procedures. A constant risk position up to the prediction horizon of one year is assumed, i.e. no individual liquidity horizon is required. The modeling covers DZ BANK's entire trading book, although securitizations and the CTP are explicitly excluded. The risk measure is the gain and loss distribution of the value-at-risk generated by the model with a confidence level of 99.9 percent.

An extensive program of stress testing is regularly conducted for the model. The stress tests include, but are not limited to, analysis of concentration risk, the correlation parameters, and credit rating transition matrices as well as macroeconomic scenarios and their impact on additional default and migration risk.

An annual appropriateness test is conducted on the model for determining the additional default and migration risk. The main aspects covered by this test are as follows:

– Adequacy of the model design and numerical procedures used
– Influence of single borrower concentrations and systematic risk concentrations
– Appropriateness of the correlation assumptions, the credit rating transition matrices, the LGD rates, and the modeling of recovery risk
– Analysis of the stress tests implemented
– Quality of the processes relating to risk reporting
– Appropriateness of the model documentation and compliance with the regulatory requirements.

**Required disclosures on the use of internal models for correlation activities for determining the capital requirement**

(ARTICLE 455 SENTENCE 1 LETTER A (II) CRR)

The DZ BANK banking group does not use internal models for correlation activities for determining the capital requirement.

## 8.4.2 Quantitative information on the internal market risk model

(ARTICLE 455 SENTENCE 1 LETTER E CRR)

The capital requirement for market risk at DZ BANK is determined using the internal market risk model described in section 8.4.1. This is based on a historical simulation with a holding period of 10 trading days and an observation period of one year; the following risk factor classes are examined for all subportfolios of DZ BANK: interest rates, spreads, equities, foreign currencies, and commodities.

Fig. 83 shows the components of the capital requirement under the internal models approach for market risk.

As at the reporting date, the proportion of market risk-weighted assets covered by the internal model was 88.05 percent (June 30, 2020: 85.07 percent).

The decrease in the RWAs compared with June 30, 2020 was €2,815 million. This was mainly due to the fall in the Ø daily VaR and stressed VaR (sVaR) on each of the preceding 60 business days.

FIG. 83 – EU MR2-A – MARKET RISK UNDER THE INTERNAL MODELS APPROACH (IMA)

| | | Dec. 31, 2020 | | Jun. 30, 2020 | |
|---|---|---|---|---|---|
| | | a | b | a | b |
| € million | | RWAs | Capital requirements | RWAs | Capital requirements |
| 1 | **VaR (higher of values a) and b))** | **3,205** | **256** | 4,520 | 362 |
| (a) | Previous day's VaR (article 365 (1) CRR (VaRt-1)) | | 55 | | 72 |
| (b) | Ø of the daily VaR (article 365 (1) CRR) on each of the preceding 60 business days (VaRavg) x multiplication factor (mc) in accordance with article 366 CRR | | 256 | | 362 |
| 2 | **sVaR (higher of values a) and b))** | **2,904** | **232** | 4,129 | 330 |
| (a) | Latest sVaR (article 365 (2) CRR (sVaRt-1)) | | 52 | | 66 |
| (b) | Ø of the daily sVaR (article 365 (2) CRR) on each of the preceding 60 business days (sVaRavg) x multiplication factor (ms) in accordance with article 366 CRR | | 232 | | 330 |
| 3 | **Incremental risk charge (IRC) (higher of values a) and b))** | **1,277** | **102** | 1,552 | 124 |
| (a) | Most recent IRC value (additional default and migration risks calculated in accordance with articles 370 and 371 CRR) | | 102 | | 102 |
| (b) | Ø of the IRC number over the preceding 12 weeks | | 96 | | 124 |
| 4 | **Internal model for correlation trading activities (higher of values a), b), and c))** | - | - | - | - |
| (a) | Most recent risk number for the correlation trading portfolio (article 377 CRR) | | - | | - |
| (b) | Ø of the risk number for the correlation trading portfolio over the preceding 12 weeks | | - | | - |
| (c) | 8% of the capital requirements in the Standardized Approach on the most recent risk number for the correlation trading portfolio (article 338 (4) CRR) | | - | | - |
| 5 | **Other** | - | - | - | - |
| 6 | **Total** | **7,386** | **591** | 10,201 | 816 |

Fig. 84 is a flow statement designed to explain variations in the RWAs for market risk, which are based on internal models (e.g. VaR, sVaR) and have to be determined in accordance with Part 3 Title IV Chapter 5 CRR (IMA).

The RWAs (column f, rows 1 and 8) increased by €207 million compared with September 29, 2020. This slight rise was largely due to the small increase in the incremental risk charge (IRC) in the period under review, which was mainly attributable to the growth of the portfolio of bonds and promissory notes.

FIG. 84 – EU MR2-B – RWA FLOW STATEMENTS OF MARKET RISK EXPOSURES UNDER THE IMA

| | | a | b | c | d | e | f | g |
|---|---|---|---|---|---|---|---|---|
| **€ million** | | **VaR** | **sVaR** | **IRC** | **Internal model for correlation trading activities** | **Other** | **Total risk-weighted assets (RWAs)** | **Total capital requirements** |
| 1 | Total RWAs as at the end of the previous quarter | 3,164 | 2,889 | 1,126 | - | - | 7,179 | 574 |
| 1(a) | Regulatory adjustment | -2,270 | -2,017 | -2 | - | - | -4,290 | -343 |
| 1(b) | RWAs as at the end of the previous quarter (end of the day) | 894 | 872 | 1,124 | - | - | 2,890 | 231 |
| 2 | Movement in risk levels | -204 | -218 | 153 | - | - | -269 | -22 |
| 3 | Model updates/changes | - | - | - | - | - | - | - |
| 4 | Methodology and policy | - | - | - | - | - | - | - |
| 5 | Acquisitions and disposals | - | - | - | - | - | - | - |
| 6 | Foreign exchange movements | - | -8 | - | - | - | -8 | -1 |
| 7 | Other | - | - | - | - | - | - | - |
| 8(a) | RWAs as at the end of the reporting period (end of the day) | 690 | 645 | 1,277 | - | - | 2,611 | 209 |
| 8(b) | Regulatory adjustment | 2,515 | 2,259 | - | - | - | 4,774 | 382 |
| **8** | **Total RWAs as at the end of the reporting period** | **3,205** | **2,904** | **1,277** | **-** | **-** | **7,386** | **591** |

## Further quantitative disclosures

(ARTICLE 455 SENTENCE 1 LETTERS D, G, AND F CRR)

The value-at-risk for portfolios in the trading book, for which the capital requirement is determined using the internal modeling approach in accordance with section 363 et seq. CRR, and the potential stressed value-at-risk are disclosed in Fig. 85. It therefore shows the change in the market risk figures for the trading book portfolios.

This table also shows the extent of the additional default and migration risk measured in relation to the total trading book and in relation to the relevant subportfolios as specified in articles 372 to 376 CRR. This calculation is based on the assumption of a constant exposure over a risk horizon of one year, as was also the case for the calculation as at June 30, 2020. This disclosure is pursuant to article 455 sentence 1 letter f CRR.

FIG. 85 – EU MR3 – IMA VALUES FOR TRADING PORTFOLIOS

| € million | | Dec. 31, 2020 | Jun. 30, 2020 |
|---|---|---|---|
| | | a | a |
| **VaR (10 days, 99%)** | | | |
| 1 | Maximum value | 99 | 99 |
| 2 | Ø value | 56 | 52 |
| 3 | Minimum value | 5 | 5 |
| 4 | Period end | 51 | 69 |
| **sVaR (10 days, 99%)** | | | |
| 5 | Maximum value | 121 | 121 |
| 6 | Ø value | 58 | 63 |
| 7 | Minimum value | 27 | 27 |
| 8 | Period end | 48 | 59 |
| **IRC (99%)** | | | |
| 9 | Maximum value | 146 | 146 |
| 10 | Ø value | 104 | 116 |
| 11 | Minimum value | 79 | 82 |
| 12 | Period end | 102 | 103 |
| **Internal model for correlation trading activities** | | | |
| 13 | Maximum value | - | - |
| 14 | Ø value | - | - |
| 15 | Minimum value | - | - |
| 16 | Period end | - | - |
| 17 | Floor (standardized measurement method) | - | - |

The value-at-risk (10 days, 99 percent) decreased from €69 million to €51 million over the second half of the year. The stressed value-at-risk (10 days, 99 percent) fell from €59 million to €48 million over the same period. These reductions were mainly due to various changes in the composition of the trading book portfolio. The incremental risk charge (1 year, 99.9 percent) was virtually unchanged, falling from €103 million to €102 million.

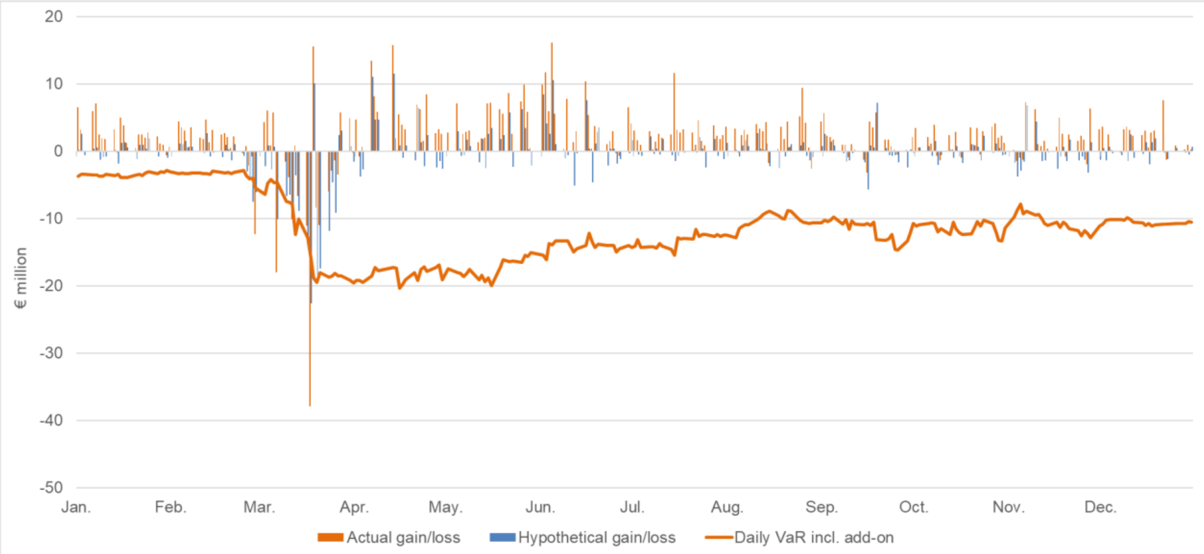
In accordance with article 455 (1) letter a CRR, the VaR and sVaR are allocated to interest-rate, currency, equity, commodity, and credit spread risk as shown below.

FIG. 86 – IMA VALUES FOR EACH SUBPORTFOLIO AS AT DECEMBER 31, 2020

| € million | | Total VaR | | Interest-rate VaR | | Currency VaR | | Equity VaR | | Commodity VaR | | Credit spread VaR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Dec. 31, 2020 | Jun. 30, 2020 | Dec. 31, 2020 | Jun. 30, 2020 | Dec. 31, 2020 | Jun. 30, 2020 | Dec. 31, 2020 | Jun. 30, 2020 | Dec. 31, 2020 | Jun. 30, 2020 | Dec. 31, 2020 | Jun. 30, 2020 |
| **VaR (10 days, 99%)** | | 51 | 69 | 5 | 5 | 10 | 10 | 3 | 4 | 9 | 4 | 86 | 123 |
| 1 | Maximum value | 99 | 99 | 12 | 12 | 22 | 17 | 35 | 26 | 13 | 13 | 168 | 168 |
| 2 | Ø value | 56 | 52 | 7 | 7 | 10 | 7 | 8 | 6 | 4 | 1 | 94 | 91 |
| 3 | Minimum value | 5 | 5 | 4 | 4 | 3 | 3 | 1 | 1 | 0 | 0 | 6 | 6 |
| 4 | Period end | 51 | 69 | 5 | 5 | 10 | 10 | 3 | 4 | 9 | 4 | 86 | 123 |
| **sVaR (10 days, 99%)** | | 48 | 59 | 24 | 24 | 16 | 20 | 4 | 8 | 6 | 1 | 66 | 85 |
| 5 | Maximum value | 121 | 121 | 45 | 36 | 46 | 43 | 51 | 51 | 6 | 4 | 104 | 104 |
| 6 | Ø value | 58 | 63 | 23 | 20 | 22 | 20 | 17 | 21 | 3 | 2 | 81 | 89 |
| 7 | Minimum value | 27 | 27 | 6 | 6 | 5 | 5 | 3 | 3 | 1 | 1 | 60 | 65 |
| 8 | Period end | 48 | 59 | 24 | 24 | 16 | 20 | 4 | 8 | 6 | 1 | 66 | 85 |

The VaR, the stressed VaR (sVaR), and the incremental risk charge (IRC) are factored into the calculation of the regulatory capital requirement. The disclosures on backtesting pursuant to article 455 sentence 1 letter g CRR are shown in Fig. 87.

FIG. 87 – EU MR4 – COMPARISON OF VAR ESTIMATES FOR MARKET RISK IN THE TRADING BOOK AND CURRENCY RISK AND COMMODITY RISK IN THE BANKING BOOK UNDER THE INTERNAL MODELING APPROACH AND HYPOTHETICAL CHANGES IN FAIR VALUE WITH GAINS/LOSSES AT DZ BANK AS AT DECEMBER 31, 2020




The hypothetical and actual changes in fair value, in which all reserves are also included, overshot the forecast risk value on six trading days during a period of 14 trading days between late February and mid-March. The reason for the overshooting was the market turmoil resulting from the COVID-19 pandemic.
The credit spreads of bank, corporate, and government bonds were affected, as were share prices and exchange rates. The heightened volatility of the risk factors led to an increased risk figure being reported, as is to be expected with this model. The forecast risk values were not overshot subsequently.
Applying the CRR II quick fixes, these instances of overshooting will not be permanently included in the determination of the quantitative addend factor for calculating the regulatory capital requirements.

## 8.5 Interest-rate risk on exposures not included in the trading book

(ARTICLE 448 SENTENCE 1 LETTERS A AND B CRR, BAFIN CIRCULAR 06/2019)

At DZ BANK, interest-rate risk in the banking book mainly arises in the cover pool, from loans eligible as cover assets, from funding and money market business, from unsecured issuance activity, the unsecured funding business, and the lending business, in the liquidity pool, in the investment book, from the ABS exposures, and from the management of the Tier 1 and Tier 2 capital of DZ BANK and the banking group.

DZ BANK does not use any approaches for modeling customer behavior – particularly assumptions about early repayment of loans and behavior relating to open-ended deposits – with an impact on interest-rate risk.

DZ BANK consciously takes on these risks, calculates them daily, and takes them into account in its risk-bearing capacity.

When calculating interest-rate risk, the DZ BANK banking group examines the overall portfolio – comprising the trading and banking books – and the banking books in isolation. Interest-rate risk is measured as part of an integrated process. Specific information on the calculation of interest-rate exposure in the trading book and banking book in conjunction with article 448 sentence 1 letter a CRR, including the type of interest-rate risk, key assumptions made, and frequency of risk measurement, is disclosed in sections 8.5.1 and 8.5.2 (pages 148 and 149) of the commercial-law risk report.

Article 448 sentence 1 letter b CRR requires disclosure of the interest-rate exposure in the banking book. DZ BANK calculates this exposure as a value-at-risk figure at banking group level as part of its internal management of market risk.

The DZ BANK banking group's interest-rate risk in the banking book and trading book as determined using the method specified by senior management is disclosed in the commercial-law risk report (see figure 31 and section 8.7.1, page 151).

From a regulatory perspective, the impact of interest-rate shocks on the economic value of the banking book is simulated on a quarterly basis. The supervisory authority has set the changes in interest rates to be used at plus 200 basis points (rising interest rates) and minus 200 basis points (falling interest rates), both being a parallel shift of the interest-rate curve. A further six interest-rate changes have been specified by the supervisory authority (parallel up, parallel down, flattener, steepener, short rate shock up, and short rate shock down). The floor pursuant to the Guidelines on the management of interest-rate risk arising from non-trading book activities (EBA/GL/2018/02) dated July 19, 2018 was applied as at the reporting date. This involved setting a floor of minus 1 percent for the overnight interest rate in the down shift scenarios. The floor rises by 5 basis points per year for maturities of up to 20 years. For maturities of more than 20 years, a 0 percent floor applies. If the basic interest-rate curve is already below the floor, the interest rate of the basic interest-rate curve is used in the simulation (no shift). Positive movements in the value of currencies are set at 50 percent. Only material currencies are taken into account. As at December 31, 2020, these were the euro and the US dollar.

At the end of 2020, a potential loss of €36 million was calculated for the plus 200 basis points scenario (potential loss of €463 million at the end of 2019) and a potential gain of €531 million was calculated for the minus 200 basis points scenario (potential gain of €573 million at the end of 2019). These figures include the DZ BANK banking group's exposures. Fig. 88 and Fig. 89 below show the changes in present values broken down by material currency.

FIG. 88 – INTEREST-RATE RISK IN THE BANKING BOOK

**Interest-rate shock on trade date**

| **Gain and loss**<br>€ million | **Fall in interest rates (– 200bp)** | | **Rise in interest rates (+ 200bp)** | |
|---|---|---|---|---|
| **Currency** | **Dec. 31, 2020** | Dec. 31, 2019 | **Dec. 31, 2020** | Dec. 31, 2019 |
| EUR | 1,031 | 1,170 | 10 | -471 |
| USD | 30 | -12 | -41 | 16 |
| **Total** | **531** | **573** | **-36** | **-463** |

FIG. 89 – INTEREST-RATE RISK IN THE BANKING BOOK

**Interest-rate shock on trade date**

| **Gain and loss**<br>€ million | **Fall in interest rates (parallel down)** | | **Rise in interest rates (parallel up)** | | **Steepener** | | **Flattener** | |
|---|---|---|---|---|---|---|---|---|
| **Currency** | **Dec. 31, 2020** | Dec. 31, 2019 | **Dec. 31, 2020** | Dec. 31, 2019 | **Dec. 31, 2020** | Dec. 31, 2019 | **Dec. 31, 2020** | Dec. 31, 2019 |
| EUR | 1,031 | 1,170 | 10 | -471 | 405 | 240 | 358 | -72 |
| USD | 30 | -12 | -41 | 16 | 11 | -26 | -23 | 31 |
| **Total** | **531** | **573** | **-36** | **-463** | **208** | **93** | **156** | **-57** |

**Interest-rate shock on trade date**

| Gain and loss<br>€ million | Short rates shock down | | Short rates shock up | |
|---|---|---|---|---|
| Currency | Dec. 31, 2020 | Dec. 31, 2019 | Dec. 31, 2020 | Dec. 31, 2019 |
| EUR | -115 | 143 | -91 | -360 |
| USD | 20 | -31 | -39 | 34 |
| **Total** | **-105** | **41** | **-131** | **-343** |

Some of the entities in the DZ BANK banking group use behavior-based models to measure interest-rate risk. They help to accurately reflect the optionalities in traditional lending business and in home savings deposits business. Examples of these include options for drawing down loans or credit lines, termination options, and special repayment options and other options. Contractual and statutory termination rights are generally taken into account in the modeling of loans. A holding period of one day is assumed for open-ended deposits in DZ BANK's market risk model, while BSH uses behavior-based modeling in the context of collective simulation for home savings deposits.

# 9 Operational risk

(ARTICLE 435 (1) AND ARTICLE 446 CRR)

Operational risk is defined in section 2.2 (page 75 and figure 4 on pages 76 and 77) in conjunction with section 12.1 (page 159) of the commercial-law risk report.

The principles for the management of operational risk and the strategies and processes in respect of operational risk management (article 435 (1) CRR) are presented in sections 12.2 and 12.4 (pages 159 to 161) of the commercial-law risk report. Information on the structure and organization of the risk management function is provided in section 12.3 (pages 159 to 160), while the scope and nature of the risk measurement systems are described in sections 12.4.1 and 12.4.2 to (page 160) of the commercial-law risk report. Sections 12.4.3 and 12.4.4 (pages 160 and 161) of the commercial-law risk report outline the strategies for hedging and mitigating operational risk as well as details of the strategies and processes for monitoring the ongoing effectiveness of the measures taken to hedge operational risk.

For the purposes of determining regulatory capital requirements, the potential loss arising from operational risk was primarily estimated at DZ BANK as at December 31, 2020 using the Standardized Approach in accordance with article 317 CRR. As at December 31, 2020, the banking group's capital requirements for operational risk amounted to €849 million (December 31, 2019: €857 million).

Due to its definition, the 'gross income' indicator used in this approach enables only very limited risk-sensitive management of operational risk. By contrast, the operational-risk instruments 'internal and external loss data' and 'scenario-based risk self-assessments' used in the economic capital model show historical and future components of operational risk and, in conjunction with a risk-sensitive capital allocation, enable the economic measurement and management of operational risk.

In respect of the economic capital requirements, a statistical model is used for the management units that satisfies the criteria for an Advanced Measurement Approach (AMA). The results from this portfolio model, combined with the materiality limits for collation of loss data, scenario-based risk self-assessments, and risk indicators, are used to manage operational risk.

# 10 Reputational risk

(ARTICLE 435 (1) CRR)

Reputational risk is defined in section 2.2 (page 75 and figure 4 on pages 76 and 77) in conjunction with section 11.1 (page 158) of the commercial-law risk report.

The principles for the management of reputational risk and the strategies and processes in respect of reputational risk management (article 435 (1) CRR) are presented in sections 11.2 and 11.4 (page 158) of the commercial-law risk report. The structure and organization of the reputational risk management function are described in section 11.4 (page 158) of the commercial-law risk report. Details of the scope and nature of the reputational risk measurement systems, the strategies for hedging and mitigating reputational risk, and the monitoring thereof can be found in section 11.4 (page 158) of the commercial-law risk report.

# 11 Risk on long-term equity investments not included in the trading book

## 11.1 Management of risks attaching to long-term equity investments

(ARTICLE 435 (1) CRR)

The objectives and principles and the strategies and methods underlying the management of risks attaching to long-term equity investments held in the banking book are described in sections 7.2 to 7.5 (pages 144 to 146) of the commercial-law risk report. In section 2.2 (page 75 and figure 4 on pages 76 and 77) in conjunction with section 7.1 (page 144) of the commercial-law risk report, equity investment risk is defined as the risk of losses arising from negative changes in the fair value of the portion of the long-term equity investments portfolio for which the risks are not included in other types of risk.

## 11.2 Accounting policies applied to long-term equity investments

(ARTICLE 447 (1) LETTER A CRR)

The long-term equity investments and investments in subsidiaries that fall within the scope of IFRS 9 and are deemed to be equity instruments pursuant to IAS 32 are recognized at fair value.

In this context, the general but irrevocable option set out in IFRS 9.5.7.5 can be exercised, which means that fluctuations in fair value and impairment are recognized in other comprehensive income in the FVOCI reserve. Long-term equity investments and investments in subsidiaries that are deemed to be debt instruments pursuant to IAS 32 are recognized and measured at fair value through profit or loss. The option is exercised on a one-off basis for each equity instrument by each entity individually in the DZ BANK Group.

The relevant closing share price at the reporting date is used to measure the fair value of publicly traded long-term equity investments.

Investments in associates and joint ventures that are accounted for using the equity method are initially recognized at cost and subsequently measured in accordance with the rules of IAS 28.

The enterprise value of long-term equity investments that are not publicly traded is generally determined by discounting their future financial surpluses as at the measurement date. The figure used to determine the discount rate is the return on a risk-free capital market investment. A risk premium is added to this base interest rate to reflect the greater uncertainty about the level of future financial surpluses associated with an investment in shares of the company being measured compared with an investment in a risk-free interest-bearing security. The relevant beta factor (multiplier that expresses company-specific and industry-specific risk in relation to general market risk) is individually determined using an appropriate benchmarking method based on listed peer companies.

The enterprise values of companies at which a transaction has recently taken place are validated on the basis of the transaction price. If, rather than pursuing any (direct) financial objectives, the company in question focuses on providing services or promoting the public good (for example in the case of guarantee banks), the net asset value of this company as a going concern should be calculated instead. Alternatively, the value of the pro rata equity available can be used. Real-estate finance companies are subjected to a property-related measurement.

## 11.3 Long-term equity investment exposures held in the banking book

(ARTICLE 447 SENTENCE 1 LETTERS B TO E CRR)

Fig. 90 shows the measurement of equity exposures using the IFRS carrying amounts. The recognition of unrealized gains and losses on long-term equity investments in the DZ BANK banking group's own funds is shown in Fig. 91. Information on the objectives and profit generation aims of the investment portfolio can be found in section 7.2 (pages 144 to 145) of the commercial-law risk report.

The regulatory report on investments held in the banking book covers conventional investments as well as securities, derivatives on investment exposures, and investment funds. The DZ BANK banking group recognizes the investment funds held in its banking books using the transparency method and breaks them down into the primary exposure classes of the individual investment fund units. These exposures are therefore included in the Standardized Approach to credit risk and IRBA tables rather than the equity investment risk tables. The equity exposures in the investment funds are classified with a risk weight of 100 percent under the Standardized Approach to credit risk (see Fig. 43); under the IRB approach, they fall into the long-term equity investments exposure class (see Fig. 50 and Fig. 52).

Fig. 90 shows the long-term equity investments in the banking book that are risk-weighted (and consequently not consolidated, either in full or on a pro-rata basis) or are subject to a capital deduction. These are broken down by equity exposure group. The classification of investments is based on the financial nature of the equity exposure concerned. The carrying amount is the carrying amount determined in accordance with IFRS. The IFRS carrying amount of exchange-traded long-term equity investments equates to their cost. The exposures shown as 'traded equity investments' are those that are listed on a stock exchange. The market value is defined as the cash settlement price of the investment at the reporting date. The IFRS carrying amount of non-exchange-traded long-term equity investments is used as their fair value.

FIG. 90 – MEASUREMENT OF EQUITY EXPOSURES

| € million | IFRS carrying amount | | Fair value | |
|---|---|---|---|---|
| **Category of equity exposure** | **Dec. 31, 2020** | Dec. 31, 2019 | **Dec. 31, 2020** | Dec. 31, 2019 |
| Investments in credit institutions | 147 | 98 | 147 | 98 |
| of which: exchange traded | - | - | - | - |
| not exchange traded but part of a diversified | 147 | 98 | 147 | 98 |
| Other | 0 | 0 | 0 | 0 |
| Investments in finance companies | 251 | 185 | 251 | 185 |
| of which: exchange traded | - | - | - | - |
| not exchange traded but part of a diversified | 251 | 185 | 251 | 185 |
| Other | 0 | 0 | 0 | 0 |
| Investments in insurance companies | 7,048 | 6,837 | 7,048 | 6,837 |
| of which: exchange traded | - | - | - | - |
| not exchange traded but part of a diversified | 7,043 | 6,829 | 7,043 | 6,829 |
| Other | 5 | 8 | 5 | 8 |
| Investment funds held as investments in banking book | 0 | 8 | 0 | 8 |
| of which: exchange traded | 0 | - | 0 | - |
| not exchange traded but part of a diversified | 0 | 7 | 0 | 7 |
| Other | 0 | 0 | 0 | 0 |
| Investments in corporates | 208 | 165 | 208 | 165 |
| of which: exchange traded | 2 | - | 2 | - |
| not exchange traded but part of a diversified | 150 | 137 | 150 | 137 |
| Other | 56 | 28 | 56 | 28 |
| **Total** | **7,655** | **7,293** | **7,655** | **7,293** |

Fig. 91 shows the realized and unrealized gains and losses arising from the long-term equity investments held in the banking book in accordance with IFRS. The table only includes equity investments that are risk-weighted and, consequently, are not fully or proportionately consolidated or are subject to a capital deduction. The capital requirement related to equity exposures is included in Fig. 19. Consequently, no separate disclosure is provided.

FIG. 91 – GAINS AND LOSSES ON EQUITY EXPOSURES IN ACCORDANCE WITH IFRS

| € million | Realized gains and losses on disposals and liquidation | Unrealized gains and losses on equity exposures | |
|---|---|---|---|
| | | Total | of which: amounts recognized in Tier 1 capital |
| **Dec. 31, 2020** | **0** | **4,034** | **74** |
| Dec. 31, 2019 | -1 | 3,881 | 59 |

# 12 Macroprudential regulatory measures

## 12.1 Countercyclical capital buffer

(ARTICLE 440 CRR)

In accordance with Delegated Regulation (EU) 2015/1555, information about compliance with the prescribed countercyclical capital buffer has had to be disclosed since December 31, 2016.

BaFin specifies the capital buffer rate for Germany, taking account of any recommendations made by the Ausschuss für Finanzstabilität [Financial Stability Committee]. In a general administrative act dated June 28, 2019, BaFin set the domestic countercyclical capital buffer rate at 0.25 percent of the total exposure amount determined in accordance with article 92 (3) CRR with effect from July 1, 2019. This rate was originally to be used to calculate the institution-specific countercyclical capital buffer from July 1, 2020 onward. On March 18, 2020, however, BaFin decided to lower the domestic countercyclical capital buffer rate to 0 percent until December 31, 2020 as part of the relief measures introduced in connection with the COVID-19 crisis.

The institution-specific countercyclical capital buffer provides an additional capital buffer consisting of common equity Tier 1 capital that is used to contain excessive growth in lending. It can be drawn on in times of crisis and is designed to stop banks limiting their lending too much. Since March 31, 2016, the capital buffer has had to be determined at the end of each quarter for each banking group individually. In accordance with section 10d (2) KWG, the banking-group-specific buffer rate is the weighted Ø of the ratios for the countercyclical capital buffers that apply in the following regions: Germany, other countries in the European Economic Area (EEA), and in non-EEA countries as well as European and non-European countries, territories, and legal jurisdictions belonging to them in which the banking group's significant exposures defined in accordance with section 36 SolvV are located. Fig. 93 shows the geographical distribution of the relevant credit risk exposures.

Fig. 92 shows the level of the banking-group-specific countercyclical buffer.

For the calculation of the institution-specific countercyclical capital buffer as at December 31, 2020, a country-specific buffer rate of more than 0 percent was stipulated for the following six countries by their supervisory authority:

– Hong Kong: 1.00 percent
– Norway: 1.00 percent
– Slovakia: 1.00 percent
– Bulgaria: 0.50 percent
– Czech Republic: 0.50 percent
– Luxembourg: 0.25 percent.

The calculation for all other countries was based on a country-specific buffer rate of 0 percent. As at December 31, 2020, the institution-specific buffer rate was 0.01 percent (December 31, 2019: 0.05 percent). The capital requirement for the countercyclical capital buffer, calculated as the product of the institution-specific buffer rate and the total relevant exposures, came to approximately €18 million (December 31, 2019: approximately €65 million).

FIG. 92 – LEVEL OF THE INSTITUTION-SPECIFIC COUNTERCYCLICAL BUFFER

**Amount of the institution-specific countercyclical capital buffer**

| € million | | Dec. 31, 2020 | Dec. 31, 2019 |
|---|---|---|---|
| 010 | Total exposure | 147,252 | 143,800 |
| 020 | Institution-specific countercyclical capital buffer rate (as a percentage of total exposure) | 0.012 | 0.045 |
| 030 | Institution-specific countercyclical capital buffer requirement | 18 | 65 |

FIG. 93 – GEOGRAPHICAL DISTRIBUTION OF THE CREDIT EXPOSURES RELEVANT TO THE CALCULATION OF THE COUNTERCYCLICAL CAPITAL BUFFER

In column 120 of this table, the dash ‘ - ’ means either ‘no figure available’ or ‘capital buffer rate of 0 percent’.

| | | General credit risk exposures | | General credit risk exposures | | Securitization exposures | | Capital requirements | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Exposure (CRSA) | Exposure (IRB) | Total long and short positions in the trading book | Value of the exposure in the trading book (internal models) | Exposure (CRSA) | Exposure (IRB) | of which: general credit risk exposures | of which: general credit risk exposures | of which: securitization exposures | Total | Weighting of capital requirements | Rate of the countercyclical capital buffer as at Dec. 31, 2020 (%) | Rate of the countercyclical capital buffer as at Dec. 31, 2019 (%) |
| € million | | 010 | 020 | 030 | 040 | 050 | 060 | 070 | 080 | 090 | 100 | 110 | 120 | 120 |
| 010 | Breakdown by country | | | | | | | | | | | | | |
| | Germany | 14,144 | 93,319 | 17 | - | 3,110 | - | 4,665 | 0 | 129 | 4,876 | 100.00 | - | - |
| | Egypt | 112 | 12 | - | - | - | - | 0 | - | - | 0 | - | - | - |
| | Albania | 0 | - | - | - | - | - | 0 | - | - | 0 | - | - | - |
| | Andorra | 0 | - | - | - | - | - | 0 | - | - | 0 | - | - | - |
| | Angola | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | Argentina | 9 | 9 | - | - | - | - | 1 | - | - | 1 | - | - | - |
| | Azerbaijan | 41 | - | - | - | - | - | 3 | - | - | 3 | - | - | - |
| | Ethiopia | 0 | - | - | - | - | - | 0 | - | - | 0 | - | - | - |
| | Australia | 43 | 626 | - | - | 16 | - | 37 | - | 4 | 40 | - | - | - |
| | Bahamas | - | 53 | - | - | - | - | 2 | - | - | 2 | - | - | - |
| | Bahrain | 1 | 32 | - | - | - | - | 2 | - | - | 2 | - | - | - |
| | Bangladesh | 12 | - | - | - | - | - | 0 | - | - | 0 | - | - | - |
| | Belgium | 229 | 136 | - | - | - | - | 18 | - | - | 18 | - | - | - |
| | Bermuda | 0 | 261 | - | - | - | - | 4 | - | - | 4 | - | - | - |
| | Bolivia | 0 | - | - | - | - | - | 0 | - | - | 0 | - | - | - |
| | Brazil | 10 | 19 | - | - | - | - | 0 | - | - | 0 | - | - | - |
| | British Virgin | 20 | 45 | - | - | - | - | 1 | - | - | 1 | - | - | - |
| | Bulgaria | 0 | 4 | - | 0 | - | - | 0 | 0 | - | 0 | - | 0.000 | - |
| | Burkina Faso | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | Burundi | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | Cayman Islands | 91 | 104 | - | - | - | - | 4 | - | - | 4 | - | - | - |
| | Chile | 1 | 31 | - | - | - | - | 0 | - | - | 0 | - | - | - |
| | China | 72 | 328 | - | - | - | - | 5 | - | - | 5 | - | - | - |
| | Costa Rica | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | Denmark | 39 | 312 | - | 9 | - | - | 16 | 1 | - | 17 | - | - | 0.000 |
| | Dominican Republic | 1 | 0 | - | - | - | - | 0 | - | - | 0 | - | - | - |
| | Ecuador | 0 | - | - | - | - | - | 0 | - | - | 0 | - | - | - |

| | General credit risk exposures | | General credit risk exposures | | Securitization exposures | | Capital requirements | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Exposure (CRSA) | Exposure (IRB) | Total long and short positions in the trading book | Value of the exposure in the trading book (internal models) | Exposure (CRSA) | Exposure (IRB) | of which: general credit risk exposures | of which: general credit risk exposures | of which: securitization exposures | Total | Weighting of capital requirements | Rate of the countercyclical capital buffer as at Dec. 31, 2020 (%) | Rate of the countercyclical capital buffer as at Dec. 31, 2019 (%) |
| € million | 010 | 020 | 030 | 040 | 050 | 060 | 070 | 080 | 090 | 100 | 110 | 120 | 120 |
| El Salvador | 0 | - | - | - | - | - | 0 | - | - | 0 | - | - | - |
| Côte d'Ivoire | 27 | - | - | - | - | - | 0 | - | - | 0 | - | - | - |
| Eritrea | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Estonia | 0 | - | - | - | - | - | 0 | - | - | 0 | - | - | - |
| Faroe Islands | - | 9 | - | - | - | - | - | - | - | - | - | - | - |
| Finland | 79 | 93 | - | - | 20 | - | 10 | - | 0 | 10 | - | - | - |
| France | 446 | 1,747 | 33 | 34 | 183 | - | 92 | 3 | 5 | 99 | - | - | - |
| Gabon | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Georgia | 0 | - | - | - | - | - | 0 | - | - | 0 | - | - | - |
| Ghana | 47 | 5 | - | - | - | - | 4 | - | - | 4 | - | - | - |
| Gibraltar | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Greece | 4 | 2 | - | - | - | - | 0 | - | - | 0 | - | - | - |
| United Kingdom | 187 | 1,362 | 67 | 46 | 413 | - | 68 | 4 | 22 | 93 | - | - | 0.000 |
| Guatemala | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Guernsey | 18 | 62 | - | - | - | - | 3 | - | - | 3 | - | - | - |
| Honduras | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Hong Kong | 33 | 122 | - | 3 | - | - | 5 | 0 | - | 6 | - | 0.000 | 0.000 |
| India | 29 | 193 | - | - | - | - | 9 | - | - | 9 | - | - | - |
| Indonesia | 187 | - | - | - | - | - | 4 | - | - | 4 | - | - | - |
| Iraq | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Iran | - | 1 | - | - | - | - | - | - | - | - | - | - | - |
| Ireland | 188 | 235 | 79 | 9 | 14 | - | 19 | 1 | 3 | 23 | - | - | 0.000 |
| Iceland | - | - | - | - | - | - | - | - | - | - | - | - | 0.000 |
| Isle of Man | 0 | 76 | - | - | - | - | 0 | - | - | 0 | - | - | - |
| Israel | 1 | 4 | - | - | - | - | 0 | - | - | 0 | - | - | - |
| Italy | 102 | 83 | - | - | 17 | - | 13 | - | 1 | 14 | - | - | - |
| Jamaica | 0 | - | - | - | - | - | 0 | - | - | 0 | - | - | - |
| Japan | 26 | 260 | - | - | - | - | 3 | - | - | 3 | - | - | - |
| Jersey | 4 | 86 | - | - | - | - | 1 | - | - | 1 | - | - | - |
| Jordan | 0 | - | - | - | - | - | 0 | - | - | 0 | - | - | - |
| Canada | 398 | 480 | - | - | - | - | 34 | - | - | 34 | - | - | - |
| Kazakhstan | 1 | - | - | - | - | - | 0 | - | - | 0 | - | - | - |
| Qatar | 12 | 93 | - | - | - | - | 8 | - | - | 8 | - | - | - |
| Kenya | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Colombia | 3 | - | - | - | - | - | 0 | - | - | 0 | - | - | - |
| Korea | 17 | 12 | - | - | - | - | 1 | - | - | 1 | - | - | - |
| Croatia | 0 | - | - | - | - | - | 0 | - | - | 0 | - | - | - |
| Kuwait | 56 | 64 | - | - | - | - | 4 | - | - | 4 | - | - | - |
| Latvia | 0 | - | - | - | - | - | 0 | - | - | 0 | - | - | - |
| Lebanon | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Liberia | 0 | 673 | - | - | - | - | 8 | - | - | 8 | - | - | - |
| Liechtenstein | 16 | 6 | - | - | - | - | 1 | - | - | 1 | - | - | - |
| Lithuania | 0 | - | - | - | - | - | 0 | - | - | 0 | - | - | 0.000 |
| Luxembourg | 1,088 | 5,101 | 60 | 53 | - | - | 244 | 4 | - | 248 | - | 0.000 | - |
| Malaysia | 0 | 125 | - | - | - | - | 9 | - | - | 9 | - | - | - |
| Malta | 20 | 208 | - | - | - | - | 5 | - | - | 5 | - | - | - |
| Morocco | 2 | 0 | - | - | - | - | 0 | - | - | 0 | - | - | - |

| € million | General credit risk exposures | | General credit risk exposures | | Securitization exposures | | Capital requirements | | | | Weighting of capital requirements | Rate of the countercyclical capital buffer as at Dec. 31, 2020 (%) | Rate of the countercyclical capital buffer as at Dec. 31, 2019 (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Exposure (CRSA) | Exposure (IRB) | Total long and short positions in the trading book | Value of the exposure in the trading book (internal models) | Exposure (CRSA) | Exposure (IRB) | of which: general credit risk exposures | of which: general credit risk exposures | of which: securitization exposures | Total | | | |
| | 010 | 020 | 030 | 040 | 050 | 060 | 070 | 080 | 090 | 100 | 110 | 120 | 120 |
| Marshall Islands | 44 | 1,167 | - | - | - | - | 24 | - | - | 24 | - | - | - |
| Mauritius | 0 | - | - | - | - | - | 0 | - | - | 0 | - | - | - |
| Mexico | 92 | 91 | - | - | - | - | 10 | - | - | 10 | - | - | - |
| Monaco | - | 28 | - | - | - | - | 0 | - | - | 0 | - | - | - |
| Mongolia | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Montenegro | 0 | - | - | - | - | - | 0 | - | - | 0 | - | - | - |
| Mozambique | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Myanmar | - | 4 | - | - | - | - | 0 | - | - | 0 | - | - | - |
| Namibia | 0 | 1 | - | - | - | - | 0 | - | - | 0 | - | - | - |
| New Zealand | 36 | 65 | - | - | - | - | 5 | - | - | 5 | - | - | - |
| Netherlands | 1,048 | 2,264 | 69 | - | 574 | - | 175 | - | 19 | 194 | - | - | - |
| Netherlands Antilles | 0 | - | - | - | - | - | 0 | - | - | 0 | - | - | - |
| Nigeria | 0 | 54 | - | - | - | - | 6 | - | - | 6 | - | - | - |
| Norway | 35 | 573 | - | 4 | - | - | 10 | 0 | - | 10 | - | 0.000 | 0.000 |
| Oman | 1 | 15 | - | - | - | - | 1 | - | - | 1 | - | - | - |
| Austria | 264 | 1,059 | - | - | - | - | 56 | - | - | 56 | - | - | - |
| Pakistan | 0 | - | - | - | - | - | 0 | - | - | 0 | - | - | - |
| Panama | 1 | 317 | - | - | - | - | 13 | - | - | 13 | - | - | - |
| Paraguay | 11 | - | - | - | - | - | 0 | - | - | 0 | - | - | - |
| Peru | 40 | 15 | - | - | - | - | 4 | - | - | 4 | - | - | - |
| Philippines | 5 | 42 | - | - | - | - | 4 | - | - | 4 | - | - | - |
| Poland | 9 | 94 | - | - | - | - | 4 | - | - | 4 | - | - | - |
| Portugal | 11 | 18 | - | - | 60 | - | 2 | - | 2 | 3 | - | - | - |
| Romania | 0 | 0 | - | - | - | - | 0 | - | - | 0 | - | - | - |
| Russia | 8 | 533 | - | - | - | - | 23 | - | - | 23 | - | - | - |
| Saudi Arabia | 24 | 99 | - | - | - | - | 6 | - | - | 6 | - | - | - |
| Sweden | 33 | 319 | - | 4 | - | - | 12 | 0 | - | 12 | - | - | 0.000 |
| Switzerland | 213 | 1,041 | - | - | 77 | - | 65 | - | 2 | 67 | - | - | - |
| Senegal | 0 | - | - | - | - | - | 0 | - | - | 0 | - | - | - |
| Serbia and Kosovo | 1 | - | - | - | - | - | 0 | - | - | 0 | - | - | - |
| Singapore | 55 | 588 | - | - | - | - | 24 | - | - | 24 | - | - | - |
| Slovakia | - | - | - | - | - | - | - | - | - | - | - | 0.000 | 0.000 |
| Slovenia | 0 | 1 | - | - | - | - | 0 | - | - | 0 | - | - | - |
| Spain | 118 | 215 | 2 | - | 353 | - | 13 | - | 15 | 28 | - | - | - |
| Sri Lanka | 0 | - | - | - | - | - | 0 | - | - | 0 | - | - | - |
| South Africa | 3 | 0 | - | - | - | - | 0 | - | - | 0 | - | - | - |
| Syria | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Taiwan | 0 | 42 | - | - | - | - | 3 | - | - | 3 | - | - | - |
| Thailand | 0 | 25 | - | - | - | - | 2 | - | - | 2 | - | - | - |
| Togo | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Czech Republic | 1 | 26 | - | 1 | - | - | 1 | 0 | - | 1 | - | 0.005 | 0.000 |
| Tunisia | 0 | 0 | - | - | - | - | 0 | - | - | 0 | - | - | - |
| Turkey | 285 | 180 | - | - | - | - | 4 | - | - | 4 | - | - | - |
| Ukraine | 3 | 0 | - | - | - | - | 0 | - | - | 0 | - | - | - |
| Hungary | 1 | 33 | - | - | - | - | 2 | - | - | 2 | - | - | - |
| Uruguay | 0 | - | - | - | - | - | 0 | - | - | 0 | - | - | - |
| USA | 716 | 2,831 | - | - | 2,319 | - | 158 | - | 133 | 291 | - | - | - |

| | | General credit risk exposures | | General credit risk exposures | | Securitization exposures | | Capital requirements | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Exposure (CRSA) | Exposure (IRB) | Total long and short positions in the trading book | Value of the exposure in the trading book (internal models) | Exposure (CRSA) | Exposure (IRB) | of which: general credit risk exposures | of which: general credit risk exposures | of which: securitization exposures | Total | Weighting of capital requirements | Rate of the countercyclical capital buffer as at Dec. 31, 2020 (%) | Rate of the countercyclical capital buffer as at Dec. 31, 2019 (%) |
| € million | | 010 | 020 | 030 | 040 | 050 | 060 | 070 | 080 | 090 | 100 | 110 | 120 | 120 |
| | Uzbekistan | 0 | - | - | - | - | - | 0 | - | - | 0 | - | - | - |
| | Venezuela | 0 | - | - | - | - | - | 0 | - | - | 0 | - | - | - |
| | United Arab | 14 | 151 | - | - | - | - | 8 | - | - | 8 | - | - | - |
| | Vietnam | 140 | 12 | - | - | - | - | 1 | - | - | 1 | - | - | - |
| | Belarus | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | Zambia | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | Cyprus | 28 | 14 | - | - | - | - | 3 | - | - | 3 | - | - | - |
| | Other countries | 37 | - | - | - | - | - | 3 | - | - | 3 | - | - | - |
| 020 | **Total** | 21,086 | 118,312 | 327 | 162 | 7,156 | - | 5,949 | 13 | 333 | 6,378 | 100.00 | 0.012 | 0.045 |

## 12.2 Indicators of global systemic importance

(ARTICLE 441 CRR)

BaFin has classified DZ BANK as an other systemically important institution (O-SII) since 2016.

As the DZ BANK banking group's total exposure measure within the meaning of article 429 (4) CRR exceeds €200.0 billion, DZ BANK is obliged, in accordance with section 10f (4) KWG, to conduct a quantitative analysis each year of the indicators for determining global systemic importance on the basis of the technical standard EBA/ITS/2016/01 and to disclose the resulting values.

Fig. 94 below shows the key figures for determining global systemic importance. They are disclosed on DZ BANK's website in the Investor Relations section under Reports/Reports 2020.

FIG. 94 – KEY FIGURES FOR GLOBAL SYSTEMIC IMPORTANCE

| Indicator | Key figure |
|---|---|
| Size | Total exposure |
| Interconnectedness | Intra-financial system assets |
| | Intra-financial system liabilities |
| | Securities outstanding |
| Substitutability/financial institution infrastructure | Payments activity (financial year) |
| | Assets under custody |
| | Underwritten transactions (financial year) |
| Complexity | Notional amount of OTC derivatives |
| | Trading and available-for-sale securities |
| | Level 3 assets |
| Cross-jurisdictional activity | Cross-jurisdictional claims |
| | Cross-jurisdictional liabilities |

# 13 Leverage ratio

## 13.1 Leverage pursuant to the CRR framework

(ARTICLE 451 (1) LETTERS A, B, C, D, AND E CRR)

The **leverage ratio** is the ratio of the banking group's Tier 1 capital to its total exposure – comprising on-balance-sheet and off-balance-sheet items (including derivatives). In contrast to risk-based capital requirements, the individual exposures are not given a credit-rating-related risk weight but are generally included in the total exposure without being weighted. The leverage ratio thus represents a risk-neutral capital ratio. A low ratio therefore indicates a high level of debt in relation to Tier 1 capital. The purpose of the leverage ratio is to prevent the build-up of unsustainable leverage in the banking industry.

Disclosure of the leverage ratio is based on the provisions of Implementing Regulation (EU) 2016/200 dated February 15, 2016 and the EBA guideline EBA/GL/2020/11 and is carried out at consolidated level. In accordance with article 499 (1) letter b CRR, the capital measure is based on Tier 1 capital. The total exposure measure is calculated in accordance with article 429 et seq. CRR (as amended by Delegated Regulation (EU) 2015/62, which came into force on January 17, 2015).

The DZ BANK banking group's leverage ratio pursuant to the CRR transitional guidance was 5.76 percent as at December 31, 2020 (June 30, 2020: 4.74 percent). Applying the CRR in full (with regard to own funds calculated according to CRR rules and the currently applicable CRR II transitional provisions), the ratio was 5.59 percent (June 30, 2020: 4.60 percent). The updated IFRS 9 transitional provisions were applied pursuant to article 473a CRR. The quantitative effect of this transitional provision on the leverage ratio is shown in section 4.2.1 (see Fig. 13).

On September 17, 2020, the ECB announced that the banks under its direct supervision in the eurozone were permitted to exclude certain exposures to central banks from the leverage ratio. The move is aimed at easing the implementation of monetary policy. This decision by the ECB's banking supervision function came after the Governing Council of the ECB, in its capacity as monetary authority of the eurozone, confirmed that there were exceptional circumstances due to the COVID-19 pandemic. This relief measure is available until June 27, 2021. The regulatory basis is Regulation (EU) 2020/873 of the European Parliament and of the Council dated June 24, 2020 amending Regulation (EU) No. 575/2013 and Regulation (EU) 2019/876 as regards certain adjustments in response to the COVID-19 pandemic. The DZ BANK banking group decided to exercise this option. Exposures to central banks in the Eurosystem, deposits held in the deposit facility, and balances held in reserve accounts in the Eurosystem, including the funds held to satisfy minimum reserve requirements, were therefore excluded from the total exposure measure. The material impact of exercising this option is shown in Fig. 95.

Fig. 95 sets out the components and level of the leverage ratio, both applying the CRR transitional guidance (phase-in) and applying the CRR in full.

FIG. 95 – LEVERAGE RATIO ACCORDING TO THE CRR TRANSITIONAL GUIDANCE AND AFTER FULL APPLICATION OF THE CRR

| | Leverage ratio according to CRR transitional guidance | | Leverage ratio after full application of the CRR | |
|---|---|---|---|---|
| | **Dec. 31, 2020** | Jun. 30, 2020 | **Dec. 31, 2020** | Jun. 30, 2020 |
| Regulatory Tier 1 capital (€ million) | 25,078 | 23,854 | 24,335 | 23,140 |
| Total exposure measure (€ million) | 435,307 | 503,576 | 435,145 | 503,576 |
| Leverage ratio as at the balance sheet date (%) | 5.76 | 4.74 | 5.59 | 4.60 |

Fig. 96 shows the reconciliation of the total assets of the DZ BANK Group to the leverage ratio total exposure measure of the DZ BANK banking group, applying the CRR transitional guidance.

FIG. 96 – LRSUM – SUMMARY RECONCILIATION OF ASSETS ON THE BALANCE SHEET TO THE LEVERAGE RATIO TOTAL EXPOSURE MEASURE

**Summary reconciliation of total assets and total exposure measure**

| € million | | Applicable amounts | |
|---|---|---|---|
| | | **Dec. 31, 2020** | **Jun. 30, 2020** |
| 1 | Total assets as per published financial statements | 594,573 | 604,196 |
| 2 | Adjustment for entities that are consolidated for accounting purposes but are outside the scope of regulatory consolidation | -115,734 | -110,206 |
| 3 | Adjustment for trust assets recognized on the balance sheet pursuant to the applicable accounting framework but excluded from the leverage ratio total exposure measure in accordance with article 429 (13) of Regulation (EU) No. 575/2013 | - | - |
| 4 | Adjustments for derivatives | -13,420 | -15,395 |
| 5 | Adjustments for securities financing transactions (SFTs) | 957 | 1,091 |
| 6 | Adjustment for off-balance-sheet items (i.e. conversion to credit equivalent amounts of off-balance-sheet exposures) | 30,304 | 27,467 |
| EU-6a | Adjustment for intragroup exposures excluded from the leverage ratio total exposure measure in accordance with article 429 (7) of Regulation (EU) No. 575/2013 | - | - |
| EU-6b | Adjustment for exposures excluded from the leverage ratio total exposure measure in accordance with article 429 (14) of Regulation (EU) No. 575/2013 | -61,989 | - |
| 7 | Other adjustments | 616 | -3,576 |
| **8** | **Leverage ratio total exposure measure** | **435,307** | **503,576** |

Fig. 97 shows individual components of the total exposure measure, Tier 1 capital, and the DZ BANK banking group's resulting leverage ratio as at December 31, 2020, applying the CRR transitional guidance.

FIG. 97 – LRCOM – LEVERAGE RATIO COMMON DISCLOSURE

| Leverage ratio exposures | | | |
|---|---|---|---|
| | | Applicable amounts | |
| € million | | Dec. 31, 2020 | Jun. 30, 2020 |
| **On-balance-sheet exposures (excluding derivatives and SFTs)** | | | |
| 1 | On-balance sheet items (excluding derivatives, SFTs, and trust assets but including collateral) | 449,082 | 454,176 |
| 2 | Asset amounts deducted in determining Tier 1 capital | -543 | -720 |
| 3 | Total on-balance-sheet exposures (excluding derivatives, SFTs, and trust assets) (sum of lines 1 and 2) | 448,538 | 453,456 |
| **Derivative exposures** | | | |
| 4 | Replacement cost associated with all derivatives transactions (i.e. net of eligible cash variation margin) | 7,933 | 7,944 |
| 5 | Add-on amounts for PFE associated with all derivatives transactions (mark-to-market method) | 10,208 | 9,878 |
| EU-5a | Exposure determined under Original Exposure Method | - | - |
| 6 | Gross-up for derivatives collateral provided where deducted from the balance sheet assets pursuant to the applicable accounting framework | - | - |
| 7 | Deductions of receivables assets for cash variation margin provided in derivatives transactions | -7,567 | -8,670 |
| 8 | Exempted CCP leg of client-cleared SFT exposure | -1,529 | -1,423 |
| 9 | Adjusted effective notional amount of written credit derivatives | 14,621 | 14,915 |
| 10 | Adjusted effective notional offsets and add-on deductions for written credit derivatives | -12,132 | -12,487 |
| 11 | Total derivatives exposures | 11,534 | 10,158 |
| **SFT exposures** | | | |
| 12 | Gross SFT assets (with no recognition of netting), after adjusting for sales accounting | 8,453 | 13,833 |
| 13 | Netted amounts of cash payables and cash receivables of gross SFT assets | - | - |
| 14 | Counterparty credit risk exposure for SFT assets | 957 | 1,091 |
| EU-14a | Derogation for SFTs: Counterparty credit risk exposure in accordance with articles 429b (4) and 222 of Regulation (EU) No. 575/2013 | - | - |
| 15 | Agent transaction exposures | - | - |
| EU-15a | Exempted CCP leg of client-cleared SFT exposure | - | - |
| 16 | Total securities financing transaction exposures (sum of lines 12 to 15a) | 9,410 | 14,924 |
| **Other off-balance-sheet exposures** | | | |
| 17 | Off-balance-sheet exposures at gross notional amount | 78,966 | 73,201 |
| 18 | Adjustments for conversion to credit equivalent amounts | -51,152 | -48,162 |
| 19 | Other off-balance-sheet exposures (sum of lines 17 and 18) | 27,814 | 25,039 |
| EU-19a | Intragroup exposures (solo basis) exempted in accordance with article 429 (7) of Regulation (EU) No. 575/2013 (on and off balance sheet) | - | - |
| EU-19b | Exempted exposures in accordance with article 429 (14) of Regulation (EU) No. 575/2013 (on and off balance sheet) | -61,989 | - |
| **Capital and total exposure measure** | | | |
| 20 | Tier 1 capital | 25,078 | 23,854 |
| 21 | Leverage ratio total exposure measure (sum of lines 3, 11, 16, 19, EU-19a, and EU-19b) | 435,307 | 503,576 |
| **Leverage ratio** | | | |
| 22 | Leverage ratio according to CRR transitional guidance (%) | 5.76 | 4.74 |
| EU-22a | Leverage ratio (excluding the impact of any applicable temporary exemption of central bank exposures) | 5.04 | - |
| **Choice of transitional guidance and amount of derecognized trust items** | | | |
| EU-23 | Choice of transitional guidance for the definition of the capital measure | CRR transitional guidance | |
| EU-24 | Amount of derecognized trust assets in accordance with article 429 (13) of Regulation (EU) No. 575/2013 | - | - |

Applying the CRR transitional guidance, the DZ BANK banking group's leverage ratio rose by 1.02 percentage points to 5.76 percent as at the reporting date. This was mainly because the total exposure measure decreased by €68,269 million to €435,307 million (June 30, 2020: €503,576 million) and, at the same time, Tier 1 capital went up by €1,224 million to €25,078 million (June 30, 2020: €23,854 million).

The decrease in the total exposure measure of the DZ BANK banking group during the six-month period was mainly due to the following effect. There was a decrease in the on-balance-sheet exposures in the second half of 2020, mainly in the central governments and central banks exposure class due to the first-time application of the aforementioned exemption from including central bank exposures of €61,989 million. Details of the main drivers of the change in Tier 1 capital can be found in section 4.2 of this report.

Fig. 98 provides an alternative breakdown by regulatory category of the exposures reported on the balance sheet.

FIG. 98 – LRSPL – BREAKDOWN OF ON-BALANCE-SHEET EXPOSURES (EXCLUDING DERIVATIVES, SFTS AND EXEMPTED EXPOSURES)

| Leverage ratio exposures | | | |
|---|---|---|---|
| | | Applicable amounts | |
| € million | | Dec. 31, 2020 | Jun. 30, 2020 |
| EU-1 | Total on-balance-sheet exposures (excluding derivatives, SFTs, and exempted exposures) | 378,989 | 445,025 |
| EU-2 | of which: Trading book exposures | 12,789 | 14,472 |
| EU-3 | Banking book exposures, of which: | 366,200 | 430,553 |
| EU-4 | Covered bonds | 10,961 | 11,031 |
| EU-5 | Exposures treated as sovereigns | 55,761 | 125,880 |
| EU-6 | Exposures to regional governments, multilateral development banks, international organizations, and public-sector entities not treated as sovereigns | 1,964 | 1,972 |
| EU-7 | Institutions | 101,624 | 98,977 |
| EU-8 | Secured by mortgages on immovable property | 93,723 | 90,103 |
| EU-9 | Retail exposures | 19,356 | 19,514 |
| EU-10 | Corporates | 60,607 | 61,893 |
| EU-11 | Exposures in default | 2,251 | 2,533 |
| EU-12 | Other exposures (e.g. long-term equity investments, securitizations, and other non-credit-obligation assets) | 19,952 | 18,649 |

## 13.2 Description of the process for monitoring the risk of excessive leverage

(ARTICLE 451 SENTENCE 1 LETTER D CRR)

In the strategic planning process, the Board of Managing Directors sets out the bank's overall strategy and the allocation of resources for the individual management units. The risk of excessive leverage is taken into consideration by reflecting the leverage ratio in the planning and management process. This involves monitoring compliance with internally defined thresholds on a quarterly basis. Within these guidelines, the Treasury and Capital Committee operates with the aim of optimizing the overall portfolio over the course of the year. Detailed plan-versus-actual analysis is carried out for all relevant management units on the basis of the bank's internal target to determine where the actual resource situation has deviated from the original projection. This process also highlights the factors driving these deviations. The latest changes to the leverage ratio and details of its influencing factors are reported on as part of DZ BANK's internal management reporting, which is an integral element of the bank's internal planning and management process. In its management role, the Treasury and Capital Committee also identifies the action required and instigates mitigation steps or optimization measures. In this capacity, the Treasury and Capital Committee makes decisions directly, issues recommendations or, if necessary, submits proposals on specific management actions to the Board of Managing Directors for adoption of a resolution.

## 13.3 Other factors influencing the leverage ratio

(ARTICLE 451 SENTENCE 1 LETTER E CRR)

With effect from June 28, 2021, adjustments will be made to the calculation of the total exposure measure as part of the first-time application of the provisions of CRR II. In this context, the DZ BANK banking group's leverage ratio is expected to rise, primarily due to two countervailing effects. Firstly, the total exposure measure is predicted to fall substantially because more exposures within the cooperative financial network will not have to be included. Secondly, the temporary exemption from including certain central bank exposures will expire. Overall, the DZ BANK banking group's leverage ratio is expected to rise by around 0.4 percentage points.

# 14 Asset encumbrance

(ARTICLE 443 CRR)

According to the regulatory disclosure requirements in article 443 CRR in conjunction with Delegated Regulation (EU) 2017/2295 dated December 13, 2017, which is based on EBA/GL/2014/03 and replaced the requirements therein when it came into effect, information on encumbered and unencumbered assets (asset encumbrance) has to be disclosed. These disclosure requirements are defined in more detail and expanded in Delegated Regulation (EU) 2017/2295. The following disclosure of asset encumbrance is based on the requirements in this Delegated Regulation.

The encumbered and unencumbered assets are disclosed for the companies consolidated for regulatory purposes pursuant to article 18 CRR.

However, the disclosure of the quality of the encumbered and unencumbered assets ((E)HQLA) is based on the scope of consolidation used for liquidity purposes pursuant to article 18 (1) CRR. The differences between the scopes of consolidation are set out in section 3 of this report.

For the purposes of the DZ BANK banking group's reporting and disclosure, the carrying amounts of encumbered and unencumbered assets are calculated according to the provisions of International Financial Reporting Standards (IFRS). There are no significant differences between the calculation methods applied to the encumbered assets for the asset encumbrance reporting and to the assets presented in accordance with IFRS in the notes to the financial statements in the Annual Report that have been pledged or transferred.

Accordingly, assets that have been pledged as collateral or are the subject of any agreement to collateralize or credit enhance any on-balance-sheet or off-balance-sheet transaction must be treated as encumbered. In addition to the disclosures in the notes to the consolidated financial statements in the Annual Report, the DZ BANK banking group's cover pools held in trust and the derivative receivables in netting master agreements, for which there are equivalent derivative liabilities, are included as encumbered assets in the asset encumbrance reporting.

FINREP validation also takes place as part of asset encumbrance reporting. This ensures that the totals of the unencumbered and encumbered assets in the asset encumbrance reporting match those of the assets in the FINREP reporting.

The following disclosures are based on the DZ BANK banking group's asset encumbrance reporting in 2020. The carrying amounts and fair values of the encumbered and unencumbered assets are disclosed. The fair value of the (repledged) collateral received is disclosed. The median values at the end of each of the four past quarters (reporting dates in 2020: March 31, June 30, September 30, and December 31) are presented for each line item. The totals are calculated from the median values at the end of the four past quarters in the asset encumbrance reporting. Consequently, the totals disclosed may vary from the totals calculated from the individual values.

The DZ BANK banking group's asset encumbrance ratio for 2020 was 39.77 percent. This is the ratio of the median values shown for the totals of the encumbered assets recognized on the balance sheet plus collateral received and re-used to the median values for the total assets plus collateral received.

FIG. 99 – ASSET ENCUMBRANCE AS AT DECEMBER 31, 2020 AND DECEMBER 31, 2019

| | | Carrying amount of encumbered assets | | Fair value of encumbered assets | | Carrying amount of unencumbered assets | | Fair value of unencumbered assets | |
|---|---|---|---|---|---|---|---|---|---|
| | | | of which: notionally eligible as EHQLAs and HQLAs | | of which: notionally eligible as EHQLAs and HQLAs | | of which: EHQLAs and HQLAs | | of which: EHQLAs and HQLAs |
| € million | | 010 | 030 | 040 | 050 | 060 | 080 | 090 | 100 |
| | | Dec. 31, 2020 | | | | | | | |
| 010 | Assets of the reporting institution | 190,793 | 21,690 | | | 294,233 | 97,178 | | |
| 030 | Equity instruments | 290 | - | | | 2,644 | - | | |
| 040 | Debt securities | 25,969 | 21,690 | 26,213 | 21,898 | 38,828 | 26,435 | 39,926 | 26,827 |
| 050 | of which: covered bonds | 6,366 | 5,780 | 6,449 | 5,807 | 6,137 | 4,774 | 6,293 | 4,850 |
| 060 | of which: asset-backed securities | 740 | - | 714 | - | 1,220 | 866 | 1,096 | 866 |
| 070 | of which: issued by general governments | 13,175 | 12,302 | 13,204 | 12,373 | 14,234 | 13,080 | 13,904 | 13,333 |
| 080 | of which: issued by financial corporations | 11,777 | 8,542 | 11,951 | 8,641 | 20,149 | 11,018 | 20,867 | 11,155 |
| 090 | of which: issued by non-financial corporations | 1,689 | 1,124 | 1,718 | 1,128 | 4,241 | 1,615 | 4,533 | 1,639 |
| 120 | Other assets | 163,455 | - | | | 252,521 | 71,332 | | |
| 121 | of which: loans that can be terminated on demand | 6,904 | - | | | 76,813 | 71,189 | | |
| 122 | of which: loans and advances other than loans that can be terminated on demand | 139,726 | - | | | 154,610 | - | | |
| 123 | of which: mortgages | 45,241 | - | | | - | - | | |

| | | 010 | 040 | 060 | 090 |
|---|---|---|---|---|---|
| € million | | Carrying amount of encumbered assets | Fair value of encumbered assets | Carrying amount of unencumbered assets | Fair value of unencumbered assets |
| | | Dec. 31, 2019 | | | |
| 010 | Assets of the reporting institution | 171,579 | | 284,923 | |
| 030 | Equity instruments | 427 | | 2,382 | |
| 040 | Debt securities | 17,975 | 18,184 | 41,400 | 42,674 |
| 050 | of which: covered bonds | 1,438 | 1,498 | 9,108 | 9,341 |
| 060 | of which: asset-backed securities | 0 | 0 | 1,804 | 1,705 |
| 070 | of which: issued by general governments | 12,409 | 12,374 | 13,157 | 13,719 |
| 080 | of which: issued by financial corporations | 5,082 | 5,195 | 23,975 | 24,546 |
| 090 | of which: issued by non-financial corporations | 698 | 718 | 4,524 | 4,820 |
| 120 | Other assets | 154,125 | | 244,072 | |
| 121 | of which: loans that can be terminated on demand | 6,032 | | 69,382 | |
| 122 | of which: loans and advances other than loans that can be terminated on demand | 132,638 | | 149,150 | |

FIG. 100 – COLLATERAL RECEIVED

| € million | | Fair value of encumbered collateral received or own debt securities issued | of which: notionally eligible as EHQLAs and HQLAs | Fair value of collateral received or own debt securities issued available for encumbrance | of which: EHQLAs and HQLAs | Fair value of encumbered collateral received or own debt securities issued | Fair value of collateral received or own debt securities issued available for encumbrance |
|---|---|---|---|---|---|---|---|
| | | Dec. 31, 2020 | | | | Dec. 31, 2019 | |
| | | 010 | 030 | 040 | 060 | 010 | 040 |
| **130** | **Collateral received by the reporting institution** | **9,673** | **9,460** | **9,400** | **3,677** | **10,915** | **8,948** |
| 140 | Loans that can be terminated on demand | - | - | - | - | - | - |
| 150 | Equity instruments | 18 | - | 1,642 | - | 18 | 1,459 |
| 160 | Debt securities | 9,650 | 9,460 | 7,758 | 3,677 | 10,890 | 7,320 |
| 170 | of which: covered bonds | 547 | 438 | 1,344 | 975 | 314 | 1,866 |
| 180 | of which: asset-backed | - | - | - | - | - | - |
| 190 | of which: issued by general governments | 7,988 | 8,188 | 1,938 | 1,898 | 7,911 | 1,943 |
| 200 | of which: issued by financial corporations | 1,716 | 1,280 | 5,320 | 1,180 | 2,438 | 4,862 |
| 210 | of which: issued by non-financial corporations | 70 | 46 | 266 | 81 | 101 | 299 |
| 220 | Loans and advances other than loans that can be terminated on demand | - | - | - | - | - | - |
| 230 | Other collateral received | - | - | 7 | - | - | 8 |
| **240** | Own debt securities issued other than own covered bonds or asset-backed securities | - | - | 10,229 | - | - | **7,127** |
| **241** | Own covered bonds and asset-backed securities issued and not yet pledged | | | 1,081 | - | | **1,186** |
| **250** | **Total assets, collateral received, and own debt securities issued** | **199,302** | **29,772** | | | **182,495** | |

The increase in the asset encumbrance ratio from 38.31 percent as at December 31, 2019 to 39.77 percent as at the reporting date was largely due to the rise in encumbered assets. In particular, there was an increase in collateralized deposits due to the higher volume of development loans and long-term refinancing operations.

FIG. 101 – SOURCES OF ENCUMBRANCE

| | | Matching liabilities, contingent liabilities, or securities lent | Assets, collateral received, and own debt securities issued other than covered bonds and ABSs encumbered | Matching liabilities, contingent liabilities, or securities lent | Assets, collateral received, and own debt securities issued other than covered bonds and ABSs encumbered |
|---|---|---|---|---|---|
| | | Dec. 31, 2020 | | Dec. 31, 2019 | |
| | | 010 | 030 | 010 | 030 |
| 010 | Carrying amount of selected financial liabilities | 168,042 | 193,934 | 155,278 | 169,718 |
| 011 | of which: derivatives | 20,195 | 25,896 | 18,555 | 21,276 |
| 012 | of which: deposits | 119,106 | 131,543 | 110,921 | 115,091 |
| 012a | of which: sale and repurchase agreements | 9,827 | 10,839 | 12,508 | 12,721 |
| 012b | of which: collateralized deposits excluding repurchase agreements | 112,024 | 124,007 | 99,868 | 102,248 |
| 013 | of which: bonds issued | 28,667 | 35,702 | 26,690 | 31,198 |

The business model's influence on the degree of encumbrance and the importance of encumbrance to the DZ BANK banking group's funding model are explained below. The DZ BANK banking group's main sources of encumbrance result from the following business activities:

- DZ BANK and DZ HYP obtain some of their funding by issuing covered bonds; DVB's issues had been repaid by October 2020. The corresponding cover pools of these institutions led to encumbrance of €70,571 million in 2020. The Ø weighted overcollateralization ratio for the DZ BANK banking group's cover pools was 33.41 percent in 2020. This overcollateralization comprised the excess cover required by law, the excess cover required by the rating agencies, and the voluntary excess cover; it contributed €17,672 million to the aforementioned total encumbrance.
- The entities in the DZ BANK banking group hold covered bonds issued by other group entities, for which there is a corresponding cover pool volume of €6,531 million. From a consolidated group perspective, these assets do not result in asset encumbrance.
- After the cover pools, development lending business with cooperative banks and end customers represents the second biggest factor in the DZ BANK banking group's encumbrance ratio, with pass-through loan receivables of €62,442 million assigned to development banks. This volume of encumbrance is mainly attributable to business at DZ BANK and DZ HYP.
- Securities lending transactions and funding via sale and repurchase agreements are further major sources of encumbrance for the DZ BANK banking group and predominantly result from transactions of DZ BANK, DZ PRIVATBANK, and DZ HYP.
- Both unsecured derivative transactions with netting master agreements (International Swaps and Derivatives Association (ISDA) and Deutscher Rahmenvertrag (DRV) [German Master Agreement]) and derivative transactions backed by collateral agreements (Credit Support Annex to the ISDA Master Agreement and Collateralization Annex to the German Master Agreement for Financial Futures) are considered to be encumbrances.
- The longer-term funding of DZ BANK and DZ HYP in the form of open-market operations via central banks results in additional encumbrance of assets-side business.

There are also assets that are encumbered because they are pledged to entities in the DZ BANK banking group. In particular, they arise from sale and repurchase agreements, derivative transactions backed by collateral agreements, and covered bonds held within the group. The main reason for conducting these transactions is the centralized provision of funding to the individual subsidiaries by DZ BANK (group funding). All transactions between entities in the DZ BANK banking group are recognized on a consolidated basis at group level.

The DZ BANK banking group's own securitizations (asset-backed securities, ABSs) were not relevant to the entities consolidated for regulatory purposes in 2020 and therefore do not represent a source of encumbrance for the purpose of asset encumbrance reporting.

The majority of the DZ BANK banking group's encumbered assets are denominated in euros. There are also encumbered assets denominated in US dollars, which is also deemed a significant currency for the DZ BANK banking group. The encumbered assets denominated in US dollars mainly result from derivatives business and from the issuance of covered bonds. The volume of encumbered assets denominated in US dollars stood at €4,033 million as at December 31, 2020. US-dollar-denominated collateral received and re-used amounted to €110 million. The sources of encumbrance denominated in US dollars came to €4,143 million.

The majority of the unencumbered securities in the portfolios of the DZ BANK banking group are eligible for central bank borrowing and are available in the normal course of business as collateral for potential encumbrance. The unencumbered other assets line item includes assets such as property, plant and equipment, long-term equity investments and investments in other entities, intangible assets, deferred tax assets, and unencumbered derivatives that are not available in the normal course of business for potential encumbrance.

Within the total encumbered loans and advances, the volume of encumbered mortgages amounted to €45,241 million in 2020. Encumbrance predominantly results from the issuance of covered bonds by DZ BANK and DZ HYP.

# 15 Remuneration policy

## 15.1 General disclosures
(Article 450 CRR)

Pursuant to section 16 of the German Regulation Governing Remuneration at Institutions (InstitutsVergV, new version dated July 25, 2017), DZ BANK is required to disclose information about its remuneration policy and practices. As an (EU) parent institution, DZ BANK must disclose information at consolidated level. As an institution subject to the CRR, DZ BANK is subject to the disclosure requirements specified by article 450 CRR in conjunction with section 16 InstitutsVergV.

Pursuant to article 450 CRR, DZ BANK must disclose certain qualitative and quantitative information for categories of employees whose activities have a material impact on its risk profile (risk takers).

In 2020, DZ BANK and the subordinated management units BSH, DZ HYP, DVB, DZ PRIVATBANK, TeamBank, and VR Smart Finanz identified the employees whose activities have a material impact on the risk profile. Risk takers were identified based on Commission Delegated Regulation (EU) No. 604/2014 of March 4, 2014 supplementing CRD IV with regard to regulatory technical standards with respect to qualitative and appropriate quantitative criteria to identify categories of staff whose professional activities have a material impact on an institution's risk profile.

This risk report contains detailed information on remuneration in the DZ BANK banking group for the 2020 financial year. The information disclosed in this report is subject to the principle of materiality pursuant to article 432 CRR. Information that is protected by law or is confidential is not to be disclosed.

The quantitative information pursuant to article 450 (1) letters g to j CRR is published after all bonus payments have been calculated. The information disclosed for 2020 pursuant to article 450 CRR for the DZ BANK banking group will therefore be updated in a separate report in the second quarter. This report disclosing the remuneration policy can be found on DZ BANK's website in the Investor Relations section under Reports.

## 15.2 Remuneration governance in the DZ BANK banking group

### 15.2.1 Remuneration strategy of the DZ BANK banking group

Section 27 InstitutsVergV dated December 16, 2013, in the version that came into force on August 4, 2017, requires the senior management of the parent company to define a banking group-wide **remuneration strategy**. The Board of Managing Directors of DZ BANK must define a remuneration strategy both for DZ BANK and for the entities in the DZ BANK banking group that implements the requirements of the InstitutsVergV in the banking group.

The remuneration strategy sets out uniform rules for managing remuneration that apply to the remuneration systems of the entities in the DZ BANK banking group. On the basis of this framework, each subordinated entity is obliged to document its subgroup's compliance with the agreed principles and to present this for inspection by DZ BANK.

Decentralized decision-making powers are one of the features of the balanced management approach taken within the DZ BANK banking group. Systematic coordination between all entities in the DZ BANK Group is necessary to ensure compliance with the InstitutsVergV. Company-law provisions and local rules – especially in relation to the independence of the institutions – are also taken into account.

The remuneration strategy is reviewed and, if necessary, amended at least once a year. The following material changes to the remuneration strategy were made during the year under review.

In 2020, a manager allowance and, as part of a pilot scheme, a performance recognition bonus were introduced at DZ BANK. There were no material changes at the significant group entities.

### 15.2.2 Sustainability

Sustainability has always been a fundamental part of the cooperative corporate culture and is one of the eight values that employees should bear in mind and put into practice as they go about their day-to-day work. Consequently, remuneration in the DZ BANK Group is in line with the sustainability objectives pursuant to article 5 of Regulation (EU) 2019/2088 on sustainability-related disclosures. DZ BANK reports on this both in its disclosures pursuant to section 16 InstitutsVergV in conjunction with section 1 (3c) KWG and in the groupwide remuneration strategy. From an organizational perspective, the sustainability strategy and its operational implementation have been assigned to the bank's Strategy division since 2020, emphasizing that the sustainability strategy is an important part of the bank's overall strategy and will be updated on an ongoing basis. Moreover, one of the implementation packages in the 'Verbund First 4.0' strategic program focuses on sustainability and will therefore be embedded in the target agreements of the members of the Board of Managing Directors and heads of division from 2021. Also starting this year, the strategy target will incorporate sustainability in the form of ESG performance criteria into DZ BANK's remuneration system by means of the targets of the members of the Board of Managing Directors of DZ BANK AG derived from the strategy. This is designed to encourage an even more sustainable way of thinking and operating.

### 15.2.3 Remuneration structure

The remuneration of employees in the DZ BANK banking group comprises fixed remuneration and, as a rule, variable remuneration. The level of fixed remuneration is determined by the importance of the employee's role, market conditions, and the employee's personal qualities. Particular care is taken to ensure that women and men who are of equal merit, who have the same level of experience, and who are doing the same job are paid equally. The level of variable remuneration reflects the employee's personal performance and, depending on the remuneration system, the entity's success, and the success of the division in which the employee works.

Measures are in place to ensure that variable remuneration does not exceed fixed remuneration at the entities in the DZ BANK banking group. In some cases, variable remuneration has been capped at well below fixed remuneration. The variable remuneration of employees in control units may not exceed 50 percent of their fixed remuneration.

For DVB, a resolution adopted by the Annual General Meeting in 2014 capped the variable remuneration for a strictly limited group of employees at 200 percent of their fixed remuneration.

Variable remuneration is guaranteed for no more than the first twelve months after an employee has joined the DZ BANK banking group.

### 15.2.4 Remuneration decision-making processes

Various committees and functions in the DZ BANK Group are involved in designing and monitoring the remuneration systems.

The design and implementation of the remuneration system for the Boards of Managing Directors in the DZ BANK Group are decided upon by the Supervisory Board of the entity in question. The Supervisory Boards also check that the employee remuneration systems are appropriate.

Each Supervisory Board is assisted in its work by its Remuneration Control Committee, in particular with regard to the appropriate design and monitoring of the remuneration strategies and their conformity with the business and risk strategies, remuneration strategy, and corporate culture of the DZ BANK banking group.

Each Board of Managing Directors decides on the design and implementation of the employee remuneration systems. The individual members of the Boards of Managing Directors contribute to the implementation of and compliance with the InstitutsVergV in the DZ BANK banking group through their membership of the Supervisory Boards of the subsidiaries.

In each entity, a remuneration officer assists the Remuneration Control Committee and Supervisory Board with their monitoring activities and is involved in deployment of the remuneration systems, the development of new systems, and the refinement of existing systems on a regular basis.

In each entity, the HR division carries out HR-related preparations for the design of the remuneration systems and the decisions of the Board of Managing Directors, which it also puts into practice. As part of their leadership and management role, managers deploy the performance management and remuneration tools provided to them.

The **control units** as defined by section 2 (11) InstitutsVergV are involved in the design and monitoring of the remuneration systems on an ongoing basis. Each entity in the DZ BANK banking group has defined the control units in its institution.

At DZ BANK, the following divisions are defined as the control units: Group Human Resources, Credit/Credit Services, Group Risk Controlling, Group Audit, and Compliance.

At BSH, it is the Human Resources, Internal Audit, Risk Controlling, and Compliance divisions.

DVB has defined its control units as follows: all Credit units, Credit Quality Assessment, Group Audit, Group Compliance Office, Group Controlling, Group Risk Management, Group Human Resources, and Operational Services.

DZ HYP defines the following divisions as control units: Internal Audit, Risk Controlling, Compliance, Finance, all back-office units, and Human Resources.

At DZ PRIVATBANK, it is the Risk Controlling, Internal Audit/Data Protection/Information Security, Legal/Compliance/Anti-Money Laundering, and Human Resources divisions.

### 15.2.5 Remuneration Control Committee

The **Remuneration Control Committee** (RCC) checks that the remuneration systems for members of the Board of Managing Directors and for employees are designed appropriately. In particular, it checks that remuneration is designed appropriately for the heads of the risk control and compliance functions and for those employees who have a material influence on the institution's overall risk profile. The RCC also assists the Supervisory Board with checking that the remuneration systems for the entity's employees are designed appropriately and it evaluates the impact of the remuneration systems on the management of risk, capital, and liquidity.

The RCC prepares the Supervisory Board's resolutions on the remuneration of the members of the Board of Managing Directors, taking particular account of the impact of the resolutions on the entity's risks and risk management. It also considers the long-term interests of shareholders, investors, and other stakeholders as well as the wider public interest.

The RCC helps the Supervisory Board to check that the internal control divisions and all other relevant divisions are duly involved in designing the remuneration systems.

The RCC is required to cooperate with the Risk Committee.

The Supervisory Board's RCC, in cooperation with the remuneration officer, monitors the appropriateness of the remuneration systems.

In 2020, the RCC at DZ BANK held three meetings. The Supervisory Board was notified of the findings. The RCC is made up of members of the Supervisory Board. DZ BANK's RCC comprises a chairman, deputy chairman, and four other members.

The RCC at BSH met twice in 2020. BSH's RCC comprises a chairman and five other members.

The RCC at DVB met twice in 2020. It comprises a chairman, deputy chairman, and one other member.

In 2020, the RCC at DZ HYP held four meetings. It comprises a chairman and three other members.

At DZ PRIVATBANK, the role of the RCC is performed by the Chairman's Committee. In the reporting year, the Chairman's Committee held four meetings, with RCC matters being discussed at three of them. The Chairman's Committee at DZ PRIVATBANK comprises a chairman, deputy chairman, and two other members.

### 15.2.6 Remuneration officer

In accordance with the requirements of section 23 InstitutsVergV, a remuneration officer and a deputy remuneration officer have been appointed by the Board of Managing Directors in all entities in the DZ BANK banking group that are deemed major pursuant to section 1 (3c) KWG.

The main tasks of these remuneration officers include the ongoing verification and monitoring of the appropriateness of the remuneration systems, regular and close coordination with the chairman of the Remuneration Control Committee, and preparation of an annual remuneration control report. To this end, they work closely with the other control and monitoring functions.

### 15.2.7 Relevant stakeholders

When it comes to defining remuneration policy, the **relevant stakeholders** are the owners and the central employees' council. The owners are represented on the Supervisory Board by the shareholders elected by the Annual General Meeting. This ensures that the owners are involved in the design of the remuneration systems and receive information about employee remuneration annually. The central employees' council is involved in the design of the remuneration systems within the framework of the rights of participation that exist under the German Works Council Constitution Act (BetrVG).

### 15.2.8 External consultancy

In 2020, all entities in the DZ BANK banking group that are deemed major pursuant to section 1 (3c) KWG engaged external consultants to examine how the remuneration of the Board of Managing Directors compared with the market standard.

DZ BANK did not engage any other external consultants.

BSH did not engage any other external consultants regarding remuneration matters.

DVB worked with an external law firm on implementing individual InstitutsVergV requirements.

DZ HYP did not engage any other external consultants.

DZ PRIVATBANK engaged an external consultancy to deal with unresolved questions regarding the implementation of individual InstitutsVergV requirements.

### 15.2.9 Appropriateness of the remuneration systems

According to section 12 InstitutsVergV, DZ BANK must review the **appropriateness of the remuneration systems** at least once a year. The related internal audit reports, the audit report from the auditor of the annual financial statements, and the remuneration officer's remuneration control report have to be used as the basis for this review. DZ BANK's Board of Managing Directors confirmed the appropriateness of the remuneration systems in a written resolution adopted in December 2020.

Overall, DZ BANK AG's remuneration systems are deemed appropriate in accordance with the requirements in the InstitutsVergV and are consistent with the business and risk strategies. The design, application and, in particular, the outcome of the remuneration systems show that there are no incentives for employees to take on disproportionately high risks. The remuneration systems do not run counter to the control units' monitoring function. Moreover, the remuneration systems of DZ BANK AG are consistent with the group remuneration strategy.

The last audit report from the auditor of the annual financial statements for 2020 found that DZ BANK's remuneration systems and their focus on the institution's long-term performance were appropriate and transparent. The ratio of variable to fixed remuneration was deemed appropriate. The report confirmed that DZ BANK's remuneration systems, including the remuneration strategy, supported the achievement of the institution's strategic objectives. The remuneration parameters are aligned with the business strategy, risk strategy, and corporate culture.

The DZ BANK remuneration officer's remuneration control report for 2020 found that the remuneration systems were designed appropriately.

In 2020, the auditor of the annual financial statements and the remuneration officer reviewed BSH's remuneration systems. No deficiencies were identified.

The report from the auditor of DVB's annual financial statements for 2020 and the remuneration control report of the remuneration officers found that the remuneration systems were designed appropriately.

The appropriateness of DZ HYP's remuneration systems was confirmed in the remuneration control report in the context of the regulatory control mechanisms and by the auditor of the annual financial statements. The remuneration systems are aligned with the business and risk strategies.

At DZ PRIVATBANK, the appropriateness of the remuneration systems was verified by the institution's remuneration officer in preparation for the annual remuneration control report to the Supervisory Board. This examination found that DZ PRIVATBANK's remuneration systems complied with the requirements of the InstitutsVergV.

## 15.3 Design of the remuneration systems at DZ BANK

### 15.3.1 Remuneration system for employees in the collectively-negotiated wage sector

The **remuneration system for employees in the collectively-negotiated (CN) wage sector** generally applies to any employee in the CN wage sector who is in an active employment relationship at any of DZ BANK's offices in Germany. The remuneration for such employees is governed by a company agreement.

**Remuneration structure**
The annual salary of employees in the CN wage sector consists of the following:

– Twelve monthly salaries (plus any CN or non-collectively negotiated (NCN) allowances)
– Bonus equal to one month's salary in April
– Bonus equal to one month's salary in November.

**Monthly salary and bonuses**
The monthly salary is determined by the applicable salary bracket (1 to 9) and the number of years worked. Under the wage settlement for the local cooperative banks and the cooperative central institution dated August 7, 2019, employees joining the company in or after 2020 are assigned to remuneration groups (A1 to C3) and categorized according to years of service. The amount of remuneration for these employees is based on the newly negotiated remuneration tables. The monthly salary is paid twelve times a year. It may also include CN and/or NCN allowances.

The level of the bonuses in April and November is determined by the monthly salary in the month of payment according to the CN remuneration table.

There are also non-financial remuneration components that are designed to promote staff loyalty, such as advisory services that help employees to balance work and family life.

### 15.3.2 Remuneration system for employees in the non-collectively-negotiated wage sector

The remuneration systems for employees in the NCN wage sector are described below. There are differences between regular NCN remuneration (see section 15.3.2.1), the remuneration of risk takers below the level of head of division (see section 15.3.2.2), systems with variable components and other non-cash benefits (see section 15.3.2.3), and the remuneration system for heads of division (see section 15.3.2.4). The remuneration systems for the foreign branches are presented in section 15.3.2.5.

### 15.3.2.1 Remuneration system for employees in the non-collectively-negotiated wage sector

DZ BANK's NCN remuneration systems are aimed at providing appropriate rewards and additional performance incentives in the form of fixed salaries and an additional variable remuneration component. The idea is that good performance should pay off.

The remuneration system for employees in the NCN wage sector is governed by a company agreement and applies to all such employees at DZ BANK in Germany (excluding senior managers). The majority (74.9 percent) of employees are in the NCN wage sector.

In addition to the fixed salary paid as twelve monthly salaries, the remuneration structure for employees in the NCN wage sector includes a contractually agreed performance- and results-based remuneration component (bonus) and a process for rating role importance (responsibility levels).

There are also non-financial remuneration components that are designed to promote staff loyalty, such as advisory services that help employees to balance work and family life.

**System of responsibility levels**
Each role at DZ BANK that is not covered by a CN pay agreement is rated according to knowledge/ability, problem-solving, responsibility, and strategic importance and then assigned to one of five responsibility levels. The percentage share represented by the target bonus and the lower and upper limits for the employee's remuneration depend on the responsibility level to which his or her role is assigned. The upper limits for variable remuneration are derived from the contractually agreed target bonuses and the upper limits for the bonus factors. Reflecting the market situation, DZ BANK may define special markets (e.g. the capital markets) for specific divisions, departments, groups, or roles. In these special markets, the target bonus may be agreed as a larger percentage share relative to the fixed salary. Under no circumstances may variable remuneration exceed fixed remuneration. The salary bands for each responsibility level are reviewed annually and adjusted if necessary. The adjustments are based on the bank's market position and financial performance as well as on the wider economic situation.

The following terms are used with regard to the NCN remuneration system at DZ BANK:

**Fixed salary:**
The contractually agreed basic salary and any existing special allowances

**Target bonus:**
Amount agreed by the employee and his or her manager that provides the basis of calculation for the bonus

**Reference salary:**
Fixed salary plus target bonus

**Fixed allowance:**
The fixed allowance is derived from the lower limits of the bonus factors (AG factor of 0.8, divisional factor of 0.8, IPF of 0.8). When deducted from the target bonus, it equates to 51.2 percent of the target bonus (0.8 x 0.8 x 0.8 = 0.512). This share of the target bonus is fixed and is paid monthly with the fixed salary.

**Fixed remuneration:**
Total of fixed salary plus fixed allowance

**Bonus factors:**
The AG factor and divisional factors reflect the results of the bank/group and divisions. The IPF indicates the employee's rate of target achievement.

**Bonus:**
Variable remuneration component calculated from the performance factors and the target bonus less the fixed allowance

The factors fall to below 1.0 if performance and success targets of the DZ BANK Group, DZ BANK AG, or the divisions and/or individual performance and success targets are not achieved. This reduces the amount of variable remuneration.

**Target agreement and target achievement**
The basis for a transparent and clearly documented performance appraisal, and thus for determination of the IPF, is a target agreement process that is applied throughout the bank. 'Management by objectives' is the target agreement system used at DZ BANK and constitutes a key element of the variable remuneration system. The employee and his or her manager together agree on three to five specific, challenging, and measurable individual targets by March 1 of the respective year. These targets are given weighting factors and deadlines. They consist of qualitative targets and quantitative targets based on profitability KPIs.

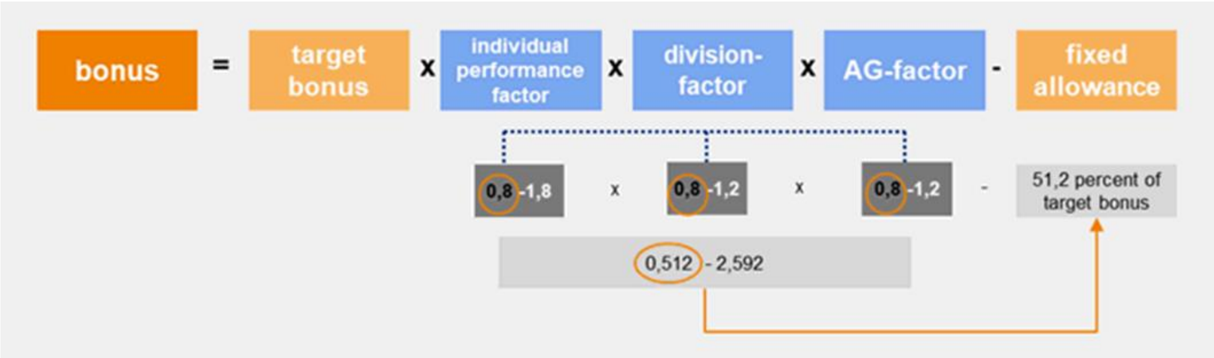
When calculating the bonus, the aim is to both recognize employees' high level of dedication and enable them to share in the success of their division and of DZ BANK as a company. That is why the bonus is determined using further performance factors in addition to the divisional and entity factors.

The IPF ranges from 0.8 to 1.8 and is set on the basis of the employee's personal target achievement during the annual performance review with his or her manager. The divisional factor ranges from 0.8 to 1.2 and is set by the responsible member of the Board of Managing Directors in consultation with the rest of the Board of Managing Directors on the basis of the head of division's suggestion and the division's results. The AG factor also ranges from 0.8 to 1.2 and is set by the Board of Managing Directors on the basis of the bank's and group's results.

The breadth of the IPF range enables employees to have a direct influence on their bonus.

**Calculation of the variable component**
The IPF is set during the annual performance review by no later than March 1 of the following year on the basis of target achievement. The divisional factor and AG factor are determined by no later than March 31 of the following year. The following formula is used to calculate the bonus:

Variable remuneration = target bonus x IPF x divisional factor x AG factor less fixed allowance (51.2 percent of the target bonus)




The variable remuneration (less the fixed allowance) is paid with the April salary in the year following the year to which it applies. The fixed salary and the fixed allowance are paid in twelve equal monthly installments.

The variable remuneration may be paid only if the risk-bearing capacity, the multi-year capital planning, and the financial performance of DZ BANK and the DZ BANK Group permit.

At some foreign branches, non-cash benefits that are typical for the particular market are paid, for example housing allowances and healthcare contributions.

### 15.3.2.2 Remuneration system for risk takers below the level of head of division

As in previous years, risk takers were identified for 2020 on the basis of Commission Delegated Regulation (EU) No. 604/2014 of March 4, 2014 supplementing CRD IV with regard to regulatory technical standards with respect to qualitative and appropriate quantitative criteria to identify categories of staff whose professional activities have a material impact on an institution’s risk profile. These define binding qualitative and quantitative criteria that must be used to identify risk takers.

Using these criteria, 212 risk takers were identified at DZ BANK AG for the reporting period. A further 98 group risk takers from subordinate entities were identified for the DZ BANK Group. The remuneration structure and, in particular, the bonus calculation for all employees below the level of head of division who have been identified as risk takers for DZ BANK are governed by the remuneration system for employees in the NCN wage sector (see section 15.3.2.1).

In accordance with the provisions of the InstitutsVergV, some of a risk taker’s variable remuneration is deferred and subject to a retention period if the variable remuneration exceeds €50 thousand. Of the total variable remuneration, 30 percent of the calculated bonus amount is paid to the employee with the April salary in the following year. A further 30 percent is subject to a one-year retention period. The other 40 percent of the calculated bonus is deferred over a period of three years. The deferred variable remuneration is split into three (each amounting to a third of the 40 percent). 50 percent of the deferred variable remuneration is subject to a retention period. During the deferral period, 50 percent of the level of deferred variable remuneration depends on the bank’s long-term performance. During the retention periods, this percentage rises to 100 percent.

The change in the value of DZ BANK's shares between April 15 and the applicable valuation date (April 14) is used to measure long-term performance. If the share price drops by more than 25 percent, the deferred portion of the bonus amounts to zero. If the share price falls by between 20 percent and 25 percent, the deferred portion of the bonus amounts to 50 percent; if the share price falls by 15 percent to 20 percent, the deferred portion of the bonus amounts to 75 percent. If the share price drops by less than 15 percent, the deferred portion of the bonus is 100 percent. None of DZ BANK AG's shares are traded on the market. Once a year, an external auditing firm calculates the value of the shares in accordance with the principles for conducting enterprise valuations pursuant to standard 1 (IDW S1) of the Institut der Wirtschaftsprüfer in Deutschland e.V. (IDW) [Institute of Public Auditors in Germany]. An increase in the share price does not result in higher variable remuneration.

Above a certain bonus amount, 40 percent of the variable remuneration is paid to the employee and 60 percent is deferred and subject to retention periods.

If the contribution to profits of an employee, his or her division, or DZ BANK falls short of the agreed targets, the employee's variable remuneration is reduced. In these cases, the IPF, divisional factor, or AG factor is set at below 1.0. If all factors are set at 0.8, the variable remuneration is cancelled. Before it becomes vested, deferred variable remuneration can be reduced or cancelled if the bonus factors that were originally set no longer appear appropriate when reviewed (backtesting).

Variable remuneration is forfeited in full if the risk taker has played a significant part in, or was responsible for, conduct that led to substantial losses or material regulatory sanctions for the institution, or if the risk taker was in serious (grossly negligent or intentional) breach of relevant external or internal rules regarding suitability and conduct. If, in exercising his or her role, the risk taker exhibits conduct that is immoral or in breach of duty, the IPF is reduced. The IPF can be lowered to zero in individual cases where a reduction of the IPF to 0.8 appears insufficient in view of the significance of the conduct that is immoral or in breach of duty. It is not possible to compensate for conduct that is immoral or in breach of duty by making a positive contribution to profits. Conduct that is immoral or in breach of duty must always lead to a reduction in the employee's variable remuneration. In cases where the variable remuneration is forfeited in full, the bank is also entitled to daw back any variable remuneration already paid to the risk taker.

#### 15.3.2.3 Systems with variable components and other non-cash benefits

The following new remuneration instruments were added to the remuneration systems in 2020.

**Manager allowance**
Pursuant to section 2 (6) sentence 3 no. 2 InstitutsVergV, employees who temporarily assume a more demanding duty, function, or organizational responsibility may receive an allowance for this. To qualify as fixed remuneration, the allowances must be paid on a non-discretionary basis to all staff members in a similar situation on the basis of a consistent, institution-wide policy. At DZ BANK, this policy was negotiated with the central employees' council in May 2020 in the form of a works agreement on manager allowances in the NCN wage sector.

If employees temporarily take on the managerial duties of a head of group, head of department, or head of division, they are paid a manager allowance from when they take on these duties for as long as they continue, provided that these duties are performed without interruption for more than two months in succession. Manager allowances are granted only when higher-level managerial duties are assumed. The performance of managerial roles at the same hierarchy level on an interim basis (e.g. if a head of group stands in for another head of group) does not result in payment of a manager allowance.

The manager allowance amounts to 10 percent of the employee's reference salary. The allowance is paid monthly in addition to the fixed salary in the form of a non-pensionable allowance. If an employee works part time, the allowance is paid pro rata in line with the number of hours worked.

**Performance recognition bonus**
As part of a pilot scheme that ran until May 31, 2021, the bank introduced monetary bonuses – known as performance recognition bonuses – in order to reward outstanding performance, creative or innovative ideas, and particularly exemplary engagement or action to support the corporate culture. This bonus is designed to show direct appreciation for outstanding performance within the workforce and to reward it promptly. At the same time, managers have an instrument at their disposal that gives them the flexibility to honor creative ideas and particularly exemplary action of individual employees and/or teams.

The performance recognition bonuses are distributed on a discretionary basis by the relevant head of division. They are awarded for outstanding performance that is not already covered by the employee's individual target agreement.

To underline the exceptional nature of this reward, no more than 5 percent of the employees in a division can receive the bonus in any one year. The individual payments range from €500 to €5,000 gross.

Where the bonus is awarded to risk takers, it is subject to the same deferral and retention periods as the normal bonus, depending on the statutory and regulatory requirements.

There is no other remuneration in the form of shares, options, or other components of variable remuneration at DZ BANK.

#### 15.3.2.4 Remuneration system for heads of division

All heads of division at DZ BANK are senior managers and have been identified as risk takers. Because they are senior managers, they are not covered by the company agreement for NCN remuneration. Their remuneration is governed by their employment contracts. The DZ BANK Board of Managing Directors is responsible for determining the remuneration system.

Some of the variable remuneration of heads of division is deferred and subject to a retention period. Of the total variable remuneration, 20 percent of the calculated bonus amount is paid to the head of division with the April salary in the following year. A further 20 percent is subject to a one-year retention period. The other 60 percent of the calculated bonus is deferred over a period of five years. The deferred variable remuneration is split into five (each amounting to a fifth of the 60 percent). The deferred variable remuneration is also subject to a one-year retention period. During the deferral period and retention periods, 100 percent of the level of deferred variable remuneration depends on the bank's long-term performance. The change in the value of DZ BANK's shares between April 15 and the applicable valuation date (April 14) is used to measure long-term performance. If the share price drops by more than 25 percent, the deferred portion of the bonus amounts to zero. If the share price falls by between 20 percent and 25 percent, the deferred portion of the bonus amounts to 50 percent; if the share price falls by 15 percent to 20 percent, the deferred portion of the bonus amounts to 75 percent. If the share price drops by less than 15 percent, the deferred portion of the bonus is 100 percent. None of DZ BANK AG's shares are traded on the market. Once a year, an external auditing firm calculates the value of the shares in accordance with IDW S1. An increase in the share price does not result in higher variable remuneration.

Unlike in the system for risk takers below the level of head of division, the greater responsibility of heads of divisions means that 100 percent rather than 50 percent of their variable remuneration is pegged to the value of DZ BANK's shares during the retention period.

Negative contributions to profits are taken into account when setting bonuses and pro rata deferred bonuses, which may cause the variable remuneration to be reduced or cancelled. Variable remuneration is not vested during the deferral and retention periods. For a period of seven years after the initial payment, all bonus installments that are already subject to a retention or deferral period can be cancelled, and those that have already been paid can be clawed back, if the head of division has played a significant part in, or was responsible for, conduct that led to substantial losses or material regulatory sanctions for the institution, or if the head of division was in serious breach of relevant external or internal rules regarding suitability and conduct.

Negative contributions to profits are determined using a list of criteria in the following categories:

– Personal conduct
– Significant deterioration in DZ BANK's financial situation during the deferral period
– Missed targets that are ascertained only subsequently.

#### 15.3.2.5 Remuneration systems for foreign branches

At DZ BANK's offices outside Germany, various variable components that differ from the systems used in Germany are paid along with a fixed salary in accordance with local custom and additional benefits.

The heads of the foreign branches were identified as risk takers for the reporting year. The remuneration system described above for heads of division is also used for the heads of the four foreign branches.

The individual bonus amounts for employees at the offices outside Germany are calculated on the basis of the local systems. The remuneration of risk takers in the offices outside Germany is subject to the same principles as the remuneration of risk takers in Germany.

FIG. 102 – OVERVIEW OF CURRENT BONUS ARRANGEMENTS IN THE FOREIGN BRANCHES

| | |
|---|---|
| New York | For Group Treasury: target bonus system; calculated in the same way as in the German system on the basis of individual performance and the results of the division and bank<br>For all other divisions: discretionary bonus payment; proposed bonuses reflect not only individual performance but also the bonuses paid in the market, seniority, and area of work (risk unit, business unit, or support unit) |
| London | For Group Treasury: target bonus system; calculated in the same way as in the German system on the basis of individual performance and the results of the division and bank<br>For all other divisions: discretionary bonus payment; proposed bonuses reflect the following criteria:<br>Local market conditions<br>Internal and external salary comparisons<br>Results of the bank<br>Results of the branch<br>Results of the department/group<br>Individual target achievement |
| Singapore | For Group Treasury and for capital markets divisions: target bonus system; calculated in the same way as in the German system on the basis of individual performance and the results of the division and bank<br>For all other divisions: discretionary bonus payment; proposed bonuses reflect not only individual performance but also the bonuses paid in the market |
| Hong Kong | For Group Treasury and for capital markets divisions: target bonus system; calculated in the same way as in the German system on the basis of individual performance and the results of the division and bank<br>For all other divisions: discretionary bonus payment; proposed bonuses reflect not only individual performance but also the bonuses paid in the market |

### 15.3.3 Remuneration system for members of the Board of Managing Directors

As well as a fixed salary, the remuneration system for the members of the Board of Managing Directors includes variable remuneration (bonus) that makes up no more than 20 percent of the total salary. The variable remuneration of the Board of Managing Directors is set with reference to a maximum achievable bonus. Quantitative and qualitative targets derived from the corporate strategy in the form of group, bank, area of board responsibility, and individual targets are used to determine the bonus level. The basis of measurement for the bonus covers a period of several years. The maximum bonus is set in the event of full achievement of each individual target. The Supervisory Board of DZ BANK is responsible for determining the remuneration system for the members of the Board of Managing Directors.

Some of the variable remuneration of members of the Board of Managing Directors is deferred and subject to a retention period. Of the total variable remuneration, 20 percent of the calculated bonus amount is paid to the member of the Board of Managing Directors with the April salary in the following year. A further 20 percent is subject to a one-year retention period. The other 60 percent of the calculated bonus is deferred over a period of five years. The deferred variable remuneration is split into five (each amounting to a fifth of the 60 percent). The deferred variable remuneration is also subject to a one-year retention period. During the deferral period and retention periods, 100 percent of the level of deferred variable remuneration depends on the bank's long-term performance.

DZ BANK uses the change in the value of its shares between April 15 and the applicable valuation date (April 14) to measure long-term performance. If the share price drops by more than 12.5 percent, the deferred portion of the bonus amounts to zero; if it drops by between 12.5 percent and 7.5 percent, the deferred portion of the bonus is 50 percent. If the share price drops by less than 7.5 percent, the deferred portion of the bonus is 100 percent. None of DZ BANK AG's shares are traded on the market. As appropriate, the Supervisory Board can take account of movements in the share price that are attributable to exogenous factors (e.g. changes to the regulatory environment) when setting the deferred portion of the bonus. Once a year, an external auditing firm calculates the value of the shares in accordance with IDW S1. An increase in the share price does not result in higher variable remuneration.

Unlike in the system for risk takers below the level of head of division, the greater responsibility of members of the Board of Managing Directors means that 100 percent rather than 50 percent of their variable remuneration is pegged to the value of DZ BANK's shares.

Negative contributions to profits are taken into account when setting bonuses and pro rata deferred bonuses, which may cause the variable remuneration to be reduced or cancelled. Variable remuneration is not vested during the deferral and retention periods. For a period of seven years after the initial payment, all bonus installments that are already subject to a retention or deferral period can be cancelled, and those that have already been paid can be dawed back, if the member of the Board of Managing Directors has played a significant part in, or was responsible for, conduct that led to substantial losses or material regulatory sanctions for the institution, or if the member was in serious breach of relevant external or internal rules regarding suitability and conduct. The Supervisory Board of DZ BANK is responsible for determining the remuneration system for the members of the Board of Managing Directors.

Negative contributions to profits are determined using a list of criteria in the following categories:

– Personal conduct
– Significant deterioration in DZ BANK's financial situation during the deferral period
– Missed targets that are ascertained only subsequently.

### 15.3.4 Remuneration system for members of the Supervisory Board

The Annual General Meeting of DZ BANK approved the adjustment of the remuneration and attendance fees for the Supervisory Board with effect from June 1, 2018. Each member of the Supervisory Board receives fixed annual remuneration, the level of which varies depending on whether they are a chairperson, a deputy chairperson, or member of a committee. The members of the Supervisory Board committees also receive an attendance fee for each committee meeting that they attend. There is no variable remuneration.

### 15.3.5 Determination of the total amount of variable remuneration at DZ BANK

In accordance with section 7 InstitutsVergV, the total amount of variable remuneration at DZ BANK and in the DZ BANK banking group is determined in such a way that takes due regard of risk-bearing capacity, multi-year capital planning, and financial performance and, moreover, ensures that the adequacy of own funds and liquidity along with the combined capital buffer requirements pursuant to section 10i KWG are permanently maintained or restored.

A detailed process has been adopted for this process and the various documents required have been submitted to the relevant decision-making bodies (Board of Managing Directors, Remuneration Control Committee, and Supervisory Board) for approval.

The performance-based variable remuneration is set at individual level in accordance with the company agreements concerning the remuneration systems or, where these agreements do not apply, on the basis of individual contracts.

## 15.4 Remuneration systems of the management units regarded as major pursuant to section 1 (3c) KWG

### 15.4.1 Relevant subsidiaries according to section 27 in conjunction with section 16 InstitutsVergV

DZ BANK, BSH, DZ HYP, DVB, and DZ PRIVATBANK are major institutions according to section 1 (3c) KWG. They must fulfill the disclosure requirements pursuant to section 16 (1) InstitutsVergV.

The following basic principles apply to them in the context of the remuneration strategy of the DZ BANK banking group:

Under the current business model of DZ BANK and the DZ BANK Group, earnings are broadly diversified across various customer groups and products. This is thanks to the combination of different customer groups (retail customers, corporate customers, institutional customers), a broad customer base (around 875 cooperative banks and their more than 30 million customers), a nationwide branch network (approximately 11,000 branches), and a comprehensive range of services (including asset management, retail and private banking, insurance, real estate finance/home savings, corporate banking, capital markets business). The overarching concept of a network-oriented central institution/financial services group shapes the actions and core business of the DZ BANK Group and is thus a central pillar of the remuneration strategy as well.

Remuneration is one of the DZ BANK Group's key HR management tools. The aims of the DZ BANK Group's remuneration structure are to

– give each employee an incentive to contribute personally to the sustainable implementation of the strategic objectives of the DZ BANK Group and the individual divisions on the basis of targets that are derived from the corporate strategy and cascaded down through the organization.
– reward performance without encouraging employees to take unwanted risks.
– attract talented employees, motivate them, and encourage them to remain in the DZ BANK Group.

To achieve these aims, the DZ BANK Group pays not only a fixed salary but also variable remuneration.

The variable salary component is reasonable in relation to the fixed remuneration and must not exceed the fixed remuneration. Regular performance reviews with their manager ensure that employees know where they are in terms of achieving their targets.

Depending on local custom, the DZ BANK Group offers additional non-cash benefits besides the salary payments. The DZ BANK Group is committed to the principles of sustainable, incentivizing, and risk-oriented remuneration. The remuneration systems also take account of statutory and regulatory requirements.

The remuneration systems of DZ BANK's subordinated entities that are deemed major pursuant to section 1 (3c) KWG are described below.

### 15.4.2 Remuneration systems at BSH

**Remuneration system for employees in the collectively-negotiated wage sector**
The remuneration of employees in the CN wage sector at BSH is based on the CN salary tables for private banks; a company-specific wage settlement applies to employees of SHK. The remuneration of employees in the CN wage sector comprises 12 monthly salaries and performance-based remuneration. The performance-

based remuneration includes the 13th monthly salary guaranteed in the collectively negotiated wage settlement. The variable proportion can be up to 1.2 monthly salaries. The process is governed by a company agreement.

**Remuneration system for employees in the non-collectively-negotiated wage sector**
The remuneration of employees in the NCN wage sector comprises a pensionable basic salary plus a fixed remuneration component (not pensionable) and a target achievement bonus. The level of remuneration is oriented to external benchmarks that are collated for BSH regularly. Variable remuneration – at 100 percent target achievement – may not make up more than 25 percent of the total remuneration.

The target achievement bonus is determined as follows:

Amount paid as a target achievement bonus = target achievement x (target achievement bonus + fixed remuneration)/100 – fixed remuneration

**Risk takers**
For 2020, the following were defined as risk takers: the members of the Board of Managing Directors of BSH (managing directors of BSH), the managing directors of Schwäbisch Hall Kreditservice GmbH (SHK), Schwäbisch Hall, the managing directors of Fundamenta-Lakáskassza, Budapest, and selected managers at BSH and SHK. The remuneration systems for the managing directors of BSH and Fundamenta-Lakáskassza and the remuneration systems of the other risk takers are described below.

Target achievement ranges from 0 percent to 120 percent and is based on group, entity, organizational unit, and individual targets.

**Remuneration of risk takers below the level of managing director at BSH and SHK**
The remuneration of risk takers at BSH and SHK (including managing directors at SHK) comprises a pensionable basic salary, a fixed non-pensionable remuneration component, and a target achievement bonus. Variable remuneration – at 100 percent target achievement – is not more than 25 percent of the total remuneration.

Target achievement ranges from 0 percent to 120 percent. Target achievement, which is used to determine the level of variable remuneration, is broken down as follows: 75 percent entity targets, 5 percent DZ BANK Group target, 10 percent targets for the organizational unit, and 10 percent individual targets. The breakdown for the managing directors of SHK is the same as for the members of the Board of Managing Directors of BSH.

The parameters factored into the remuneration are also management-related key performance indicators (KPIs) that are important to a building society. By taking return on risk-adjusted capital, profit before taxes, and administrative expenses into account, the remuneration is linked to earnings figures, key risk indicators, and the liquidity situation.

Because the target system, which reflects the change in enterprise value, is combined with the deferral and retention of some of the remuneration, the remuneration is also linked to the entity's long-term performance.

Where the currently applicable exemption threshold of €50 thousand is reached or exceeded, the arrangements regarding deferrals, retention periods, and malus criteria are the same as in the system for the managing directors. For a period of two years after the end of its deferral period, a bonus installment already paid can be clawed back, and the entitlement to bonus payments can be cancelled if the risk taker has played a significant part in, or was responsible for, conduct that led to substantial losses or material regulatory sanctions for the institution, or if the risk taker was in serious breach of relevant external or internal rules regarding suitability and conduct.

The Board of Managing Directors is responsible for determining the remuneration system for risk takers below the level of the Board of Managing Directors. The control units (Human Resources, Internal Audit, Risk Controlling, Compliance) and the remuneration officer were involved in designing the remuneration systems.

**Remuneration of managing directors**

The remuneration of the BSH Board of Managing Directors consists of a basic salary, a non-pensionable basic salary, and a bonus. Variable remuneration – at 100 percent target achievement – is not more than 25 percent of the total remuneration.

Target achievement ranges from 0 percent to 150 percent. Target achievement, which is used to determine the level of variable remuneration, is broken down as follows: 70 percent entity targets, 10 percent HR targets, and 20 percent individual targets, factoring in the contribution to profits of the managing director's area of responsibility and group targets. All of the targets are measured over a period of several years and include the main targets in the corporate strategy. The parameters factored into the remuneration are management-related KPIs that are important to a building society.

20 percent of the bonus is paid immediately in the following year and 20 percent after a one-year retention period. 60 percent of the bonus is deferred over a period of up to five years, with each payment made after a subsequent retention period of one year. All amounts earmarked for deferred payment are pegged to the change in the notional share price of the building society.

Negative contributions to profits are taken into account when setting bonuses and pro rata deferrals and at the end of the retention period, which may cause the variable remuneration to be reduced or not be paid. Variable remuneration is not vested during the deferral period. The Supervisory Board is responsible for determining the remuneration system for the members of the Board of Managing Directors.

For a period of two years after the end of its deferral period, a bonus installment already paid can be clawed back, and the entitlement to bonus payments can be cancelled if the managing director has played a significant part in, or was responsible for, conduct that led to substantial losses or material regulatory sanctions for the institution, or if the managing director was in serious breach of relevant external or internal rules regarding suitability and conduct.

The remuneration systems were designed in consultation with DZ BANK; the legal affairs division was involved in drafting the employment contracts for the members of the Board of Managing Directors. The Remuneration Control Committee of the Supervisory Board monitors the appropriateness of the remuneration systems.

The remuneration of the Board of Managing Directors of Fundamenta-Lakáskassza in Hungary consists of basic remuneration and a bonus. Variable remuneration accounts for 33 percent of the basic remuneration.

Target achievement ranges from 0 percent to 150 percent. Target achievement, which is used to determine the level of variable remuneration, is broken down as follows: 80 percent entity targets, 10 percent targets for the area of responsibility of the member of the Board of Managing Directors, and 10 percent individual targets. Some of the entity targets are measured over a period of several years. The criteria for target achievement are derived from the rules specified in a regulation of the Hungarian government.

20 percent of the bonus is paid immediately in the following year and 20 percent after a one-year retention period. 60 percent of the bonus is deferred over a period of up to five years. Half of each deferred amount is subject to a subsequent retention period of one year. All amounts earmarked for deferred payment are pegged to the change in the Ø profit before taxes for the last five financial years. Negative contributions to profits are taken into account when setting bonuses and amounts earmarked for deferred payment and at the end of the retention period, which may cause the variable remuneration to be reduced or forfeited in full. In cases where the variable remuneration is forfeited in full, the bank is also entitled to daw back any variable remuneration already paid to risk takers.

Variable remuneration is not vested during the deferral period.

The Supervisory Board is responsible for determining the remuneration system for the members of the Board of Managing Directors. The remuneration systems were designed in consultation with Bausparkasse Schwäbisch Hall. The Remuneration Committee of the Supervisory Board monitors the appropriateness of the remuneration systems.

### 15.4.3 Remuneration systems at DZ HYP

Following the broad harmonization of the remuneration systems at the Hamburg and Münster offices in 2019, there were no significant changes to the remuneration systems in 2020.

**Remuneration system for employees in the collectively-negotiated wage sector**
The employees in the CN wage sector at the two offices (Hamburg and Münster) receive 13 monthly salaries in accordance with the relevant collective pay agreement plus variable remuneration that is based on the 'Principles of variable performance-based remuneration' company agreement. Each December, these employees also receive half of a relevant gross monthly salary as a bonus. The variable remuneration of employees in the CN wage sector amounts to a maximum of 0.8 x a relevant gross monthly salary.

**Remuneration system for employees in the non-collectively-negotiated wage sector**
The employees in the NCN wage sector receive 12 monthly salaries plus variable remuneration that is based on the 'Principles of variable performance-based remuneration' company agreement.

Each December, the employees in the NCN wage sector at the Hamburg office also receive half of a gross monthly salary as a bonus. The aforementioned company agreement on variable remuneration distinguishes between employees in the NCN wage sector 'with' a target bonus and those 'without' a target bonus. Managers, employees with quantitative sales targets, and risk takers are eligible for a target bonus. The target bonus equates to a maximum of three gross monthly salaries. Each year, target agreements are reached with the employees eligible for a target bonus. These agreements set out qualitative and quantitative criteria as well as divisional and individual targets. The level of variable remuneration paid depends on the individual's performance and target achievement, on the success of his or her division, and the entity's results (measured on the basis of return on equity (ROE), the cost/income ratio (CIR) and, since 2015, RWAs. The variable remuneration of employees without a target bonus amounts to a maximum of 0.8 x the gross monthly salary. Employees with a target bonus can receive a maximum of 1.5 x the contractually agreed target bonus as variable remuneration. The variable remuneration may account for a maximum of 27 percent of the total annual remuneration. The Board of Managing Directors is responsible for determining the remuneration system for employees in the NCN wage sector.

**Remuneration system for risk takers below the level of head of division**
Risk takers were identified for 2020 on the basis of Commission Delegated Regulation (EU) No. 604/2014 of March 4, 2014 supplementing CRD IV with regard to regulatory technical standards with respect to qualitative and appropriate quantitative criteria to identify categories of staff whose professional activities have a material impact on an institution's risk profile. The regulatory technical standards define binding qualitative and quantitative criteria that must be used to identify risk takers.

Using these criteria, 87 risk takers were identified at DZ HYP for the reporting year, of whom 17 were members of the Supervisory Board and 49 were below the level of head of division. The remuneration structure and, in particular, the bonus calculation for all employees below the level of head of division who have been identified as risk takers are governed by the remuneration system for employees in the NCN wage sector.

As is the case in the remuneration system for all employees in the NCN wage sector, risk takers below the level of head of division receive twelve (Hamburg office: twelve and a half) monthly salaries plus a variable remuneration component that is based on the company agreement setting out the principles of variable performance-based remuneration.

The variable remuneration for risk takers below the level of head of division is set by the Board of Managing Directors on the basis of the head of division's suggestion with reference to a contractually agreed target bonus. The level of the contractually agreed target bonus is limited to a maximum of three gross monthly salaries. Quantitative and qualitative targets derived from the corporate strategy in the form of overall bank, divisional, and individual targets are used to determine the actual bonus level. Target achievement, and thus the variable remuneration, depends on the entity's success (derived from ROE, CIR, and RWAs; target/actual comparison = success of the bank), on the contribution made by the division, and on the individual target achievement of the employee. New divisional and individual targets are agreed upon and set during a target agreement meeting each year between the employee and head of division. In the ideal scenario, the variable remuneration to be paid to employees eligible for a target bonus equates to 1.5 x the contractually agreed target bonus, which means that the variable remuneration may account for a maximum of 27 percent of the total annual remuneration. Besides the aforementioned overall bank, divisional, and individual targets, group targets are agreed with any risk takers at DZ HYP who are also group risk takers.

The variable remuneration for a particular year is paid in April of the following year. If the variable remuneration amounts to €50 thousand or more, the same arrangements as for the heads of divisions apply with regard to retention, entitlement requirements, and payment requirements.

**Remuneration system for risk takers at the level of head of division**
The heads of division are classified as risk takers and receive twelve monthly salaries plus a variable performance-based remuneration component. Individual contractual agreements on variable performance-based remuneration were reached with the heads of division in 2020. They take into account the requirements of the InstitutsVergV, particularly those regarding deferral, entitlement requirements, and payment requirements. These agreements apply from 2019 onward.

The Board of Managing Directors sets the variable performance-based remuneration for the heads of division with reference to a contractually agreed target bonus. During the employee's annual performance review, quantitative and qualitative targets are derived from the corporate strategy in the form of group, overall bank, divisional, and individual targets; target achievement is also ascertained in these meetings and used to determine the actual bonus level. Target achievement, which is calculated on the basis of ROE, CIR, and RWAs, ranges from 0 percent to 130 percent for group and overall bank targets and from 0 percent to 150 percent for divisional and individual targets. The group and overall bank targets are given a 40 percent weighting and the divisional and individual targets 60 percent, which means that the variable performance-based remuneration may account for a maximum of 142 percent of the target bonus. The variable performance-based remuneration for a particular year is paid in April of the following year. If the variable performance-based remuneration amounts to €50 thousand or more, some of it is paid immediately, some is deferred, and some is subject to a retention period. Under this arrangement, 20 percent of the variable performance-based remuneration is paid immediately in cash in April of the following year. The other 80 percent of the calculated bonus is deferred over a period of up to six years. Of this deferred amount, 50 percent is pegged to the long-term performance of DZ HYP, which is calculated on the basis of the enterprise value. Negative contributions to profits are taken into account when setting bonuses and pro rata deferrals. These are determined using a list of criteria in the following categories:

– Personal conduct
– Significant deterioration in the bank's or the DZ BANK Group's financial situation during the deferral period
– Missed targets that are ascertained only subsequently.

In accordance with section 20 (6) InstitutsVergV, variable performance-based remuneration can be dawed back in particularly serious cases. Variable remuneration is not vested during the deferral and retention periods.

**Remuneration system for members of the Board of Managing Directors**

The members of the Board of Managing Directors receive twelve monthly salaries plus a variable performance-based remuneration component that is based on individual contractual arrangements. The requirements of the relevant provisions in the InstitutsVergV have been taken into account.

The variable performance-based remuneration of the members of the Board of Managing Directors is set by the Supervisory Board and measured with reference to a maximum achievable bonus.

Quantitative and qualitative targets derived from the corporate strategy in the form of group, bank, area of board responsibility, and individual targets are used to determine the bonus level. The basis of measurement for the bonus covers a period of several years. The maximum bonus is set in the event of full achievement of each individual target. Only 20 percent of the bonus achieved is paid immediately in the following year after the annual financial statements have been adopted and the bonus has been set by the Supervisory Board. Payment of the remaining 80 percent of the bonus set for the previous year is spread out over a period of up to six years in total, taking into account deferral and retention periods. All amounts earmarked for deferred payment are linked to the long-term performance of DZ HYP because they are pegged to the value of its shares. Negative contributions to profits are taken into account when setting bonuses and pro rata deferrals, which may cause the variable remuneration to be reduced or cancelled. Variable remuneration is not vested during the deferral and retention periods. For a period of seven years after the initial payment, all bonus installments that are already subject to a retention period or have already been paid can be dawed back if the member of the Board of Managing Directors has played a significant part in, or was responsible for, conduct that led to substantial losses or material regulatory sanctions for the institution, or if the member was in serious breach of relevant external or internal rules regarding suitability and conduct.

### 15.4.4 Remuneration systems at DVB

**Remuneration system for employees in the non-collectively-negotiated wage sector**
Employees covered by this remuneration system receive a fixed salary paid in regular installments plus a contractually agreed performance- and results-based remuneration component (target bonus).

The fixed salary installments vary depending on location and local custom.

The variable remuneration component can be tailored to the individual on the basis of a target bonus agreement. The target bonus is set by the Board of Managing Directors and the HR division and is oriented to external benchmarks that are collated regularly.

The proportion of target income (basic salary + target bonus) accounted for by variable remuneration is kept to a level at which the employee does not become financially dependent on it. The fixed component has an even higher weighting in the control units.

In addition to departmental targets for the Credit Asset Solution Group (CASG), the bonus calculation reflects individual performance. Employees' individual targets consist of not only financial metrics but also non-financial factors, such as process-oriented targets, involvement in projects, and conduct. The individual targets can be given different weightings and, like the departmental targets, are documented in writing.

These target levels can vary in terms of weighting. They are currently weighted as follows:

| | CASG | All other divisions |
|---|---|---|
| Departmental targets | 40% | - |
| Individual targets | 60% | 100% |

The performance factors at departmental level are determined on the basis of management reporting. The individual factor and any qualitative departmental targets are set during the annual performance review with the employee's manager.

Target achievement is calculated independently for each level/for each target. The individual results are aggregated and then multiplied by the target bonus to give the payment amount.

The Board of Managing Directors has a number of options at its disposal for adjusting the formula-based bonus calculation in the event of exceptional circumstances and/or performance or if achievements have not yet been reflected in the targets.

- Granting of an additional discretionary bonus pool at departmental or team level
- Granting of a discretionary bonus to individual employees
- Adjustments due to personal misconduct.

**Remuneration system for risk takers (below the level of head of division)**
The remuneration system for risk takers is fundamentally the same as the remuneration system for employees in the NCN wage sector.

When the bonus for risk takers is calculated, the entity targets (DVB Group targets) and the departmental targets are taken into consideration.

| | All divisions |
|---|---|
| DVB Group targets | 30% |
| Departmental targets | 35% |
| Individual targets | 35% |

The performance factors at bank and departmental level are determined on the basis of management reporting. The individual factor and any qualitative departmental targets are set during the annual performance review with the employee's manager.

Target achievement is calculated independently for each level. The individual results are aggregated and then multiplied by the target bonus to give the payment amount.

The Board of Managing Directors has a number of options at its disposal for adjusting the formula-based bonus calculation in the event of exceptional circumstances and/or achievements or if achievements have not yet been reflected in the targets.

- Adjustment of target achievement at group level using a modifier of plus or minus 20 percentage points (prerequisite: unforeseeable events outside the bank's sphere of influence)
- Granting of an additional discretionary bonus pool at departmental or team level
- Granting of a discretionary bonus to individual employees
- Adjustments due to personal misconduct.

However, the bonus is paid as follows in accordance with the InstitutsVergV:
The risk taker becomes entitled immediately (in the following year) to 40 percent of the achieved bonus, once it has been set by the Board of Managing Directors (immediate bonus). Only 50 percent of this amount is paid immediately; the remaining 50 percent is subject to a one-year retention period, during which it is pegged to the change in the DVB Bank Group's enterprise value.

60 percent of the achieved bonus is deferred (deferred bonus) and allocated in five tranches (each equating to 12 percent) over a period of five years. 50 percent of each tranche is subject to a further retention period of one year and is pegged to the change in the DVB Bank Group's enterprise value during both the deferral period and the retention period.

After each deferral period and after the individual tranche's additional retention period, the risk taker becomes entitled to payment of the particular bonus installment.

Negative contributions to profits are taken into account when setting bonuses and pro rata deferrals.

Each deferred bonus tranche undergoes a malus process before payment, which involves reviewing the relevant risk situation and financial performance, compliance with internal policies (e.g. compliance policies, lending policies), and personal conduct. However, the malus process cannot increase an individual deferred bonus tranche; it can merely reduce or cancel it.

In the event of serious misconduct on the part of an employee, the Board of Managing Directors will initiate a clawback process, leading to the variable remuneration being forfeited in full (not only outstanding installments but also installments already paid).

The DVB Board of Managing Directors is responsible for determining the remuneration system.

**Remuneration system for heads of division (below the level of the Board of Managing Directors)**
The remuneration system for heads of division is the same as the remuneration system for risk takers below the level of head of division.

**Remuneration system for the Board of Managing Directors**
In addition to a fixed salary, the remuneration system for the Board of Managing Directors includes a variable remuneration component (bonus). The variable remuneration of the Board of Managing Directors is set with reference to a maximum achievable bonus. Quantitative and qualitative targets derived from the corporate strategy and strategic planning are used to determine the bonus. Targets are set at group, bank, divisional, and individual level and are all measured over a period of several years. The maximum bonus is set in the event of full achievement of each individual target. The member of the Board of Managing Directors becomes entitled immediately (in the following year) to 40 percent of the achieved bonus, once it has been set by the Supervisory Board (immediate bonus). Only 50 percent of this amount is paid immediately; the remaining 50 percent is subject to a one-year retention period, during which it is pegged to the change in the DVB Bank Group's enterprise value.

60 percent of the achieved bonus is deferred (deferred bonus) and allocated in five tranches (each equating to 12 percent) over a period of five years. After the deferral period, 50 percent of each tranche is subject to a further retention period of one year and is pegged to the change in the DVB Bank Group's enterprise value during both the deferral period and the retention period.

After each deferral period and after the individual tranche's additional retention period, the member of the Board of Managing Directors becomes entitled to payment of the particular bonus installment.

Negative contributions to profits are taken into account when setting bonuses and pro rata deferrals, which may cause the variable remuneration to be reduced or cancelled. Variable remuneration is not vested during the deferral period.

Each deferred bonus tranche undergoes a malus process before payment, which involves reviewing the relevant risk situation and financial performance, compliance with internal policies (e.g. compliance policies, lending policies), and personal conduct. However, the malus process cannot increase an individual deferred bonus tranche; it can merely reduce or cancel it. For a period of two years after the end of its deferral period, a bonus installment already paid can be clawed back, and the entitlement to bonus payments can be cancelled if the member of the Board of Managing Directors has played a significant part in, or was responsible for, conduct that led to substantial losses or material regulatory sanctions for the institution, or if the member was in serious breach of relevant external or internal rules regarding suitability and conduct.

The full DVB Supervisory Board is responsible for determining the remuneration system for the members of the Board of Managing Directors. Since 2014, the appropriateness of the remuneration systems has been ensured, primarily by the Remuneration Control Committee of the Supervisory Board.

**Retention bonuses**
Extensive restructuring continued to take place in 2020. To avoid the risk of a workforce exodus, the Board of Managing Directors and Supervisory Board decided to launch the Retention 2020 program and to grant retention bonuses to employees in key functions. These retention bonuses were designed as an incentive that would encourage these employees to remain with the bank. The bonuses were paid after the end of the relevant waiting period (December 31, 2020), provided that the employee was still employed by DVB. In the case of risk takers, the necessary deferral periods for variable remuneration were applied.

### 15.4.5 Remuneration systems at DZ PRIVATBANK

At DZ PRIVATBANK, the remuneration of employees in the CN wage sector is governed by the prevailing collective pay agreement. There is also a remuneration system for employees in the NCN wage sector and a remuneration system for risk takers. The Supervisory Board of DZ PRIVATBANK decides on the remuneration of the members of the Board of Managing Directors of DZ PRIVATBANK on the basis of individual contractual arrangements.

The remuneration systems generally apply at all locations while taking country-specific aspects into consideration, for example provisions in a collective pay agreement.

A new collective pay agreement for employees in the financial sector was signed in Luxembourg in 2018. It expired in 2020. As well as a 13th monthly salary payment at the end of the year, employees in the CN wage sector receive a loyalty bonus linked to their length of service that is paid in June. It ranges from 20 percent to 85 percent of the basic monthly salary and is capped at a maximum amount. All employees covered by the collective pay agreement were assigned to the new salary brackets by January 1, 2020. Implementation of the requirements of the new collective pay agreement was used as an opportunity to conduct a systematic assessment of role importance – with support from an external consultancy – not only for employees in the CN wage sector in Luxembourg but also for those in the NCN wage sector in Luxembourg and other countries.

**Remuneration system for employees in the non-collectively-negotiated wage sector**
The Board of Managing Directors is responsible for determining the remuneration system for employees in the NCN wage sector.

In accordance with the provisions of the InstitutsVergV, the remuneration system for employees in the NCN wage sector includes a ban on hedging, rules on the 1:1 ratio of fixed to variable remuneration, an explicit ban on guaranteed bonuses, and specific rules on remuneration arrangements for employees in control units.

The remuneration system for employees in the NCN wage sector includes not only a fixed salary paid in the form of 12, 12.5, or 13 monthly salaries (depending on the arrangements at the local office) but also a performance- and results-based remuneration component (reference bonus).

**System of responsibility levels**
Each role at DZ PRIVATBANK that is not covered by a CN pay agreement is rated according to knowledge/ability, problem-solving, responsibility, and strategic importance and then assigned to one of four responsibility levels. The percentage share represented by the reference bonus and the lower and upper limits for the employee's remuneration depend on the responsibility level to which his or her role is assigned. This share ranges from 5 percent to a maximum of 40 percent of the annual fixed salary. The remuneration of employees in control units is more oriented toward annual fixed salary. Their possible reference bonus therefore ranges from 5 percent to a maximum of 20 percent of the annual fixed salary. The total variable remuneration of employees in control departments must not exceed 1/3 of their total annual remuneration.

**Calculation of the variable component**
The following formula is used to calculate the variable component as part of the annual bonus process:

**Bonus = (reference bonus x IPF x segment factor x location factor)**
When calculating the bonus, the aim is to both recognize employees' high level of dedication and enable them to actively share in the success of their segment and of DZ PRIVATBANK as a company. That is why the bonus is

determined using further performance factors in addition to the segment and overall bank targets. The level of these factors is as follows:

– Individual performance factor: 0.5 to 1.8
– Segment factor: 0.8 to 1.2
– Location factor: 0.8 to 1.2.

The Board of Managing Directors sets the segment factors and the location factor. The bank can set an individual performance factor and the location factor in a particular country (so that it differs from the location factor in other countries) at zero, if required under local regulatory and statutory provisions. This ensures that it is possible to cancel an employee's bonus. The segment factors for the variable remuneration of employees in control units are not based on the same remuneration parameters as for the employees in the segments overseen by the control units.

**Remuneration system for risk takers (maximum bonus scheme)**
The Board of Managing Directors is responsible for determining the remuneration system for risk takers. The remuneration system for risk takers is fundamentally derived from the remuneration system for employees in the NCN wage sector.

The remuneration system for risk takers also includes a ban on hedging, rules on the 1:1 ratio of fixed to variable remuneration, an explicit ban on guaranteed bonuses, and specific rules on remuneration arrangements for employees in control units.

As is the case in the remuneration system for all employees in the NCN wage sector, risk takers are assigned to salary brackets. They are generally assigned to responsibility levels 1 and 2. This is because the categorization is based on Commission Delegated Regulation (EU) No. 604/2014 of March 4, 2014 supplementing CRD IV with regard to regulatory technical standards with respect to qualitative and appropriate quantitative criteria to identify categories of staff whose professional activities have a material impact on an institution's risk profile. In the remuneration system for risk takers, variable remuneration is designed as a maximum bonus scheme. The target agreement system includes quantitative and qualitative targets. The quantitative targets are derived from the operational planning of DZ PRIVATBANK (e.g. IFRS profit before taxes, CIR) and of the relevant segment. There are also additional individual quantitative and qualitative targets. 60 percent of the targets are measured over a period of three years; the other targets are measured over a one-year period. Because the maximum bonus scheme is based on aggregation, target achievement for the individual targets ranges from 0 percent to 180 percent, whereas overall target achievement is limited to 100 percent of the maximum bonus. If target achievement for a particular target is below 50 percent, the share of the bonus for this target is zero percent.

Deferral and retention rules have also been established for risk takers whose bonus exceeds €50 thousand. If the variable remuneration exceeds this threshold, 20 percent of the bonus achieved is paid immediately in the following year. Payment of the remaining 80 percent of the bonus set for the previous year is spread out over a period of at least four years, taking into account deferral and retention periods for risk takers below the level of head of segment. For employees at the level of the Board of Managing Directors at subsidiaries of DZ PRIVATBANK and for managers below the Board of Managing Directors at DZ PRIVATBANK (heads of segment, risk takers required to report directly to the Board of Managing Directors, and defined high earners) whose bonus exceeds the threshold of €50 thousand, the deferral period is at least 6 years (including retention periods). The deferred bonus is split into three or five pro rata deferrals (each amounting to 1/3 or 1/5 of the 60 percent). All amounts earmarked for deferred payment are linked to the long-term performance of DZ PRIVATBANK because they are pegged to the value of its shares. Negative contributions to profits are taken into account when setting bonuses and pro rata deferrals, which may cause the variable remuneration to be cancelled or clawed back in a period lasting no more than two years after payment of the final deferred installment. Variable remuneration is not vested during the deferral and retention periods.

**Remuneration system of the Board of Managing Directors**

The Supervisory Board of DZ PRIVATBANK is responsible for determining the remuneration system for the members of the Board of Managing Directors. The remuneration of the Board of Managing Directors is set on the basis of individual contractual arrangements. As well as a pensionable fixed salary, the remuneration includes a bonus and contributions to an occupational pension. Depending on target achievement, the bonus for the Board of Managing Directors of DZ PRIVATBANK ranges from 0 percent to a maximum of 150 percent of the reference bonus. Quantitative and qualitative targets derived from the corporate strategy in the form of group, bank, area of board responsibility, and individual targets are used to determine the bonus level. All targets for the Board of Managing Directors have a historical multi-year measurement period of three years. Only 20 percent of the bonus achieved is paid immediately in the following year after the annual financial statements have been adopted and the bonus has been set by the Supervisory Board. Another 20 percent is subject to a retention period of one calendar year and depends on the long-term changes in the enterprise value of DZ PRIVATBANK. 60 percent of the bonus set by the Supervisory Board for the previous financial year is deferred over a period of five calendar years. To this end, the deferred bonus is divided into five equal installments. They are paid after taking into account deferral and retention periods. All amounts earmarked for deferred payment are linked to the long-term performance of DZ PRIVATBANK because they are pegged to the change in its enterprise value. Negative contributions to profits are taken into account when setting bonuses and pro rata deferrals by means of backtesting, which may cause the variable remuneration to be reduced or cancelled. Variable remuneration is not vested during the deferral and retention periods. For a period of two years after the end of its deferral period, a bonus installment already paid can be clawed back, and the entitlement to bonus payments can be cancelled if the member of the Board of Managing Directors has played a significant part in, or was responsible for, conduct that led to substantial losses or material regulatory sanctions for the institution, or if the member was in serious breach of relevant external or internal rules regarding suitability and conduct.

# 16 Annexes

## Annex 1: Geographical breakdown of exposures

FIG. 103 – ANNEX 1: SUPPLEMENT TO FIG. 28 – EU CRB-C – GEOGRAPHICAL BREAKDOWN OF EXPOSURES IN DETAIL

| | | a | b | c | d | e | f | g |
|---|---|---|---|---|---|---|---|---|
| € million | | Germany | Other industrialized countries | France | Netherlands | United Kingdom | Luxembourg | Austria |
| 1 | Central governments and central | 8 | 5,401 | - | - | - | - | - |
| 2 | Institutions | 8,493 | 27,394 | 6,276 | 1,610 | 6,346 | 402 | 913 |
| 3 | Corporates | 82,765 | 20,301 | 1,810 | 2,342 | 1,738 | 5,150 | 1,196 |
| 4 | of which: specialized lending | 23,392 | 9,270 | 843 | 981 | 642 | 4,632 | 173 |
| 5 | of which: SMEs | 9,550 | 190 | - | 21 | 41 | 87 | 5 |
| 6 | Retail business | 83,875 | 479 | 37 | 44 | 28 | 64 | 73 |
| 7 | Exposures secured by mortgages on immovable property | 69,833 | 347 | 28 | 41 | 7 | 62 | 63 |
| 8 | of which: SMEs | 0 | - | - | - | - | - | - |
| 9 | of which: non-SMEs | 69,833 | 347 | 28 | 41 | 7 | 62 | 63 |
| 10 | Qualified revolving | - | - | - | - | - | - | - |
| 11 | Other retail business | 14,042 | 133 | 9 | 3 | 21 | 2 | 10 |
| 12 | of which: SMEs | 376 | 3 | 0 | - | - | 1 | 0 |
| 13 | of which: non-SMEs | 13,666 | 129 | 8 | 3 | 21 | 1 | 10 |
| 14 | Equity exposures | 7,247 | 79 | 0 | - | 1 | 0 | 0 |
| 15 | Other non-credit-obligation assets | 852 | 0 | - | - | - | 0 | - |
| **16** | **Total amount under IRB** | **183,240** | **53,654** | **8,123** | **3,996** | **8,113** | **5,616** | **2,183** |
| 17 | Central governments and central | 61,090 | 9,359 | 1,115 | 0 | 861 | 1,718 | 1,005 |
| 18 | Regional governments or local authorities | 26,863 | 3,357 | 100 | - | - | - | 41 |
| 19 | Public-sector entities | 8,673 | 1,205 | 474 | - | - | - | - |
| 20 | Multilateral development banks | - | - | - | - | - | - | - |
| 21 | International organizations | - | - | - | - | - | - | - |
| 22 | Institutions | 107,705 | 531 | 294 | 26 | 12 | 9 | 6 |
| 23 | Corporates | 11,837 | 4,714 | 175 | 1,202 | 234 | 837 | 371 |
| 24 | of which: SMEs | 1,768 | 145 | - | - | - | 135 | - |
| 25 | Retail business | 4,911 | 1,209 | 2 | 1 | 0 | 0 | 1,199 |
| 26 | of which: SMEs | 1,817 | 0 | 0 | - | - | - | - |
| 27 | Exposures secured by mortgages on immovable property | 1,348 | 9 | - | - | - | 9 | - |
| 28 | of which: SMEs | 43 | - | - | - | - | - | - |
| 29 | Exposures in default | 314 | 60 | 0 | 6 | 22 | 0 | 12 |
| 30 | Exposures associated with particularly high risk | 269 | 60 | - | - | - | 10 | - |
| 31 | Covered bonds | 854 | 124 | - | - | 25 | 20 | - |
| 32 | Exposures to institutions and corporates with a short-term credit | - | 0 | - | - | - | - | 0 |
| 33 | CIUs | 393 | 3,208 | 758 | 371 | 296 | 154 | 144 |
| 34 | Equity exposures | 55 | 0 | - | - | - | 0 | 0 |
| 35 | Other items | 452 | 54 | - | - | - | 12 | 2 |
| **36** | **Total amount under Standardized Approach** | **224,765** | **23,890** | **2,917** | **1,605** | **1,450** | **2,770** | **2,781** |
| **37** | **Total as at Dec. 31, 2020** | **408,005** | **77,543** | **11,040** | **5,601** | **9,563** | **8,386** | **4,964** |
| 37 | Total as at Dec. 31, 2019 | 374,550 | 76,606 | 8,795 | 5,036 | 9,241 | 6,234 | 4,676 |

| | € million | Switzerland | United States | Other countries | Advanced economies | Malta | Singapore | Korea |
|---|---|---|---|---|---|---|---|---|
| 1 | Central governments and central banks | 4,840 | 560 | - | 1 | - | 1 | - |
| 2 | Institutions | 1,246 | 1,991 | 8,610 | 749 | 4 | 75 | 507 |
| 3 | Corporates | 1,349 | 3,206 | 3,509 | 1,073 | 204 | 638 | 12 |
| 4 | of which: specialized lending | 133 | 577 | 1,291 | 170 | 26 | 93 | - |
| 5 | of which: SMEs | - | - | 37 | - | - | - | - |
| 6 | Retail business | 174 | 16 | 43 | 12 | 0 | 1 | 0 |
| 7 | Exposures secured by mortgages on immovable property | 101 | 14 | 31 | 8 | 0 | 1 | - |
| 8 | of which: SMEs | - | - | - | - | - | - | - |
| 9 | of which: non-SMEs | 101 | 14 | 31 | 8 | 0 | 1 | - |
| 10 | Qualified revolving | - | - | - | - | - | - | - |
| 11 | Other retail business | 74 | 2 | 12 | 4 | 0 | 0 | 0 |
| 12 | of which: SMEs | 1 | 1 | - | 1 | - | - | - |
| 13 | of which: non-SMEs | 72 | 1 | 12 | 3 | 0 | 0 | 0 |
| 14 | Equity exposures | 4 | 41 | 33 | 0 | - | - | - |
| 15 | Other non-credit-obligation assets | - | - | - | - | - | - | - |
| **16** | **Total amount under IRB approach** | **7,613** | **5,815** | **12,195** | **1,835** | **208** | **716** | **520** |
| 17 | Central governments and central banks | 176 | 351 | 4,134 | 547 | - | 306 | - |
| 18 | Regional governments or local authorities | 289 | 162 | 2,765 | - | - | - | - |
| 19 | Public-sector entities | - | - | 731 | 0 | - | - | - |
| 20 | Multilateral development banks | - | - | - | - | - | - | - |
| 21 | International organizations | - | - | - | - | - | - | - |
| 22 | Institutions | 36 | 83 | 64 | 50 | - | - | - |
| 23 | Corporates | 245 | 425 | 1,225 | 138 | 20 | 77 | 15 |
| 24 | of which: SMEs | 4 | - | 7 | 1 | - | - | - |
| 25 | Retail business | 6 | 1 | 1 | 657 | 0 | 0 | - |
| 26 | of which: SMEs | - | - | - | - | - | - | - |
| 27 | Exposures secured by mortgages on immovable property | - | - | - | 57 | - | - | - |
| 28 | of which: SMEs | - | - | - | - | - | - | - |
| 29 | Exposures in default | 0 | 21 | 0 | 53 | - | 13 | - |
| 30 | Exposures associated with particularly high risk | 50 | - | - | - | - | - | - |
| 31 | Covered bonds | 65 | - | 14 | 26 | - | - | - |
| 32 | Exposures to institutions and corporates with a short-term credit assessment | - | - | - | - | - | - | - |
| 33 | CIUs | 98 | 396 | 991 | 16 | - | 1 | 2 |
| 34 | Equity exposures | - | - | 0 | 5 | - | 5 | - |
| 35 | Other items | 39 | - | - | 15 | - | - | - |
| **36** | **Total amount under Standardized Approach** | **1,004** | **1,439** | **9,924** | **1,563** | **20** | **402** | **16** |
| **37** | **Total as at Dec. 31, 2020** | **8,617** | **7,253** | **22,119** | **3,398** | **228** | **1,118** | **536** |
| 37 | Total as at Dec. 31, 2019 | 11,518 | 8,491 | 19,411 | 4,213 | 362 | 1,512 | 503 |

| | € million | Hong Kong | Other countries | Slovakia | Emerging markets | Turkey | Hungary | Croatia |
|---|---|---|---|---|---|---|---|---|
| 1 | Central governments and central banks | 0 | - | - | 114 | - | - | 114 |
| 2 | Institutions | 63 | 88 | 11 | 2,364 | 441 | 2 | 3 |
| 3 | Corporates | 125 | 93 | - | 4,730 | 186 | 17 | - |
| 4 | of which: specialized lending | - | 51 | - | 1,105 | 51 | 16 | - |
| 5 | of which: SMEs | - | - | - | 2 | - | - | - |
| 6 | Retail business | 2 | 8 | 0 | 20 | 1 | 1 | 0 |
| 7 | Exposures secured by mortgages on immovable | 1 | 6 | - | 15 | 0 | 0 | 0 |
| 8 | of which: SMEs | - | - | - | - | - | - | - |
| 9 | of which: non-SMEs | 1 | 6 | - | 15 | 0 | 0 | 0 |
| 10 | Qualified revolving | - | - | - | - | - | - | - |
| 11 | Other retail business | 1 | 2 | 0 | 5 | 0 | 1 | 0 |
| 12 | of which: SMEs | - | 1 | - | - | - | - | - |
| 13 | of which: non-SMEs | 1 | 2 | 0 | 5 | 0 | 1 | 0 |
| 14 | Equity exposures | - | 0 | - | 1 | - | - | - |
| 15 | Other non-credit-obligation assets | - | - | - | - | - | - | - |
| **16** | **Total amount under IRB approach** | **191** | **189** | **11** | **7,229** | **627** | **20** | **118** |
| 17 | Central governments and central banks | 1 | 38 | 202 | 1,192 | - | 526 | - |
| 18 | Regional governments or local authorities | - | - | - | 1 | - | 1 | - |
| 19 | Public-sector entities | - | - | 0 | - | - | - | - |
| 20 | Multilateral development banks | - | - | - | - | - | - | - |
| 21 | International organizations | - | - | - | - | - | - | - |
| 22 | Institutions | 43 | 3 | 3 | 38 | - | 19 | - |
| 23 | Corporates | 18 | 7 | - | 1,494 | 325 | 33 | - |
| 24 | of which: SMEs | - | 1 | - | - | - | - | - |
| 25 | Retail business | - | 0 | 657 | 381 | 0 | 273 | 0 |
| 26 | of which: SMEs | - | - | - | - | - | - | - |
| 27 | Exposures secured by mortgages on immovable | - | - | 57 | 1,577 | - | 1,024 | - |
| 28 | of which: SMEs | - | - | - | - | - | - | - |
| 29 | Exposures in default | 18 | 0 | 22 | 68 | - | 7 | 0 |
| 30 | Exposures associated with particularly high risk | - | - | - | - | - | - | - |
| 31 | Covered bonds | - | - | 26 | 8 | - | 8 | - |
| 32 | Exposures to institutions and corporates with a short-term credit assessment | - | - | - | - | - | - | - |
| 33 | CIUs | 11 | 2 | - | 115 | 9 | 1 | 0 |
| 34 | Equity exposures | - | - | - | 0 | - | - | - |
| 35 | Other items | 0 | - | 15 | 45 | - | 28 | - |
| **36** | **Total amount under Standardized Approach** | **93** | **51** | **981** | **4,921** | **333** | **1,919** | **0** |
| **37** | **Total as at Dec. 31, 2020** | **283** | **240** | **992** | **12,150** | **960** | **1,939** | **118** |
| 37 | Total as at Dec. 31, 2019 | - | 268 | 1,062 | 12,919 | 785 | 2,012 | 451 |

| € million | | Liberia | Russia | China | Marshall Islands | Other countries | Supranational organizations | Other European institutions, governing bodies, and organizations |
|---|---|---|---|---|---|---|---|---|
| 1 | Central governments and central banks | - | - | - | - | 0 | 1,902 | - |
| 2 | Institutions | - | 138 | 374 | - | 1,405 | - | - |
| 3 | Corporates | 644 | 609 | 334 | 1,123 | 1,818 | - | - |
| 4 | of which: specialized lending | - | 327 | - | - | 711 | - | - |
| 5 | of which: SMEs | - | - | - | - | 2 | - | - |
| 6 | Retail business | - | 2 | 4 | - | 11 | - | - |
| 7 | Exposures secured by mortgages on immovable | - | 2 | 3 | - | 9 | - | - |
| 8 | of which: SMEs | - | - | - | - | - | - | - |
| 9 | of which: non-SMEs | - | 2 | 3 | - | 9 | - | - |
| 10 | Qualified revolving | - | - | - | - | - | - | - |
| 11 | Other retail business | - | 0 | 1 | - | 3 | - | - |
| 12 | of which: SMEs | - | - | - | - | - | - | - |
| 13 | of which: non-SMEs | - | 0 | 1 | - | 3 | - | - |
| 14 | Equity exposures | - | - | - | - | 1 | - | - |
| 15 | Other non-credit-obligation assets | - | - | - | - | - | - | - |
| **16** | **Total amount under IRB approach** | **644** | **749** | **712** | **1,123** | **3,236** | **1,902** | **-** |
| 17 | Central governments and central banks | - | 4 | 104 | - | 558 | - | - |
| 18 | Regional governments or local authorities | - | - | - | - | - | - | - |
| 19 | Public-sector entities | - | - | - | - | - | - | - |
| 20 | Multilateral development banks | - | - | - | - | - | - | - |
| 21 | International organizations | - | - | - | - | - | 735 | 476 |
| 22 | Institutions | - | - | 19 | - | 0 | - | - |
| 23 | Corporates | 0 | 4 | 88 | 25 | 1,019 | - | - |
| 24 | of which: SMEs | - | - | - | - | - | - | - |
| 25 | Retail business | - | 0 | 108 | - | 0 | - | - |
| 26 | of which: SMEs | - | - | - | - | - | - | - |
| 27 | Exposures secured by mortgages on immovable | - | - | 553 | - | - | - | - |
| 28 | of which: SMEs | - | - | - | - | - | - | - |
| 29 | Exposures in default | - | - | 1 | 19 | 42 | - | - |
| 30 | Exposures associated with particularly high risk | - | - | - | - | - | - | - |
| 31 | Covered bonds | - | - | - | - | - | - | - |
| 32 | Exposures to institutions and corporates with a | - | - | - | - | - | - | - |
| 33 | CIUs | 0 | 4 | 9 | - | 93 | 52 | 52 |
| 34 | Equity exposures | - | - | - | - | 0 | - | - |
| 35 | Other items | - | - | 17 | - | - | - | - |
| **36** | **Total amount under Standardized Approach** | **0** | **12** | **900** | **44** | **1,712** | **787** | **528** |
| **37** | **Total as at Dec. 31, 2020** | **644** | **761** | **1,612** | **1,167** | **4,948** | **2,689** | **528** |
| 37 | Total as at Dec. 31, 2019 | 1,089 | 516 | 1,704 | 2,173 | 4,189 | 316 | 1 |

| € million | | European Investment Bank | European Financial Stability Facility | International Bank for Reconstruction and Development | Other countries | Not allocated to a geographical area |
|---|---|---|---|---|---|---|
| 1 | Central governments and central | 989 | - | 391 | 522 | - |
| 2 | Institutions | - | - | - | - | - |
| 3 | Corporates | - | - | - | - | - |
| 4 | of which: specialized lending | - | - | - | - | - |
| 5 | of which: SMEs | - | - | - | - | - |
| 6 | Retail business | - | - | - | - | - |
| 7 | Exposures secured by mortgages on immovable property | - | - | - | - | - |
| 8 | of which: SMEs | - | - | - | - | - |
| 9 | of which: non-SMEs | - | - | - | - | - |
| 10 | Qualified revolving | - | - | - | - | - |
| 11 | Other retail business | - | - | - | - | - |
| 12 | of which: SMEs | - | - | - | - | - |
| 13 | of which: non-SMEs | - | - | - | - | - |
| 14 | Equity exposures | - | - | - | - | - |
| 15 | Other non-credit-obligation assets | - | - | - | - | 932 |
| **16** | **Total amount under IRB approach** | **989** | **-** | **391** | **522** | **932** |
| 17 | Central governments and central | - | - | - | - | 15 |
| 18 | Regional governments or local | - | - | - | - | - |
| 19 | Public-sector entities | - | - | - | - | - |
| 20 | Multilateral development banks | - | - | - | - | - |
| 21 | International organizations | - | 103 | - | 156 | - |
| 22 | Institutions | - | - | - | - | 1 |
| 23 | Corporates | - | - | - | - | 36 |
| 24 | of which: SMEs | - | - | - | - | - |
| 25 | Retail business | - | - | - | - | - |
| 26 | of which: SMEs | - | - | - | - | - |
| 27 | Exposures secured by mortgages on immovable property | - | - | - | - | - |
| 28 | of which: SMEs | - | - | - | - | - |
| 29 | Exposures in default | - | - | - | - | - |
| 30 | Exposures associated with particularly high risk | - | - | - | - | - |
| 31 | Covered bonds | - | - | - | - | - |
| 32 | Exposures to institutions and corporates with a short-term credit assessment | - | - | - | - | - |
| 33 | CIUs | - | - | - | - | - |
| 34 | Equity exposures | - | - | - | - | - |
| 35 | Other items | - | - | - | - | 5 |
| **36** | **Total amount under Standardized Approach** | **-** | **103** | **-** | **156** | **57** |
| **37** | **Total as at Dec. 31, 2020** | **989** | **103** | **391** | **678** | **989** |
| 37 | Total as at Dec. 31, 2019 | 61 | 62 | - | 191 | 1,129 |

## Annex 2: Materiality threshold for tables EU CRB-C and EU CR1-C and for the list of immaterial countries

The materiality threshold is used as follows for Fig. 29 (EU CRB-C) and Fig. 35 (EU CR1-C).

The individual countries are assigned to regions in accordance with the disclosures in the commercial-law risk report. Within a region, the countries whose net exposure makes up at least 5 percent of the total exposure are shown individually. All other countries in that region are aggregated under 'Other'.

FIG. 104 – ANNEX 2: MATERIALITY THRESHOLD FOR TABLES EU CRB-C AND EU CR1-C AND FOR THE LIST OF IMMATERIAL COUNTRIES

| Region | Country | Share of total exposure (%) |
|---|---|---|
| Other industrialized countries | France | 23.72% |
| | United Kingdom | 18.88% |
| | Luxembourg | 12.30% |
| | Netherlands | 8.82% |
| | Austria | 8.35% |
| | Switzerland | 12.97% |
| | United States | 14.96% |
| Advanced economies | Hong Kong | 7.75% |
| | Korea | 13.96% |
| | Malta | 7.87% |
| | Singapore | 34.18% |
| | Slovakia | 27.54% |
| | Other countries | 8.71% |
| Emerging markets | Russia | 10.23% |
| | China | 11.47% |
| | Croatia | 5.29% |
| | Liberia | 5.68% |
| | Marshall Islands | 10.32% |
| | Turkey | 6.94% |
| | Hungary | 13.86% |
| | Other countries | 36.21% |
| Supranational organizations | Other European institutions, governing bodies, and organizations | 15.12% |
| | European Financial Stability Facility | 8.81% |
| | European Investment Bank | 39.39% |
| | International Bank for Reconstruction and Development | 15.31% |
| | Other | 21.37% |

The following table contains a list of the immaterial countries included in the 'Other' rows.

| Region | Country |
|---|---|
| Other industrialized countries: Other countries | Italy |
| | Spain |
| | Canada |
| | Ireland |
| | Japan |
| | Norway |
| | Sweden |
| | Australia |
| | Belgium |
| | Finland |
| | Portugal |
| | Denmark |
| | Cayman Islands |
| | New Zealand |
| | Isle of Man |

| Region | Country |
|---|---|
| | British Virgin Islands |
| | Jersey |
| | Guernsey |
| | Liechtenstein |
| | Faroe Islands |
| | Gibraltar |
| | Andorra |
| | Netherlands Antilles |
| | Latvia |
| | Curaçao |
| | Lithuania |
| | Pitcairn Islands |
| **Advanced economies:** | Taiwan |
| | Czech Republic |
| | Israel |
| | Greece |
| | Cyprus |
| | Slovenia |
| | Estonia |
| | Iceland |
| | San Marino |
| **Emerging markets: Other countries** | Bermuda |
| | India |
| | Poland |
| | Brazil |
| | Panama |
| | Vietnam |
| | Indonesia |
| | United Arab Emirates |
| | Mexico |
| | South Africa |
| | Qatar |
| | Ghana |
| | Egypt |
| | Bahamas |
| | Saudi Arabia |
| | Chile |
| | Philippines |
| | Kuwait |
| | Oman |
| | Peru |
| | Belarus |
| | Malaysia |
| | Tanzania |
| | Jordan |
| | Cuba |
| | Azerbaijan |
| | Bahrain |
| | Ethiopia |
| | Argentina |
| | Bangladesh |
| | Thailand |
| | Turkmenistan |
| | Angola |
| | Paraguay |
| | Sudan |
| | Bulgaria |
| | Myanmar |
| | Ukraine |

| Region | Country |
|---|---|
| | Kazakhstan |
| | Guinea |
| | Namibia |
| | Morocco |
| | Rwanda |
| | Iran |
| | Togo |
| | Colombia |
| | Romania |
| | Costa Rica |
| | Mongolia |
| | Serbia |
| | Armenia |
| | Senegal |
| | Georgia |
| | Benin |
| | Tunisia |
| | Mauritius |
| | Barbados |
| | Nigeria |
| | Niger |
| | Uzbekistan |
| | El Salvador |
| | Bolivia |
| | Côte d'Ivoire |
| | Lebanon |
| | Mali |
| | Bosnia and Herzegovina |
| | Montenegro |
| | Zimbabwe |
| | Algeria |
| | Papua New Guinea |
| | Sri Lanka |
| | Jamaica |
| | Ecuador |
| | Dominican Republic |
| | Dominica |
| | Grenada |
| | Venezuela |
| | Uruguay |
| | Botswana |
| | East Timor |
| | Eritrea |
| | Cameroon |
| | Kenya |
| | Guatemala |
| | Cambodia |
| | Belize |
| | Democratic Republic of the Congo |
| | Montenegro |
| | Zambia |
| | Brunei |
| | Iraq |
| | Pakistan |
| | Saint Lucia |
| | Gabon |
| | North Macedonia |
| | Honduras |
| | Moldova |

| Region | Country |
|---|---|
| | Albania |
| Supranational organizations: Other | International Finance Corporation, Washington, USA |
| | Inter-American Development Bank, Washington, USA |
| | International Development Association, Washington, USA |
| | African Development Bank, Abidjan, Côte d'Ivoire |
| | European Bank for Reconstruction and Development, London, United |
| | Asian Development Bank, Manila, Philippines |
| | Council of Europe Development Bank |
| | Nordic Investment Bank, Helsinki, Finland |
| | Single Resolution Mechanism |
| | European Stability Mechanism |
| | Andean Development Corporation, Caracas, Venezuela |

# 17 Overview of quantitative and qualitative requirements pursuant to the CRR, EBA/GL/2016/11, and other sources

| Legal basis | Table name | Source | Description | Relevance | Format | Disclosure frequency | | | Reference to the regulatory risk report | Reference |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Quarterly | Half-yearly | Annually | | |
| | | CRR<br>EBA/GL/2016/11 paragraph 4.2 section A | Overview of quantitative and qualitative requirements pursuant to the CRR, EBA/GL/2016/11, and other sources | x | Flexible | x | x | x | Section 17 | |
| Article 431 (3) | | CRR | Scope of disclosure requirements – disclosure policy | x | Flexible | — | — | x | Section 1.2 | |
| Article 432 | Inclusion of entities in the DZ BANK banking group in quantitative regulatory disclosures | CRR<br>EBA/GL/2014/14 | Non-material, proprietary, or confidential information | x | Flexible | x | x | x | Section 3.1 | |
| Article 433 | | CRR<br>EBA/GL/2014/14 | Frequency of disclosure | x | Flexible | x | x | x | Section 1.2 | |
| Article 434 | | CRR<br>EBA/GL/2014/14 | Means of disclosure | x | Flexible | x | x | x | Section 1.1 | |
| Article 435 (1) | EU OVA, EU CRA, EU CCRA, EU MRA, and EU LIA | CRR<br>EBA/GL/2016/11 paragraph 4.3 sections A and B | – Institution's risk management approach<br>– General qualitative information about credit risk, counterparty credit risk, and market risk | x | Flexible | — | — | x | Sections 1.2, 2.1, 2.1.1, 2.1.2, 2.1.3, 5.1, 6.1, 8.1, 9, 10, 11.1 | DZ BANK Group and DZ BANK risk report in the group management report within the Annual Report ('commercial-law risk report') |
| Article 435 (2) letter a | Number of executive or supervisory directorships held by members of the management body | CRR<br>EBA/GL/2016/11 paragraph 57<br>EBA/GL/2017/12 | Number of executive or supervisory directorships held by members of the management body | x | Flexible | — | — | x | Section 2.2.1 | |
| Article 435 (2) letter b | | CRR<br>EBA/GL/2016/11 paragraph 58<br>EBA/GL/2017/12 | Recruitment policy for the selection of members of the management body and their actual knowledge, skills and expertise | x | Flexible | — | — | x | Section 2.2.2 | |

| Legal basis | Table name | Source | Description | Relevance | Format | Disclosure frequency | | | Reference to the regulatory risk report | Reference |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Quarterly | Half-yearly | Annually | | |
| Article 435 (2) letter c | | CRR<br>EBA/GL/2016/11 paragraph 59<br>EBA/GL/2017/12 | Diversity policy for selecting members of the management body, objectives and targets of the policy, and achievement | x | Flexible | — | — | x | Section 2.2.3 | |
| Article 435 (2) letter d | | CRR | Disclosures regarding the formation of a risk committee and the number of times it has met | x | Flexible | — | — | x | Section 2.3 | Commercial-law risk report |
| Article 435 (2) letter e | EU OVA | CRR<br>EBA/GL/2016/11 paragraphs 49 and 60<br>EBA/GL/2017/12 | Information flow to the Supervisory Board | x | Flexible | — | — | x | Section 2.4 | Commercial-law risk report |
| Article 436 sentence 1 letter a | | CRR | Name of the institution to which the requirements of the CRR apply | x | Flexible | — | — | x | Section 1.2 | |
| Article 436 sentence 1 letter b | EU LIA, EU LI1, EU LI2, and EU LI3 | CRR<br>EBA/GL/2016/11 paragraph 4.4 | – Consolidation matrix – differences in the scopes of consolidation (entity by entity),<br>– Differences between accounting and regulatory scopes of consolidation and<br>– Reconciliation of financial statements categories to regulatory risk categories,<br>– Sources of differences between regulatory exposure amounts and carrying amounts on the balance sheet and<br>– Explanation of the differences between the carrying amounts for accounting purposes and the regulatory exposures. | x | Flexible | — | — | x | Section 3 | |
| Article 436 sentence 1 letter c | | CRR | Current or foreseen material practical or legal impediment to the prompt transfer of own funds or repayment of liabilities among the parent company and its subsidiaries | Not relevant | Flexible | — | — | x | Section 3.2 | |

| Legal basis | Table name | Source | Description | Relevance | Format | Disclosure frequency | | | Reference to the regulatory risk report | Reference |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Quarterly | Half-yearly | Annually | | |
| Article 436 sentence 1 letter d | | CRR | Aggregate amount by which actual own funds are less than required in all subsidiaries not included in the consolidation, and the name or names of such subsidiaries | Not relevant | Flexible | — | — | x | - | |
| Article 436 sentence 1 letter e | | CRR | Use of the waiver | x | Flexible | — | — | x | Section 3.2 | |
| Article 437 (1) letter a | Reconciliation of equity reported on the balance sheet with regulatory own funds | CRR Implementing Regulation (EU) 1423/2013 Annex II | Full reconciliation of own funds items to the financial statements | x | Flexible | — | x | x | Section 4.2.2 | |
| Article 437 (1) letter b | Main features of capital instruments | CRR Implementing Regulation (EU) 1423/2013 Annex I | Description of the main features of the common equity Tier 1, additional Tier 1, and Tier 2 instruments issued by institutions | x | Fixed | — | x | x | Section 4.2.1 | DZ BANK's website in the Investor Relations section under Bondholder Information, subsection Capital Instruments |
| Article 437 (1) letter c | | CRR | Full terms and conditions of capital instruments | x | Flexible | — | x | x | Section 4.2.1 | DZ BANK's website in the Investor Relations section under Bondholder Information, subsection Capital Instruments |
| Article 437 (1) letters d and e | Structure of own funds | CRR Implementing Regulation (EU) 1423/2013 Annex IV | Disclosure of the nature and amounts of specific elements of own funds | x | Fixed | x | x | x | Section 4.2.1 | |
| Article 437 (1) letter f | | CRR | Explanation of the basis on which capital ratios are calculated, if determined on a basis other than that laid down in the CRR | Not relevant | Flexible | — | x | x | - | |

| Legal basis | Table name | Source | Description | Relevance | Format | Disclosure frequency | | | Reference to the regulatory risk report | Reference |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Quarterly | Half-yearly | Annually | | |
| Article 438 sentence 1 letter a | | CRR | Qualitative disclosure requirements regarding the approach to assessing the adequacy of internal capital | x | Flexible | — | — | x | Section 4.1 | |
| Article 438 sentence 1 letter b | | CRR | The result of the institution's internal capital adequacy assessment process, if requested by the relevant competent authority | x | Flexible | — | — | x | Section 4.2.6 | |
| Article 438 sentence 1 letters c to f | EU OV1 and capital requirements | CRR EBA/GL/2016/11 paragraph 69 | Overview of risk-weighted assets (RWAs) and capital requirements | x | Fixed | x | x | x | Section 4.2.3 | |
| Article 438 sentence 1 letter d | EU CR8 | CRR EBA/GL/2016/11 paragraph 109 | RWA flow statement for credit risk under the IRB approach | x | Fixed | x | x | x | Section 6.6.4.5 | |
| Article 438 sentence 1 letters c to d | EU INS1 | CRR EBA/GL/2016/11 paragraph 71 | Non-deducted participations in insurance undertakings | x | Fixed | — | x | x | Section 4.2.4 | |
| Article 438 sentence 2 | EU CR10 | CRR EBA/GL/2016/11 paragraph 70 | IRB (specialized lending and long-term equity investments) | x | Flexible | — | x | x | Section 4.2.4 | |
| Article 439 sentence 1 letters a to d | EU CCRA | CRR EBA/GL/2016/11 paragraph 53 | Qualitative disclosure requirements regarding counterparty credit risk | x | Flexible | — | - | x | Section 6.8.1 | Commercial-law risk report |
| Article 439 sentence 1 letters e, f, and i | EU CCR1, EU CCR2, EU CCR8, EU CCR5-A, EU CCR5-B | CRR EBA/GL/2016/11 paragraphs 114, 115, 116, 120, 122 | – Analysis of counterparty credit risk by approach;<br>– Capital requirement for adjustment of the credit valuation;<br>– Exposures to central counterparties;<br>– Impact of netting and collateral held on exposure values;<br>– Composition of collateral for exposures subject to counterparty credit risk | x | Fixed & flexible | — | x | x | Sections 1.2, 6.8.2, 6.8.5.1, 6.8.5.2 | |
| Article 439 sentence 1 letters g to h | EU CCR6 | CRR EBA/GL/2016/11 paragraph 123 | Exposures secured by credit derivatives | x | Flexible | — | x | x | Section 6.8.5.3 | |

| Legal basis | Table name | Source | Description | Relevance | Format | Disclosure frequency | | | Reference to the regulatory risk report | Reference |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Quarterly | Half-yearly | Annually | | |
| Article 440 | | CRR<br>Delegated Regulation (EU) 2015/1555 | Countercyclical capital buffer | x | Flexible | — | — | x | Section 12.1 | |
| Article 441 | | CRR<br>Implementing Regulation (EU) 2016/818 | Indicators of global systemic importance | x | Flexible | — | — | x | Section 12.2 | DZ BANK's website in the Investor Relations section under Reports |
| Article 442 sentence 1 letters a and b | EU CRB-A | CRR<br>EBA/GL/2016/11 paragraph 76 | Additional disclosure related to the credit quality of assets | x | Flexible | — | — | x | Section 6.2.1 | Commercial-law risk report |
| Article 442 sentence 1 letter c | EU CRB-B | CRR<br>EBA/GL/2016/11 paragraph 77 | Total and Ø net amount of exposures | x | Flexible | — | — | x | Section 6.2.2.1 | |
| Article 442 sentence 1 letter d | EU CRB-C | CRR<br>EBA/GL/2016/11 paragraph 78 | Geographical breakdown of exposures | x | Flexible | — | — | x | Section 6.2.2.2 | |
| Article 442 sentence 1 letter e | EU CRB-D | CRR<br>EBA/GL/2016/11 paragraph 81 | Concentration of exposures by industry or counterparty type | x | Flexible | — | — | x | Section 6.2.2.3 | |
| Article 442 sentence 1 letter f | EU CRB-E (only on-balance-sheet exposures) and CRB-E (on-balance-sheet exposures, off-balance-sheet exposures, and SFTs) | CRR<br>EBA/GL/2016/11 paragraph 83 | Residual maturity of exposures | x | Flexible | — | — | x | Section 6.2.2.4 | |
| Article 442 sentence 1 letters g and h | EU CR1-A | CRR<br>EBA/GL/2016/11 paragraph 88 | Credit quality of exposures by exposure class and instrument | x | Fixed | — | x | x | Section 6.2.2.5 | |
| Article 442 sentence 1 letter g | EU CR1-B | CRR<br>EBA/GL/2016/11 paragraph 89 | Credit quality of exposures by industry or counterparty type | x | Fixed | — | x | x | Section 6.2.2.6 | |
| Article 442 sentence 1 letter h | EU CR1-C | CRR<br>EBA/GL/2016/11 paragraph 89 | Credit quality of exposures by geography | x | Fixed | — | x | x | Section 6.2.2.7 | |

| Legal basis | Table name | Source | Description | Relevance | Format | Disclosure frequency | | | Reference to the regulatory risk report | Reference |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Quarterly | Half-yearly | Annually | | |
| Article 442 sentence 1 letters g and h | EU CR1-D | CRR EBA/GL/2016/11 paragraph 89 | Maturity structure of past-due exposures | x | Fixed | — | x | x | Section 6.3 | |
| Article 442 sentence 1 letters g and i | EU CR1-E | CRR EBA/GL/2016/11 paragraph 90 | Non-performing and forborne exposures | x | Flexible | — | x | x | Section 6.3 | |
| Article 442 sentence 1 letter i | EU CR2-A and EU CR2-B | CRR EBA/GL/2016/11 paragraph 92 | Changes in the stock of general and specific credit risk adjustments and changes in the stock of defaulted and impaired loans and debt securities | x | Fixed | — | x | x | Section 6.2.2.8 | |
| Article 443 | Disclosure template A – encumbered and unencumbered assets<br>Disclosure template B – collateral received<br>Disclosure template C – sources of encumbrance<br>Disclosure template D – accompanying narrative information | CRR Delegated Regulation (EU) 2017/2295 | Asset encumbrance | x | Fixed | — | - | x | Section 14 | |
| Article 444 sentence 1 letters a to d | EU CRD | CRR EBA/GL/2016/11 paragraph 97 | Qualitative disclosure requirements regarding institutions' use of external credit ratings under the Standardized Approach to credit risk | x | Flexible | — | — | x | Section 6.5.1 | |
| Article 444 sentence 1 letter e | EU CR5, EU CCR3, and CRSA exposures before credit risk mitigation by rating category | CRR EBA/GL/2016/11 paragraphs 100 and 117 | Standardized Approach exposures before and after credit risk mitigation by rating category | x | Fixed | — | x | x | Sections 6.5.2, 6.8.3 | |
| Article 445 | EU MR1 | CRR EBA/GL/2016/11 paragraph 127 | Market risk under the Standardized Approach | x | Fixed | — | x | x | Section 8.3 | |
| Article 446 | | CRR | Operational risk | x | Fixed | — | x | x | Section 9 | Commercial-law risk report |

| Legal basis | Table name | Source | Description | Relevance | Format | Disclosure frequency | | | Reference to the regulatory risk report | Reference |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Quarterly | Half-yearly | Annually | | |
| Article 447 sentence 1 letter a | | CRR | Accounting policies applied to long-term equity investments | x | Flexible | — | — | x | Section 11.2 | |
| Article 447 sentence 1 letters b and c | Measurement of equity exposures | CRR | Disclosure of equity investment risk: carrying amounts under commercial law and current market value | x | Flexible | — | — | x | Section 11.3 | |
| Article 447 sentence 1 letters d and e | Realized and unrealized gains and losses on equity exposures in accordance with IFRS | CRR | Inclusion of unrealized gains and losses on long-term equity investments in own funds | x | Flexible | — | — | x | Section 11.3 | |
| Article 448 sentence 1 letter a | | CRR BaFin Circular 06/2019 | Nature of interest-rate risk, key assumptions made, and frequency of risk measurement | x | Flexible | — | — | x | Section 8.5 | |
| Article 448 sentence 1 letter b | Interest-rate risk in the banking book | CRR BaFin Circular 06/2019 | Interest-rate risk in the banking book | x | Flexible | — | — | x | Section 8.5 | |
| Article 449 sentence 1 letters a, d, e, and i | Securitization exposures as originator and sponsor | CRR | Scope, objectives, and risks of securitization | x | Flexible | — | — | x | Section 7.1 | |
| Article 449 sentence 1 letters b, c, f, and g | | CRR | Risk management in respect of securitizations | x | Flexible | — | — | x | Section 7.2 | Commercial-law risk report |
| Article 449 sentence 1 letter h | | CRR | Procedure for determining risk-weighted exposures | x | Flexible | — | — | x | Section 7.4.1 | |
| Article 449 sentence 1 letter j (i), (ii), (iii), (iv), (v), and (vi) | | CRR | Accounting policies applied to securitizations | x | Flexible | — | — | x | Section 7.3 | |
| Article 449 sentence 1 letter l | | CRR | Internal ratings | x | Flexible | — | — | x | Section 7.4.3 | |

| Legal basis | Table name | Source | Description | Relevance | Format | Disclosure frequency | | | Reference to the regulatory risk report | Reference |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Quarterly | Half-yearly | Annually | | |
| Article 449 sentence 1 letter k | Reconciliation of external and internal ABS ratings | CRR | External ratings | x | Flexible | — | — | x | Section 7.4.2 | |
| Article 449 sentence 1 letter m | | CRR | Explanation of significant changes to any of the quantitative disclosures in letters n to q since the last reporting period | x | Flexible | — | — | x | Section 7.5 | |
| Article 449 sentence 1 letters n (i) and q | Total amount of securitizations with DZ BANK banking group as originator and sponsor | CRR | Total amount of asset securitizations | x | Flexible | — | — | x | Section 7.5.1 | |
| Article 449 sentence 1 letters n (iii), (vi) and r | | CRR | Total amount of planned securitizations; securitizations during the reporting period | x | Flexible | — | — | x | Sections 1.2, 7.5.3, 7.5.8 | |
| Article 449 sentence 1 letter n (ii) | Retained, purchased or off-balance-sheet securitization exposures | CRR | Retained, purchased or off-balance-sheet securitization exposures | x | Flexible | — | — | x | Section 7.5.4 | |
| Article 449 sentence 1 letter n (iv) | | CRR | For securitized facilities subject to early amortization treatment, the aggregate drawn exposures attributed to the originator's and investor's interests respectively, the aggregate capital requirements incurred by the institution against the originator's interest and the aggregate capital requirements incurred by the institution against the investor's shares of drawn balances and undrawn lines | Not relevant | Flexible | — | — | x | Section 7 | |
| Article 449 sentence 1 letter o (i) | EU OV1 and exposures and capital requirements for retained or purchased securitizations | CRR EBA/GL/2016/11 paragraph 69 | Exposure values and capital requirements for retained or purchased securitizations broken down by the approach used to calculate the capital requirement | x | Fixed | x | x | x | Sections 4.2.3, 7.5.4 | |

| Legal basis | Table name | Source | Description | Relevance | Format | Disclosure frequency | | | Reference to the regulatory risk report | Reference |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Quarterly | Half-yearly | Annually | | |
| Article 449 sentence 1 letter n (v) | Deductions from own funds and securitization exposures with a risk weight of 1,250 percent by asset class | CRR | Securitization exposures and deductions from own funds | x | Flexible | — | — | x | Section 7.5.6 | |
| Article 449 sentence 1 letter o (ii) | Re-securitization exposures and collateralization amounts | CRR | Re-securitization exposures and collateralization amounts | x | Flexible | — | — | x | Section 7.5.7 | |
| Article 449 sentence 1 letter p | Impaired securitizations, past-due securitized loans, and losses realized during the reporting period | CRR | Impaired securitizations, past-due securitized loans, and losses realized during the reporting period | x | Flexible | — | — | x | Section 7.5.2 | |
| Article 450 | | CRR EBA/GL/2015/22 | Remuneration policy | x | Flexible | — | — | x | Section 15 | DZ BANK's website in the Investor Relations section under Reports, 'Remuneration policy disclosures' |
| Article 451 (1) letter a | Summary reconciliation of assets on the balance sheet to the leverage ratio total exposure measure | CRR Implementing Regulation (EU) 2016/200 Annex I (LRSum) | Reconciliation of the total assets of the DZ BANK Group to the leverage ratio total exposure measure | x | Fixed | — | x | x | Section 13.1 | |
| Article 451 (1) letter a | Leverage ratio according to the CRR transitional guidance and after full application of the CRR | CRR | Components for calculating the leverage ratio in accordance with the CRR transitional guidance and after application of the CRR in full | x | Flexible | x | x | x | Section 13.1 | |
| Article 451 (1) letter b | Leverage ratio common disclosure | CRR Implementing Regulation (EU) 2016/200 Annex I (LRCom) | Individual components of the total exposure measure, Tier 1 capital, and the resulting leverage ratio | x | Fixed | — | x | x | Section 13.1 | |

| Legal basis | Table name | Source | Description | Relevance | Format | Disclosure frequency | | | Reference to the regulatory risk report | Reference |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Quarterly | Half-yearly | Annually | | |
| Article 451 (1) letter c | Breakdown of on-balance-sheet exposures (excluding derivatives, SFTs and exempted exposures) | CRR Implementing Regulation (EU) 2016/200 Annex I (LRSpl) | Breakdown by regulatory category of the exposures reported on the balance sheet | x | Fixed | — | x | x | Section 13.1 | |
| Article 451 (1) letters d and e | Change to the leverage ratio:<br>– If pass-through development loans are excluded<br>– If exposures within the cooperative financial network are excluded<br>– If the exclusions in the tables above are applied cumulatively | CRR Implementing Regulation (EU) 2016/200 Annex I (LRQua) | Description of the processes for monitoring the risk of excessive leverage and factors influencing the leverage ratio during the reporting period | x | Flexible | x | x | x | Sections 13.2, 13.3 | |
| Article 452 sentence 1 letters a, b, and c | EU CRE and distribution of the exposure classes and their percentage of coverage under the Standardized Approach to credit risk, FIRB approach, and AIRB approach (share of total EAD) | CRR EBA/GL/2016/11 paragraph 103 | Qualitative disclosure requirements regarding IRB models | x | Flexible | — | — | x | Sections 6.2.1, 6.6.1, 6.6.2, 6.6.3 | Commercial-law risk report |
| Article 452 sentence 1 letters d, e, f, and g | EU CR6 and EU CCR4 | CRR EBA/GL/2016/11 paragraphs 107 and 118 | IRB approach – credit risk exposures by exposure class and PD range and counterparty credit risk exposures by portfolio and PD scale | x | Fixed | — | x | x | Sections 6.6.4, 6.8.4 | |
| Article 452 sentence 1 letter g | Year-on-year change in the actual losses in the total credit portfolio under the IRB approach by exposure class | CRR | Year-on-year change in the actual losses in the total credit portfolio under the IRB approach by exposure class | x | Flexible | — | — | x | Section 6.6.4.6 | |
| Article 452 sentence 1 letter h | | CRR | Description of the factors that impacted on the loss experience in the preceding period | x | Flexible | — | — | x | Section 6.6.4.6 | |

| Legal basis | Table name | Source | Description | Relevance | Format | Disclosure frequency | | | Reference to the regulatory risk report | Reference |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Quarterly | Half-yearly | Annually | | |
| Article 452 sentence 1 letter i | EU CR9 and comparison of loss estimates and actual losses in non-defaulting exposure classes under the IRB approach | CRR<br>EBA/GL/2016/11 paragraph 111 | IRB approach – backtesting of the probability of default (PD) per exposure class<br>Comparison of loss estimates and actual losses in non-defaulting exposure classes under the IRB approach | x | Flexible | — | — | x | Section 6.6.4.7 | |
| Article 452 sentence 1 letter j (ii) | Ø PD by country and exposure class under the foundation IRB approach | CRR | Ø risk parameters by country of domicile of borrowing entity and exposure class under the foundation IRB approach | x | Flexible | — | — | x | Section 6.6.4.8 | |
| Article 452 sentence 1 letter j (i) | Ø PD and LGD by country and exposure class under the advanced IRB approach | CRR | Ø risk parameters by country of domicile of borrowing entity and exposure class under the advanced IRB approach | x | Flexible | — | — | x | Section 6.6.4.8 | |
| Article 453 sentence 1 letters a to e | EU CRC | CRR<br>EBA/GL/2016/11 paragraph 93 | Qualitative disclosure requirements regarding credit risk mitigation techniques | x | Flexible | — | — | x | Section 6.4.1 | Commercial-law risk report |
| Article 453 sentence 1 letters f and g | EU CR3 and EU CR4 | CRR<br>EBA/GL/2016/11 paragraphs 94 and 99 | Credit risk mitigation techniques – overview; Standardized Approach – credit risk exposure and credit risk mitigation effects | x | Fixed | — | x | x | Sections 6.4.2, 6.5.2 | |
| Article 453 sentence 1 letter g | EU CR7 | CRR<br>EBA/GL/2016/11 paragraph 108 | IRB approach – effect on the RWAs of credit derivatives used as credit risk mitigation techniques | x | Fixed | — | x | x | Section 6.6.4 | |
| Article 454 | | CRR | Use of Advanced Measurement Approaches for operational risk | Not relevant | Flexible | — | — | x | Section 1.2 | |
| Article 455 sentence 1 letters a and b | EU MRB | CRR<br>EBA/GL/2016/11 paragraphs 54 and 66 | Qualitative disclosure requirements for institutions using the IMA | x | Flexible | — | — | x | Section 8.4.1 | |
| Article 455 sentence 1 letter c | EU MRA and EU LIA | CRR<br>EBA/GL/2016/11 paragraphs 54 and 66 | EU MR2-A – Market risk under the internal models approach | x | Fixed | — | x | x | Section 8.4.2 | |
| Article 455 sentence 1 letter e | EU MR2-A | CRR<br>EBA/GL/2016/11 paragraph 129 | EU MR2-A – Market risk under the internal models approach | x | Fixed | — | x | x | Section 8.4.2 | |

| Legal basis | Table name | Source | Description | Relevance | Format | Disclosure frequency | | | Reference to the regulatory risk report | Reference |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Quarterly | Half-yearly | Annually | | |
| Article 455 sentence 1 letter e | EU MR2-B | CRR EBA/GL/2016/11 paragraph 129 | EU MR2-B – RWA flow statements of market risk exposures under the IMA | x | Fixed | x | x | x | Section 8.4.2 | |
| Article 455 sentence 1 letter d | EU MR3 | CRR EBA/GL/2016/11 paragraph 130 | EU MR3 – IMA values for trading portfolios | x | Fixed | — | x | x | Section 8.4.2 | |
| Article 455 sentence 1 letter f | IMA values for each subportfolio | CRR | Additional default and migration risk measured in relation to the total trading book and in relation to the relevant subportfolios | x | Flexible | — | — | x | Section 8.4.2 | |
| Article 455 sentence 1 letter g | EU MR4 | CRR EBA/GL/2016/11 paragraph 132 | EU MR4 – Comparison of VaR estimates with gains/losses | x | Flexible | — | x | x | Section 8.4.2 | |
| LCR in conjunction with article 435 (1) | EU LIQA | CRR EBA/GL/2017/01 | Qualitative information on the LCR | x | Flexible | — | — | x | Sections 5.2, 5.3 | Commercial-law risk report |
| LCR in conjunction with article 435 (1) | EU LIQ1 and liquidity coverage ratio of the banking group | CRR EBA/GL/2017/01 | Levels and components of the LCR of the banking group | x | Fixed | x | x | x | Sections 5.2, 5.3 | |
| Section 26a | | KWG | Legal basis | x | Flexible | — | — | x | Sections 1.1, 1.2 | DZ BANK's website in the Investor Relations section under Reports |
| - | Capital ratios | - | Capital ratios | x | Flexible | x | x | x | Section 4.2.5 | |
| Pillar I and Pillar II requirements | | Pillar I and Pillar II requirements | Regulatory minimum requirements | x | Flexible | x | x | x | Section 4.2.6 | |
| Section 35 | | German Bank Recovery and Resolution Act (SAG) | Legal basis | x | Flexible | — | — | x | Section 1.1 | |
| Sections 17 and 18 | | FKAG and Delegated Regulation (EU) No. 342/2014 | Financial conglomerate solvency | x | Flexible | — | — | x | Section 4.2.7 | |

# 18 List of figures

# Editorial information

DZ BANK AG
Deutsche Zentral-Genossenschaftsbank,
Frankfurt am Main
Platz der Republik
60325 Frankfurt am Main
Germany

Postal address:
60265 Frankfurt am Main
Germany

Tel: +49 (0)69 7447 01
Fax: +49 (0)69 7447 1685
mail@dzbank.de
www.dzbank.com



This report is available in electronic form on our website at
https://www.dzbank.com/content/dzbank_com/en/home/DZ_BANK/investor_relations/reports/2020.html