Deutsche Bank

Pillar 3 Report 2020

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Regulatory framework

Introduction

This report replaces the document published on March 12, 2021 and considers a net income of € 0.3 billion in CET1 capital based on the proposed shareholder dividend payment of zero and our AT1 coupon accrual of € 0.2 billion for the year-end 2020 which is in line with the ECB Decision (EU) 2015/656 in accordance with the Article 26(2) of Regulation (EU) No 575/2013 (ECB/2015/4).

This Report provides Pillar 3 disclosures at the consolidated level of Deutsche Bank Group (the Group) as required by the global regulatory framework for capital and liquidity, established by the Basel Committee on Banking Supervision, also known as Basel 3. At the European level these are implemented in the disclosure requirements as provided in Part Eight of the “Regulation (EU) 575/2013 on prudential requirements for credit institutions and investment firms” (Capital Requirements Regulation or “CRR”) and the “Directive (EU) 2013/36 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms” (Capital Requirements Directive or “CRD”) which have been further amended with subsequent Regulations and Directives. Germany implemented the CRD disclosure requirements into national law in Section 26a of the German Banking Act (“Kreditwesengesetz” or “KWG”). Further disclosure guidance has been provided by the European Banking Authority (“EBA”) in its “Final Report on the Guidelines on Disclosure Requirements under Part Eight of Regulation (EU) No 575/2013” (“EBA Guideline”, EBA/GL/2016/11, version 2*). The information provided in this Pillar 3 Report is unaudited.

Due to rounding, numbers presented throughout this document may not add up precisely to the totals we provide and percentages may not precisely reflect the absolute figures.

Basel 3 and CRR/CRD

In the European Union, the Basel 3 capital framework is implemented by the amended versions of CRR and CRD. As a single rulebook the CRR is directly applicable to credit institutions and investment firms in the European Union and provides the grounds for the determination of regulatory capital requirements, regulatory own funds, leverage and liquidity as well as other relevant requirements. In addition, the CRD was implemented into German law by means of further amendments to the KWG and the German Solvency Regulation (SolvV) and accompanying regulations. Jointly, these laws and regulations represent the regulatory framework applicable in Germany.

Regarding the regulatory minimum capital requirements the CRR/CRD lays the foundation for the calculation of risk weighted assets (RWA) for credit risk, including counterparty credit risk, credit valuation adjustments, market risk and operational risk.

In January 2019, Regulations (EU) 2017/2401 and 2017/2402 introduced changes to the methodology for determining RWAs for new securitizations originated on or after January 1, 2019. All securitization transactions originated before this date remained subject to the rules introduced by CRR/CRD as applicable until December 31, 2018 and are subject to the new framework from January 1, 2020 onwards.

In May 2019, Regulation (EU) 2019/876 and Directive (EU) 2019/878 introduced amendments to the CRR/CRD with various changes to the credit risk RWA framework becoming applicable in June 2021. These legal acts relate. for example to the applicable risk weights for banking book investments in collective investment undertakings or the replacement of the mark-to-market method to determine the exposure value for derivatives that are not in scope of the internal model method by a new standardized approach to determine counterparty credit risk (SA-CCR).

As a reaction to the COVID-19 outbreak, certain legislative changes to the prudential framework have been made and are applicable since the second quarter reporting. Regulation (EU) 2020/866 increases the diversification benefit applicable to aggregate additional value adjustments from 50 % to 66 % until year end 2020. Regulation (EU) 2020/873 introduces various changes to the determination of risk weighted assets and the leverage exposure. For example the risk weights applicable to certain small or medium-sized enterprise (SME) are reduced by applying scaling factors depending on the exposure value. With respect to the leverage exposure, for example cash receivables and cash payables are offset where the related regular-way sales and purchases are both settled on a delivery-versus-payment basis. In addition certain Euro-based exposures facing Eurosystem central banks may be excluded from the leverage exposure subject to having obtained permission from the European Central Bank. Based on Decision (EU) 2020/1306 of the European Central Bank, the Group was allowed for the first time in the third quarter reporting to exclude these exposures from the leverage exposure. This exclusion currently applies until June 27, 2021.

A further core element of the CRR/CRD framework is the development and maintenance of a high quality capital base which should primarily consist of Common Equity Tier 1 (CET 1) capital. The CET 1 minimum capital requirement applicable to the Group is 4.5 % of risk-weighted assets. In addition to this minimum capital requirement, various capital buffer requirements were phased in starting 2016 and are fully effective from 2019 onwards. Since June 30, 2020, the Group applies the transitional arrangements in relation to IFRS 9 as provided in the current CRR/CRD for all CET1 measures.

Formerly intangible assets had to be deducted from CET1 items. “Regulation (EU) 2019/876” and “Regulation (EU) 2020/873” state that certain software assets do not have to be deducted from CET1 items from the entry into force of the related regulatory technical standards. The related regulatory technical standard, the “Regulation (EU) 241/2014” has been amended accordingly and entered into force on December 23, 2020. This amended regulatory technical standard therefore applies for the first time in our fourth quarter 2020 reporting. For such software assets the concept of a prudential amortization is introduced. The regulatory prudent value of these software assets is derived based on their initial IFRS carrying value and then amortized on a straight line basis down to zero. The maximum regulatory amortization period is three years, but if the IFRS amortization period is less (e.g. two years), then the regulatory amortization period will be the same. If the IFRS amortization period is longer than the prudential period, therefore resulting in the IFRS carrying value exceeding the regulatory prudent value, then the difference in value must be deducted from CET1 items. The regulatory prudent value no longer has to be deducted from CET1 items, it instead is subject to a 100% risk weight. The prudential amortization starts on the same date as when the IFRS amortization starts (i.e. when the software is ready for use). Whilst the software is in the development phase, the intangible asset capitalized under IFRS must be fully deducted from CET1 items. Once the software is ready for use, the value of the intangible asset that was fully deducted from CET 1 items is reinstated and amortized as described above.

We present in this report certain figures based on the CRR definition of own fund instruments on a “fully loaded” basis. We calculate such “fully loaded” figures excluding the transitional arrangements for own fund instruments as provided in the currently applicable CRR/CRD. For CET 1 instruments we do not make use of transitional provisions.

Transitional arrangements are applicable for Additional Tier 1 (AT1) and Tier 2 (T2) instruments. Capital instruments issued on or prior to December 31, 2011, that no longer qualify as AT1 or T2 instruments under the fully loaded CRR/CRD as currently applicable are subject to grandfathering rules during the transitional period and are being phased out from 2013 to 2022 with their recognition capped at 30 % in 2019, 20 % in 2020 and 10 % in 2021 (in relation to the portfolio eligible for grandfathering which was still in issue on December 31, 2012). The current CRR as applicable since June 27, 2019, provides further grandfathering rules for AT1 and T2 instruments issued prior to June 27, 2019. Thereunder, AT1 and T2 instruments issued through special purpose entities are grandfathered until December 31, 2021, and AT1 and T2 instruments that do not meet certain new requirements that apply since June 27, 2019 are grandfathered until June 26, 2025. Instruments issued under UK law which do not fulfill all CRR requirements after the UK has left the European Union are also excluded from our fully loaded definition. Our CET 1 and RWA figures show no difference between CRR/CRD as currently applicable and fully loaded CRR/CRD based on our definition of “fully loaded”.

For the comparative numbers as per year end 2019 we still applied our earlier concept of fully loaded, defined as excluding the transitional arrangements for own funds instruments introduced by the CRR/CRD applicable until June 26, 2019, but reflecting the transitional arrangements introduced by the amendments to the CRR/CRD applicable from June 27, 2019, and further amendments thereafter.

The CRR/CRD requires banks to calculate and disclose a regulatory leverage ratio that is generally based on the accounting value as the relevant exposure measure for assets. Specific regulatory exposure measures apply to derivatives and securities financing transactions as well as off-balance sheet exposures and must be added to determine the total leverage exposure. With effect from June 2021 the leverage exposure measure will be modified, e.g. the exposure measure for derivatives is determined based on a new standardized approach for counterparty credit risk and a minimum leverage ratio requirement of 3 % is introduced. From January 1, 2023 an additional leverage ratio buffer requirement of 50 % of the applicable G-SIB buffer rate will apply. It is currently expected that this additional requirement will equal 0.75 %.

The CRR/CRD framework further defines liquidity standards. The Liquidity Coverage Ratio (LCR) aims to measure a bank’s short-term resilience to a severe liquidity stress scenario during a stress period of 30 calendar days. Detailed rules for the calculation of the LCR are set out in the Commission Delegated Regulation 2015/61. The binding minimum liquidity coverage ratio is set to 100 % since 2018.

The Net Stable Funding Ratio (NSFR) requires banks to maintain a stable funding profile in relation to their on- and off-balance sheet exposures. The CRR/CRD requires banks to calculate and disclose certain items requiring and providing stable funding. With effect from June 2021 a minimum Net Stable Funding Ratio of 100 % will be introduced.

There are continuous improvements and additional regulatory guidance provided with regard to the interpretations of the CRR/CRD rules and related binding Technical Standards are still in preparation or not yet available in their final version. Thus, we will continue to refine our assumptions and models in line with evolution of our as well as the industry’s understanding and interpretation of the rules. Against this background, current CRR/CRD measures may not be comparable to previous expectations. Also, our CRR/CRD measures may not be comparable with similarly labeled measures used by our competitors as our competitors’ assumptions and estimates regarding such implementation may differ from ours.

TLAC and European MREL (SRMR/BRRD)

Global Systemically Important Institutions (G-SIIs) in Europe need to have at least 16 % plus the combined buffer requirement of their Risk Weighted Assets (RWA) or 3 % of their Leverage Ratio Exposure (LRE) as Total Loss Absorbing Capacity (TLAC). The requirement will increase to 18 % plus the combined buffer requirement of RWA or 3.75 % of LRE starting 2022.

Banks in the European Union are also required to meet at all times a minimum requirement for own funds and eligible liabilities ("MREL") which ensures that banks have sufficient loss absorbing capacity in resolution to avoid recourse to taxpayers' money. Relevant laws are the Single Resolution Mechanism Regulation ("SRMR") and the Bank Recovery and Resolution Directive ("BRRD") as implemented through the German Recovery and Resolution Act (Sanierungs- und Abwicklungsgesetz, "SAG").

MREL is determined by the competent resolution authorities for each supervised bank individually on a case-by-case basis, depending on the respective preferred resolution strategy. In the case of Deutsche Bank AG, MREL is determined by the Single Resolution Board ("SRB"). While there is no statutory minimum level of MREL, the SRM Regulation, BRRD and a delegated regulation set out criteria which the resolution authority must consider when determining the relevant required level of MREL. Guidance is provided through an MREL policy published annually by the SRB. Any binding MREL ratio determined by the SRB is communicated to Deutsche Bank via the German Federal Financial Supervisory Authority (BaFin).

As announced by the SRB the next update of Deutsche Bank AG's binding MREL and subordinated MREL requirement is expected in the first half of 2021 and will for the first time reflect the legal changes of the banking reform package via amendments to the Single Resolution Mechanism Regulation and the Bank Recovery and Resolution Directive provided in June 2019 with the publication of Regulation (EU) 2019/877 and Directive (EU) 2019/879. As a result the MREL and subordinated MREL requirement will no longer be expressed as a percentage of TLOF but as a percentage of Risk Weighted Assets (RWA) and Leverage Ratio Exposure (LRE).

Instruments which qualify for TLAC and MREL are own funds (Common Equity Tier 1, Additional Tier 1 and Tier 2) as well as certain eligible liabilities (mainly plain-vanilla unsecured bonds). Instruments qualifying for TLAC need to be fully subordinated to general creditor claims (e.g. senior non-preferred bonds) while this is not required for MREL (e.g. senior preferred bonds). Nevertheless, current and future MREL regulation allows the SRB to also set an additional "subordination" requirement within MREL (but separate from TLAC) against which only subordinated liabilities and own funds can be counted.

ICAAP, ILAAP and SREP

The Internal Capital Adequacy Assessment Process ("ICAAP") as stipulated in Pillar 2 of Basel 3 requires banks to identify and assess risks, maintain sufficient capital to face these risks and apply appropriate risk management techniques to maintain adequate capitalization. Our Internal Liquidity Adequacy Assessment Process ("ILAAP") aims to ensure that sufficient levels of liquidity are maintained on an ongoing basis by identifying the key liquidity and funding risks to which the Group is exposed, by monitoring and measuring these risks, and by maintaining tools and resources to manage and mitigate these risks.

In accordance with Article 97 CRD supervisors regularly review, as part of the Supervisory Review and Evaluation Process ("SREP"), the arrangements, strategies, processes and mechanisms implemented by banks and evaluate: (a) risks to which the institution is or might be exposed; (b) risks the institution poses to the financial system; and (c) risks revealed by stress testing.

Prudential measures for non-performing exposure

In April 2019 the EU published final regulations for a prudential backstop reserve for non-performing exposure (NPE), which will result in a Pillar 1 deduction from CET 1 capital when a minimum loss coverage requirement is not met. It is applied to exposures originated and defaulted after 26 April 2019.

In addition, in March 2018 the ECB published its "Addendum to the ECB Guidance to banks on non-performing loans: supervisory expectations for prudential provisioning of non-performing exposures" and in August 2019 its "Communication on supervisory coverage expectations for NPEs".

The ECB guidance issued is applicable to all newly defaulted loans after April 1, 2018 and, similar to the EU rules, it requires banks to take measures in case a minimum impairment coverage requirement is not met. Within the annual SREP discussions ECB may impose Pillar 2 measures on banks in case ECB is not confident with measure taken by the individual bank.

For the year end 2020, we introduced a framework to determine the prudential provisioning of non-performing exposure as a Pillar 2 measure as requested in the before mentioned ECB's guidance and SREP recommendation.

Measures in context of COVID-19 pandemic

Application of EBA guidance regarding Default, Forbearance and IFRS 9 in light of COVID-19 measures

EBA's "Statement on the application of the prudential framework regarding Default, Forbearance and IFRS 9 in light of COVID-19 measures" published on March 25, 2020 states that institutions are expected to use a degree of judgment and distinguish between borrowers whose credit standing would not be significantly affected by the current situation in the long term, and those who would be unlikely to restore their creditworthiness. The Bank performed portfolio reviews and applied this regulatory guidance to a number of clients mainly in the Investment Bank and Corporate Bank.

EBA is further of the view that the public and private moratoria, as a response to COVID-19 pandemic, do not have to be automatically classified as forbearance if the moratoria are not borrower specific, based on the applicable national law or on an industry or sector-wide private initiative agreed and applied broadly by relevant credit institutions. Deutsche Bank has introduced this guidance into its internal risk management processes.

For further details with regards to Deutsche Bank's determination of Expected Credit Losses following IFRS 9 accounting rules please refer to Deutsche Bank's Annual Report as of December 31, 2020.

Legislative and non-legislative moratoria and public guarantee schemes in light of COVID-19 pandemic

After the breakout of the COVID-19 pandemic, a number of governments issued programs offering legislative moratoria and guarantee schemes. Non-legislative moratoria programs have been developed to support our clients as well as individual measures have been agreed with our clients.

On April 2, 2020 and June 25, 2020 EBA published its guidelines on legislative and non-legislative moratoria on loan repayments applied in light of the COVID-19 pandemic. These guidelines provide clarity on the treatment of legislative and non-legislative moratoria applied before September 30, 2020 and supplement the EBA guidelines on the application of the definition of default in regards to the treatment of a distressed restructuring. On September 21, 2020, EBA announced that it "will phase out its guidelines on legislative and non-legislative payment moratoria in accordance with its end of September deadline. The regulatory treatment set out in the Guidelines will continue to apply to all payment holidays granted under eligible payment moratoria prior to September 30, 2020".

On December 2, 2020 after closely monitoring the developments of the COVID-19 pandemic and, in particular, the impact of the second COVID-19 wave and the related government restrictions taken in many EU countries, the EBA has decided to reactivate its guidelines on legislative and non-legislative moratoria.

General requirements for disclosures

Article 431 (1) CRR - Pillar 3 disclosure concept

We provide our Pillar 3 disclosures in line with the disclosure requirements as laid down in Part Eight of the "Regulation (EU) No 575/2013 on prudential requirements for credit institutions and investment firms" (CRR), including recent amendments. The European Banking Authority ("EBA") provided additional disclosure guidance based on its "Final Report on the Guidelines on Disclosure Requirements under Part Eight of Regulation (EU) No 575/2013" ("EBA Guideline", EBA/GL/2016/11, version 2*).

This report provides the respective Pillar 3 disclosures to the extent that these Pillar 3 disclosures are not included in the Deutsche Bank Annual Report 2020. Where Pillar 3 disclosure elements are located in the Annual Report of Deutsche Bank, they are generally referenced from the Pillar 3 Report to the Annual Report accordingly. Further down in this Report we provide an overview of the references into the Deutsche Bank Annual Report 2020.

The content flow of Deutsche Bank Group's Pillar 3 Report has been organized to allow for an easy identification of the respective disclosure elements against its specific Pillar 3 disclosure requirements. Within the broad risk sections "credit risk", "counterparty credit risk", "market risk", "operational risk", "liquidity risk" and "remuneration" we designed the Pillar 3 Report to follow in principle the order of the CRR-Articles in Part Eight (relevant numberings are reflected in the headings of the sections). In some instances within these sections we follow the structure as provided by the EBA Guideline where it helps to present specific topics even more comprehensively at one place. The quantitative Pillar 3 requirements are presented under the relevant EBA template with respective references (e.g., EU OV1, EU CR6), also including the EBA column or row labeling. In instances where additional lines or columns have been added to certain templates for better disclosure presentation a new numbering was introduced as specified in the EBA Guideline. Please note that we may still also use our own naming conventions within the EBA templates for the description of rows and columns which allows us to stay aligned and consistent in our disclosure presentation over time. We principally make use of the transitional arrangements provided in the EBA Guideline in section 4.1, No. 20 in relation to comparative information for prior periods, where these can be omitted in case of a first year of adoption of a disclosure element.

In 2012 the Enhanced Disclosure Task Force ("EDTF") was established as a private sector initiative under the auspice of the Financial Stability Board, with the primary objective to develop fundamental principles for enhanced risk disclosures and to recommend improvements to existing risk disclosures. As a member of the EDTF we adhered to the disclosure recommendations in this Pillar 3 Report to the extent applicable.

Article 431 (2) CRR - Information on operational risk methodologies

Deutsche Bank uses the Advanced Measurement Approach (AMA) to measure Operational Risk as outlined in section "Article 446 CRR - Operational risk measurement" in this report on page 163.

Article 431 (3) CRR - Disclosure policy

For purposes of Article 431 CRR, we have adopted a formal Risk Disclosure Policy to ensure that our risk disclosures are in compliance with applicable legal, regulatory and accounting risk disclosure standards and are compiled based upon a set of internally defined principles and related processes. The Risk Disclosure Policy defines overall roles and responsibilities, sets up the disclosure preparation process and establishes the verification and sign off procedures. Principally, senior representatives and subject matter experts from Finance and Risk assume responsibility for our risk disclosures and govern our respective risk disclosure processes. Based upon our assessment and verification we believe that our risk disclosures presented throughout this Pillar 3 Report in conjunction with the Annual Report 2020 appropriately and comprehensively convey our overall risk profile.

Article 431 (4) CRR - Explanation of rating decisions

Deutsche Bank Group provides explanations of rating decisions to small and medium entities and other corporates whose loan applications were declined.

Article 432 CRR - Non-material, proprietary or confidential information

In line with the Group's internal Risk Disclosure Policy a dedicated process has to be followed in case the Group considers to omit certain disclosures due to these disclosures being immaterial, proprietary or confidential. In the rare cases where the Group classifies information as non-material in this report this has been stated accordingly in the related disclosures.

Article 433 CRR - Frequency of disclosure

In line with the internal Risk Disclosure Policy the Group regularly assesses the need to disclose some or all information required by Titles II and III in Part Eight of Regulation (EU) No 575/2013 more frequently than annually. In accordance with Article 433 CRR the Group bases its assessment mainly on the relevant characteristics of its business such as scale of operations, range of activities, presence in different countries, involvement in different financial sectors, activity in international financial markets and considers participation in payment, settlement and clearing systems. In this regard, special attention is paid to information on capital, capital requirements, risk and other elements that can change rapidly and therefore lead to a more frequent disclosure need.

There is a formal process set up for the identification of the need for higher than annual frequency of all Pillar 3 disclosures which is compatible with the size, the scope and the range of activities of the Group. It also considers external factors like market developments or investors' and analysts' expectations as well as internal aspects like expert judgments from areas affected, process of disclosure implementation and quality assurance in the preparation with the overall aim to deliver appropriate disclosures which provide a timely, complete and accurate view of the Group's risk profile and risk position.

Subsequently, the Group concludes which parts of the information required under Part 8 CRR are to be disclosed more frequently than once a year. In this regard the Group principally follows the recommendations regarding frequency of disclosures as prejudiced in the CRR and the EBA Guidelines on disclosure requirements under Part Eight of Regulation (EU) No 575/2013 as of December 14, 2016, for those items specified in there, but also reaches respective conclusions for all remaining disclosure items.

The internal Risk Disclosure Policy also states that Pillar 3 disclosures have to be published principally in conjunction with the date of publication of the financial statements unless specified and agreed differently e.g. publication of standalone Pillar 3 Report for significant subsidiaries according to Article 13 CRR.

Article 434 CRR - Means of disclosure

This Pillar 3 Report is published on the bank's website at db.com/ir/en/regulatory-reporting.htm

This report has been organized to principally follow the structure as defined by the EBA guideline ("Final Report on the Guidelines on Disclosure Requirements under Part Eight of Regulation (EU) No 575/2013" EBA/GL/2016/11, version 2*, from December 14, 2016) and underlying Capital Requirement Regulation (CRR) related articles.

This report provides the Basel III Pillar 3 disclosures to the extent that these required Pillar 3 disclosures are not included in the Deutsche Bank Annual Report 2020. Where Pillar 3 disclosure elements are located in the Annual Report of Deutsche Bank, they are generally referenced from the Pillar 3 Report to the Annual Report accordingly. The following table provides an overview of the references into the Deutsche Bank Annual Report 2020.

Main Pillar 3 disclosures in our Annual Report

Pillar 3 disclosure topic with reference to CRR-Article	Primary location in our Annual Report
Risk management objectives and policies (Article 435)	Report of the supervisory board, Strategy, Deutsche Bank Group, Risks and opportunities Key risk metrics, Overall risk assessment, Risk profile, Risk and capital framework, Risk management principles, Risk governance, Risk appetite and capacity, Strategic and capital plan, Risk measurement and reporting systems, Capital management, Resource limit setting, Risk identification and assessment, Credit risk management and asset quality, Market risk management, Operational risk management, Liquidity risk management, Business (strategic) risk management, Model risk management, Reputational risk management, Risk concentration and risk diversification, Capital, Leverage Ratio, TLAC and MREL, Credit risk exposure, Asset quality, Trading market risk exposures, Nontrading market risk exposures, Operational risk exposure, Liquidity risk exposure Responsibility statement by the management board, Management board, Supervisory board, Compliance with the German corporate governance code, Targets for the proportion of women in management positions/gender quota, Diversity concept
Scope of application of the regulatory framework (Article 436)	Introduction, Shareholdings
Own funds (Article 437)	Own funds, Capital instruments, Minimum capital requirements and additional capital buffers, Development of own funds
Capital requirements (Article 438)	Key risk metrics, Risk profile, Risk appetite and capacity, Risk and capital plan, Stress testing, Risk identification and assessment, Capital, Leverage Ratio, TLAC and MREL
Counterparty credit risk (Article 439)	Credit Risk Management and asset quality, Credit risk exposure, Asset quality, Liquidity risk exposure
Capital buffers (Article 440)	Capital, Leverage Ratio and MREL
Indicators of global systemic importance (Article 441)	Disclosed on our webpage
Credit risk (Article 442)	Asset quality, Note 1 - Significant accounting policies and critical accounting estimates, Note 13 - Financial instruments carried at fair value, Note 14 - Fair value of financial instruments not carried at fair value, Note 19 - Allowance for credit losses
Unencumbered assets (Article 443)	Liquidity risk exposure, Note 20 - Transfer of financial assets, assets pledged and received as collateral, Note 37 - Information on subsidiaries
Exposure to market risk (Article 445)	Capital, Leverage Ratio, TLAC and MREL, Trading market risk exposures
Operational risk (Article 446)	Operational risk management, Operational risk exposure, Capital, Leverage Ratio and MREL, Note 27 – Provisions
Exposures in equities not included in the trading book (Article 447)	Market risk management, Credit risk exposure, Note 1 - Significant accounting policies and critical accounting estimates, Note 13 - Financial instruments carried at fair value, Note 16 - Equity method investments, Note 44 - Shareholdings
Exposure to interest rate risk on positions not included in the trading book (Article 448)	Nontrading market risk, Nontrading market risk exposures
Securitization (Article 449)	Credit risk management and asset quality, Market risk management, Note 1 - Significant accounting policies and critical accounting estimates, Note 13 - Financial instruments carried at fair value
Remuneration policy (Article 450)	Compensation report
Leverage (Article 451)	Risk management principles, Risk governance, Capital management, Leverage ratio
Use of the IRB approach to credit risk (Article 452)	Credit risk management and asset quality, Credit risk exposure
Use of credit risk mitigation techniques (Article 453)	Credit risk management and asset quality, Credit risk exposure
Use of the advanced measurement approaches to operational risk (Article 454)	Operational risk management, Operational risk exposure
Use of internal market risk models (Article 455)	Market risk management, Trading market risk exposures, Note 13 - Financial instruments carried at fair value
Liquidity	Liquidity risk management, Liquidity risk exposure
Business risk	Business (strategic) risk management
Disclosure requirements according to Article 26a German Banking Act (KWG)	Note 39 – Current and non-current assets and liabilities Note 40 – Events after the reporting period Note 42 – Supplementary Information to the consolidated financial statements according to sections 297 (1a) / 315a HGB and the return on assets according to Article 26a of the German Banking Act

Risk management objectives and policies

Article 435 (1)(a) CRR - Risk management strategies and processes

Deutsche Bank Group discloses the risk management strategies and process in the Annual Report 2020 under sections “Risk management principles” on page 58 and “Risk governance” on page 59.

Credit risk management strategies and processes

The management of credit risk is described in section “Credit risk management and asset quality” on page 69 in the 2020 Annual Report.

Market risk management strategies and processes

The management of market risk is described in section “Market risk management” on page 93 in the 2020 Annual Report.

Liquidity risk management strategies and processes

The management of liquidity is described in section “Liquidity risk management” on page 104 in the 2020 Annual Report.

Business risk management strategies and processes

The management of business risk is described in sections “Risk identification and assessment” and “Business (strategic) risk management” on pages 69 and 108 respectively in the 2020 Annual Report.

Operational risk management strategies and processes

The management of operational risk is described in section “Operational risk management” on page 99 in the 2020 Annual Report.

Reputational Risk Management strategies and processes

The management of reputational risk is described in section “Reputational risk management” on page 109 of the 2020 Annual Report.

Article 435 (1)(b) CRR - Risk management structure and organization

Deutsche Bank discloses the overall risk management structure and organization in the 2020 Annual Report, chapter “Risk and capital framework”, section “Risk governance” on page 59.

More detailed descriptions are provided in the following specific chapters.

Credit risk management structure and organization

The structure and organization of credit risk management is described in section “Credit risk management and asset quality” on pages 69 in the 2020 Annual Report.

Market risk management structure and organization

The structure and organization of market risk management is described in section “Market risk management”, in the 2020 Annual Report, specifically in the chapter “Market risk framework” on page 93, “Trading market risk” on page 94 and “Nontrading market risk” on page 97.

Liquidity risk management structure and organization

The structure and organization of liquidity risk management is described in section “Liquidity risk management”, in the 2020 Annual Report, specifically in the chapter “Liquidity risk management framework” on page 104, “Capital markets issuance” on page 106 and “Short term liquidity and wholesale funding” on page 105.

Business risk management structure and organization

The management of business risk is described in the section “Business (strategic) risk management” on page 108 in the 2020 Annual Report.

Operational risk management structure and organization

The structure and organization of operational risk management is described in section “Operational risk management” on page 99 in the 2020 Annual Report.

Reputational Risk Management structure and organization

The structure and organization of Reputational Risk Management is described in section “Reputational risk management” on page 109 in the 2020 Annual Report.

Article 435 (1)(c) CRR - Scope and nature of risk measurement and reporting systems

The nature of our risk measurement and reporting systems are described in the section “Risk measurement and reporting systems” on page 65 of the Annual Report 2020.

Scope and nature of credit risk measurement and reporting systems

The scope and nature of our credit risk measurement and reporting systems are described in the section “Risk measurement and reporting systems” on page 65 of the Annual Report 2020.

Scope and nature of market risk measurement and reporting systems

The scope and nature of our market risk measurement and reporting systems are described in the section “Risk measurement and reporting systems” on page 65 of the Annual Report 2020.

Scope and nature of liquidity risk measurement and reporting systems

The scope and nature of our liquidity risk measurement and reporting systems are described in the section “Risk measurement and reporting systems” on page 65 and in the section “Liquidity risk management” on page 104 and onwards of the Annual Report 2020.

Scope and nature of business risk measurement and reporting systems

Please refer to the section “Capital requirements”, chapter “Business risk economic capital model” on page 39 of this Pillar 3 report.

Scope and nature of operational risk measurement and reporting systems

The risk reporting and measurement methodology are described in section “Operational risk management” on page 99 in the 2020 Annual Report.

Scope and nature of reputational risk measurement and reporting systems

The scope and nature of our reputational risk measurement and reporting systems are described in the section “Risk measurement and reporting systems” on page 109 of the Annual Report 2020.

Article 435 (1)(d) CRR - Policies for hedging and mitigating risk

Policies for hedging and mitigating credit risk

The section "Managing and mitigation of credit risk" on page 88 in the Annual Report 2020 provides information on how our credit risk is hedged/mitigated on both counterparty and portfolio levels and exposures are disclosed in section “Corporate Bank and Investment Bank credit exposure” and “SCL Risk Mitigation for Credit Exposure” on pages 141 to 143 in the same report.

Policies for hedging and mitigating market risk

The approach to hedging and managing market risk is governed by policies explicitly designed to ensure that all hedging activities are risk reducing, not proprietary in nature and are documented prior to trade execution. Hedging activities are reviewed by the relevant business control forum. For a further description of the hedging approach for specific areas in the banking book, please refer to the section “Nontrading market risk” of the 2020 Annual Report on page 97.

Policies for hedging and mitigating liquidity risk

The policies for mitigating risk, and the strategies and processes for monitoring the continuing effectiveness of mitigants regarding liquidity risk are described in the section “Liquidity risk management” on page 104 and onwards of the Annual Report 2020.

Policies for hedging and mitigating operational risk

The risk mitigating processes regarding operational risk are described in section “Operational risk management” on page 99 in the 2020 Annual Report. The hedging of operational risk is described in “Article 454 CRR - Use of the Advanced Measurement Approaches to operational risk” on page 166 in this report.

Article 435 (1)(e) CRR - Declaration on the adequacy of risk management arrangements

Our Management Board confirms, for the purpose of Article 435 CRR, that our risk management arrangements are adequate with regard to our risk profile and strategy, and maintains appropriate staffing and resources to implement enhancements to the risk management system.

Article 435 (1)(f) CRR - Concise risk statement approved by the board

All individual information aspects of the article are addressed in the Annual Report 2020, e.g. in the following combined set of sections, and regarded as concise statement.

Article 435 (1)(f) CRR requirements	Reference sections from Deutsche Bank's Annual Report 2020
Risk profile	Overall risk assessment (page 55) Risk profile (page 56)
Business strategy	Strategy (page XVIII) Risks and opportunities (page 41) Strategic and capital plan (page 62)
Management of risk	Risk management principles (page 58) Risk governance (page 59) Risk measurement and reporting systems (page 65) Capital management (page 68) Resource limit setting (page 68) Risk identification and assessment (page 69) Credit risk management and asset quality(page 69) Market risk management (page 93) Operational risk management (page 99) Liquidity risk management (page 104) Business (strategic) risk management (page 108) Reputational risk management (page 109) Model risk management (page 108) Risk concentration and risk diversification (page 110)
Risk tolerances	Risk appetite and capacity (page 62)
Key ratios and figures	Risk profile (page 56) Key risk metrics (page 54) Own Funds (page 111) Economic capital (page 121) Leverage ratio (page 122) Credit risk exposure (page 127) Asset quality (page 79) Trading market risk exposures (page 149) Nontrading market risk exposures (page 152) Operational risk exposure (page 154) Liquidity risk exposure (page 155)

On this basis our Management Board, by approving the Annual Report 2020, also approved the concise statement as required by Article 435 (1)(f) CRR.

Article 435 (2)(a) CRR - Number of directorships held by board members

The number of directorships held by members of the management board is published in the section "Management Board" from page 402 onwards in the Annual Report 2020.

Article 435 (2)(b) CRR - Recruitment policy for board members

Please refer to the section "Standing Committees" and the sub-section therein "Nomination Committee" on page 412 in our Annual Report 2020.

Article 435 (2)(c) CRR - Policy on diversity for board members

Please refer to the section "Diversity concept" and “Objectives for the composition of the Supervisory Board, Profile Requirements, diversity concept and status of implementation” on Deutsche Bank's approach and processes to support diversity, including diversity objectives, targets and achievements in relation to the management bodies in our Annual Report 2020 on page 423.

Page 422 of the Annual Report 2020 refers in “Targets for the proportion of women in management positions/gender quota” to Deutsche Bank’s approach to the proportion of women in Management Board. It also shows targets for the first and second level reporting to the Management Board.
The diversity concept for the Supervisory Board and its implementation are described in the section “Objectives for the composition of the Supervisory Board, Profile Requirements, diversity concept and status of implementation.

On page 402 of the Annual Report 2020, we provide information on duties and responsibilities and procedures of the Management Board including a reference to the respective Terms of Reference (ToR) link.

The Management Board ToR §5 (9) states inter alia: "In appointing people to management functions in the Group, the Management Board takes diversity into account and strives, in particular, to achieve an appropriate representation of women".

The Annual Report 2020 provides on pages 407 similar information for the Supervisory Board with specific information.

Article 435 (2)(d-e) CRR - Risk committee and information flow

Dedicated risk committees are in place both to support the Supervisory Board (the Risk Committee of the Supervisory Board) as well as the Management Board (the Group Risk Committee, “GRC”).

Please refer to our Annual Report 2020, page 414, chapter “Report of the Supervisory Board”, section “The committees of the Supervisory Board”, paragraph “Risk committee” for the number of meetings the Risk Committee of the Supervisory Board held in 2020.

The Group Risk Committee generally has held meetings once a week in 2020.

Please refer to our Annual Report 2020, page 65, chapter “Risk and capital framework”, section “Risk measurement and reporting systems” for a description of the information flow.

Scope of application of the regulatory framework

Article 436 (a) CRR - Name of the institution

Deutsche Bank Aktiengesellschaft (“Deutsche Bank AG”), headquartered in Frankfurt am Main, Germany, is the parent institution of the Deutsche Bank Group (the “regulatory group”). Deutsche Bank Group is subject to the CRR. Under Section 10a KWG in conjunction with Articles 11 and 18 CRR, a regulatory group of institutions consists of an institution (meaning a credit institution or an investment firm) as the parent company, and all other institutions, financial institutions (comprising inter alia financial holding companies, payment institutions, asset management companies) and ancillary services undertakings that are its subsidiaries within the meaning of Article 4 (1) (16) CRR, or are jointly managed together with other parties within the meaning of Article 18 (4) CRR. Subsidiaries are fully consolidated, while companies which are not subsidiaries but consolidated according to Art. 18 (4) CRR are subject to proportional consolidation.

Insurance companies and companies outside the banking and financial sector are not consolidated in the regulatory group. We do not qualify as a financial conglomerate and are not subject to the respective supplementary supervisions.

Article 436 (b) CRR - Difference in basis of consolidation for accounting and prudential purposes

The principles of consolidation for our regulatory group are not identical to those applied for our financial statements. Nonetheless, the majority of our subsidiaries in the regulatory group are also fully consolidated in accordance with IFRS in our consolidated financial statements.

The main differences between regulatory and accounting consolidation are:

- Subsidiaries outside the banking and financial sector are not consolidated within the regulatory group of institutions, but are included in the consolidated financial statements according to IFRS.
- Most of our Special Purpose Entities (“SPEs”) consolidated under IFRS do not meet the regulatory subsidiary definition pursuant to Article 4 (1) (16) CRR and were consequently not consolidated within our regulatory group. However, the risks resulting from our exposures to such entities are reflected in the regulatory capital requirements.
- Only a few entities included in the regulatory group are not consolidated as subsidiaries for accounting purposes but are treated differently: four, mostly immaterial subsidiaries which were not consolidated for accounting purposes were consolidated within the regulatory group; one further entity was jointly managed by us and other owners and was consolidated on a pro-rata basis within the regulatory group while for financial accounting purposes it was treated as an fair value through profit or loss asset.

As of year-end 2020, our regulatory group comprised 362 entities (excluding the parent Deutsche Bank Aktiengesellschaft), of which one was consolidated on a pro-rata basis. The classification applied for these entities is in accordance with CRR. The regulatory group comprised 22 credit institutions, 2 payment institutions, 29 investment firms, 201 financial institutions, 16 financial holding companies, 11 asset management companies and 81 ancillary services undertakings. As of year-end 2019, our regulatory group comprised 422 entities (excluding the parent Deutsche Bank Aktiengesellschaft), of which one was consolidated on a pro-rata basis. The regulatory group comprised 26 credit institutions, 2 payment institution, 31 investment firms, 228 financial institutions, 17 financial holding companies, 12 asset management companies and 106 ancillary services undertakings.

45 entities were exempted from regulatory consolidation pursuant to Section 31 (3) KWG in conjunction with Article 19 CRR as per year end 2020 (year end 2019: 49 entities). These regulations allow the exclusion of small entities in the regulatory scope of application from consolidated regulatory reporting if either their total assets (including off-balance sheet items) are below € 10 million or below 1 % of our Group’s total assets. Also these entities were not required to be consolidated in our financial statements in accordance with IFRS.

These regulatory unconsolidated entities have to be included in the deduction treatment for significant investments in financial sector entities pursuant to Article 36 (1) (i) CRR in conjunction with Article 43 (c) CRR. The book values of our participations in their equity included in the deduction treatment amounted to in total € 3 million as per year end 2020 (year end 2019: € 3 million). We further have applied the deduction treatment to 189 regulatory unconsolidated entities in the financial sector (including two insurance entities) where we have an investment of more than 10 % of the capital of these entities as per year end 2020 (year end 2019: 196 entities). Pursuant to Article 36 (1) (i) CRR and in conjunction with Article 48 CRR, investments in the capital of financial sector entities have to be deducted from CET 1 capital if they exceed in sum 10 % of the institution's own CET 1 capital or if they exceed in aggregate with deferred tax assets that rely on future profitability and arise from temporary differences 15 % of the relevant CET 1 capital.

The table EU LI1 below provides an outline of the difference in the basis of consolidation for accounting and prudential purposes and also breaks down how the amounts reported in our financial statements, once the regulatory scope of consolidation is applied, are to be allocated to the different risk frameworks laid out in Part Three of the CRR. Consequently we split our regulatory balance sheet into the parts subject to credit risk, counterparty credit risk, securitization positions in the regulatory banking book, market risk as well as the part which is not subject to capital requirements or relevant for deduction from capital. The market risk framework in column (f) includes our trading book exposure, our banking book exposure which is booked in a currency different from Euro as well as securitization positions in the regulatory trading book. Specific assets and liabilities may be subject to more than one regulatory risk framework, therefore the sum of values in column (c) to (g) may not equal to that in column (b). Moreover the allocation of positions to the regulatory trading or banking book as well as the product definition impacts the allocation to and treatment within a regulatory framework and might be different to the product definition or trading classification under the accounting framework.

Differences between carrying values on the regulatory balance sheet in column (b) and amounts deducted from CRR/CRD capital are explained further in the footnotes of the "Own funds template (incl. RWA and Capital Ratios)" as referenced in the last column of this table.

EU LI1 – Differences between accounting and regulatory scopes of consolidation and the mapping of financial statement categories with regulatory risk categories

								Dec 31, 2020
	a	b	c	d	e	f	g	
			Carrying values of items:					
in € m.	Carrying values as reported in published financial statements	Carrying values under scope of regulatory consolidation	Subject to the credit risk framework	Subject to the counterparty credit risk framework	Subject to the securitization framework	Subject to the market risk framework	Not subject to capital requirements or subject to deduction from capital	References[1]
Assets:								
Cash and central bank balances	166,208	166,082	165,904	0	0	77,438	0	
Interbank balances (w/o central banks)	9,130	8,887	8,024	0	0	7,291	0	
Central bank funds sold and securities purchased under resale agreements	8,533	8,533	0	7,715	0	4,888	0	
Securities borrowed	0	0	0	0	0	0	0	
Financial assets at fair value through profit or loss								
Trading assets	107,929	106,659	6,225	1,661	341	101,915	0	
Positive market values from derivative financial instruments	343,455	343,757	38	343,452	26	342,346	0	
Non-trading financial assets mandatory at fair value through profit and loss	76,121	76,693	11,324	62,449	1,908	71,221	0	
Financial assets designated at fair value through profit or loss	437	437	437	0	0	437	0	
Total financial assets at fair value through profit or loss	527,941	527,546	18,023	407,561	2,274	515,918	0	
Financial assets at Fair Value through OCI								
Financial assets mandatory at fair value through OCI	55,834	55,681	54,102	1,543	36	26,713	0	
Equity Instruments designated at fair value through OCI	0	0	0	0	0	0	0	
Total financial assets at fair value through OCI	55,834	55,681	54,102	1,543	36	26,713	0	
Equity method investments	901	901	901	0	0	901	64	
of which: Goodwill	64	64	0	0	0	0	64	D
Loans at amortized cost	426,995	428,882	409,947	99	18,666	130,950	170	
Property and equipment	5,549	5,512	5,512	0	0	2,173	0	
Goodwill and other intangible assets	6,725	6,544	1,608	0	0	0	4,936	D
Other assets	110,399	110,236	21,691	74,724	2,734	47,238	10,758	
of which: Defined benefit pension fund assets	891	891	0	0	0	0	891	F
Assets for current tax	986	983	983	0	0	0	0	
Deferred tax assets	6,058	6,030	4,704[3]	0	0	2,240	1,325	E
Total assets	1,325,259	1,325,817	691,398[3]	491,643	23,710	815,750	17,253	
Liabilities and equity:								
Deposits	568,031	568,898	0	1,260	29	83,430	484,180	
Central bank funds purchased and securities sold under repurchase agreements	2,325	2,325	0	2,325	0	1,892	0	
Securities loaned	1,698	1,698	0	1,698	0	1,698	0	
Financial liabilities at fair value through profit or loss								
Trading liabilities	44,316	44,356	0	0	0	44,198	(86)	
Negative market values from derivative financial instruments	327,775	327,950	0	327,507	46	327,950	0	
Financial liabilities designated at fair value through profit or loss	46,583	46,346	0	44,359	0	45,901	30	
Investment contract liabilities	526	0	0	0	0	0	0	
Total financial liabilities at fair value through profit or loss	419,199	418,652	0	371,866	46	418,049	(57)	
Other short-term borrowings	3,553	3,493	0	0	0	281	3,212	
Other liabilities	114,208	113,026	0	76,269	0	28,413	20,900	
Provisions	2,430	2,406	0	0	0	386	2,020	
Liabilities for current tax	574	559	0	0	0	115	444	
Deferred tax liabilities	561	479	0	0	0	0	479	
Long-term debt	149,163	150,587	0	0	1	26,720	123,867	
of which: Subordinated long-term debt[2]	7,669	7,669	0	0	1	1,320	6,348	H.I
Trust preferred securities[2]	1,321	1,321	0	0	0	4	1,318	H.I
Obligation to purchase common shares	0	0	0	0	0	0	0	
Total liabilities	1,263,063	1,263,444	0	453,418	75	560,986	636,363	
Common shares, no par value, nominal value of € 2.56	5,291	5,291	0	0	0	0	5,291	A
Additional paid-in capital	40,606	40,606	0	0	0	0	40,606	A
Retained earnings	10,014	10,279	0	0	0	0	10,279	B
Common shares in treasury, at cost	(7)	(7)	0	0	0	0	(7)	A

								Dec 31, 2020
	a	b	c	d	e	f	g	
			Carrying values of items:					
in € m.	Carrying values as reported in published financial statements	Carrying values under scope of regulatory consoli-dation	Subject to the credit risk framework	Subject to the counterparty credit risk framework	Subject to the securi-tization framework	Subject to the market risk framework	Not subject to capital re-quirements or subject to deduction from capital	References[1]
Equity classified as obligation to purchase common shares	0	0	0	0	0	0	0	A
Accumulated other comprehensive income, net of tax	(1,118)	(1,118)	0	0	0	0	(1,118)	C
Total shareholders' equity	**54,786**	**55,050**	**0**	**0**	**0**	**0**	**55,050**	
Additional equity components	5,824	5,824	0	0	0	0	5,824	G
Noncontrolling interests	1,587	1,498	0	0	0	0	1,498	
Total equity	**62,196**	**62,372**	**0**	**0**	**0**	**0**	**62,372**	
Total liabilities and equity	**1,325,259**	**1,325,817**	**0**	**453,418**	**75**	**560,986**	**698,735**	

[1] References provide the mapping of regulatory balance sheet items used to calculate regulatory capital as reflected in the column "References" in "Own funds template (incl. RWA and Capital Ratios)". Where applicable, more detailed information are provided in the respective reference footnote section.
[2] Eligible Additional Tier 1 and Tier 2 instruments are reflected in these balance sheet positions with their values according to IFRS.
[3] Deferred Tax Assets and overall credit exposure not updated due to immateriality with reference to proposed shareholder dividend payment of zero as per the new EBA/ECB guidance for the full year 2020.

								Dec 31, 2019
	a	b	c	d	e	f	g	
			Carrying values of items:					
in € m.	Carrying values as reported in published financial statements	Carrying values under scope of regulatory consolidation	Subject to the credit risk framework	Subject to the counterparty credit risk framework	Subject to the securitization framework	Subject to the market risk framework	Not subject to capital requirements or subject to deduction from capital	References[1]
Assets:								
Cash and central bank balances	137,592	137,508	137,335	0	0	79,715	0	
Interbank balances (w/o central banks)	9,636	9,346	8,532	0	0	7,693	0	
Central bank funds sold and securities purchased under resale agreements	13,801	13,801	0	13,801	0	6,014	0	
Securities borrowed	428	428	0	428	0	328	0	
Financial assets at fair value through profit or loss								
Trading assets	110,875	109,375	6,617	0	275	107,063	0	
Positive market values from derivative financial instruments	332,931	333,253	67	333,127	36	331,692	0	
Non-trading financial assets mandatory at fair value through profit and loss	86,901	87,083	11,865	71,341	1,732	81,926	1,060	
Financial assets designated at fair value through profit or loss	7	7	7	0	0	7	0	
Total financial assets at fair value through profit or loss	530,713	529,718	18,556	404,468	2,043	520,687	1,060	
Financial assets at Fair Value through OCI								
Financial assets mandatory at fair value through OCI	45,503	45,351	43,901	1,415	34	28,494	0	
Equity Instruments designated at fair value through OCI	0	0	0	0	0	0	0	
Total financial assets at fair value through OCI	45,503	45,351	43,901	1,415	34	28,494	0	
Equity method investments	929	929	929	0	0	929	74	
of which: Goodwill	74	74	0	0	0	0	74	D
Loans at amortized cost	429,841	430,947	406,797	0	23,931	145,346	119	
Property and equipment	4,930	4,888	4,888	0	0	959	0	
Goodwill and other intangible assets	7,029	6,831	0	0	0	0	6,831	D
Other assets	110,359	110,301	33,282	56,955	3,216	47,392	9,457	
of which: Defined benefit pension fund assets	1,025	1,025	0	0	0	0	1,025	F
Assets for current tax	926	923	923	0	0	0	0	
Deferred tax assets	5,986	5,954	4,588	0	0	2,221	1,366	E
Total assets	1,297,674	1,296,924	659,733	477,067	29,223	839,778	18,906	
Liabilities and equity:								
Deposits	572,208	573,362	0	1,647	32	73,412	498,271	
Central bank funds purchased and securities sold under repurchase agreements	3,115	3,115	0	3,115	0	2,349	0	
Securities loaned	259	259	0	259	0	259	0	
Financial liabilities at fair value through profit or loss								
Trading liabilities	37,065	37,073	0	0	0	37,069	(79)	
Negative market values from derivative financial instruments	316,506	316,678	0	315,656	75	315,426	0	
Financial liabilities designated at fair value through profit or loss	50,332	49,978	0	46,938	0	49,726	22	
Investment contract liabilities	544	0	0	0	0	0	0	
Total financial liabilities at fair value through profit or loss	404,448	403,729	0	362,594	75	402,221	(57)	
Other short-term borrowings	5,218	5,283	0	0	0	641	4,642	
Other liabilities	107,964	106,511	0	78,865	0	30,163	21,092	
Provisions	2,622	2,618	0	0	0	390	2,228	
Liabilities for current tax	651	634	0	0	0	123	511	
Deferred tax liabilities	545	439	0	0	0	0	439	
Long-term debt	136,473	137,032	0	0	0	28,864	108,168	
of which: Subordinated long-term debt[2]	7,267	7,267	0	0	0	926	6,342	H.I
Trust preferred securities[2]	2,013	2,013	0	0	0	767	1,245	H.I
Obligation to purchase common shares	0	0	0	0	0	0	0	
Total liabilities	1,235,515	1,234,994	0	446,479	107	539,189	636,540	
Common shares, no par value, nominal value of € 2.56	5,291	5,291	0	0	0	0	5,291	A
Additional paid-in capital	40,505	40,493	0	0	0	0	40,493	A
Retained earnings	9,644	9,425	0	0	0	0	9,425	B
Common shares in treasury, at cost	(4)	(4)	0	0	0	0	0	A
Equity classified as obligation to purchase common shares	0	0	0	0	0	0	0	A

								Dec 31, 2019
	a	b	c	d	e	f	g	
			Carrying values of items:					
in € m.	Carrying values as reported in published financial statements	Carrying values under scope of regulatory consoli-dation	Subject to the credit risk framework	Subject to the counterparty credit risk framework	Subject to the securi-tization framework	Subject to the market risk framework	Not subject to capital re-quirements or subject to deduction from capital	References[1]
Accumulated other comprehensive income, net of tax	421	537	0	0	0	0	537	C
Total shareholders' equity	55,857	55,741	0	0	0	0	55,745	
Additional equity components	4,665	4,665	0	0	0	0	4,665	G
Noncontrolling interests	1,638	1,524	0	0	0	0	1,524	
Total equity	62,160	61,930	0	0	0	0	61,934	
Total liabilities and equity	1,297,674	1,296,924	0	446,479	107	539,189	698,474	

[1] References provide the mapping of regulatory balance sheet items used to calculate regulatory capital as reflected in the column “References” in “Own funds template (incl. RWA and Capital Ratios)”. Where applicable, more detailed information are provided in the respective reference footnote section.
[2] Eligible Additional Tier 1 and Tier 2 instruments are reflected in these balance sheet positions with their values according to IFRS.

Table EU LI2 presents a description of the differences between the financial statements’ carrying value amounts under the regulatory scope of consolidation and the exposure amounts used for regulatory purposes.

Movement in balances in carrying value as reported in published financial statements (a) and carrying values under scope of regulatory consolidation (b) comparing December 31, 2020 to December 31, 2019 are presented in our Annual Report 2020 in the Management Report, chapter “Operating and financial review – Financial position” on page 30 which provides a detailed explanation of the same.

EU LI2 – Main sources of differences between regulatory exposure amounts and carrying values in financial statements

						Dec 31, 2020
		a	b	c	d	e
			Items subject to:			
	in € m.	Total	Credit risk framework	Counterparty credit risk framework	Securitization framework	Market risk framework
1	Asset carrying value amount under the regulatory scope of consolidation (as per template EU LI1)	1,325,817	691,398	491,643	23,710	815,750
2	Liabilities carrying value amount under the regulatory scope of consolidation (as per template EU LI1)	1,263,444	0	453,418	75	560,986
3	Total net amount under the regulatory scope of consolidation	62,372	691,398	38,225	23,635	254,764[5]
4	Off-balance-sheet amounts	262,914	245,832	1,701	13,983	0
5a	Differences in valuations for derivatives and SFT (incl. impact from different netting rules)[1]	–	0	61,167	79	0
5b	Differences in valuations for securitization positions[2]	–	(24,209)	0	22,369	696
5c	Differences in valuations for off-balance sheet amounts	–	(151,353)	0	0	0
6	Differences due to financial collateral considered in standardized approach	–	(3,439)	(54)	0	0
7	Differences due to consideration of provisions[3]	–	7,953	0	0	0
8	Differences due to dilution risk	–	0	0	0	0
9	Other differences[4]	–	10,520	3,032	0	0
10	Exposure amounts considered for regulatory purposes	940,839	776,700	104,072	60,067	2,505[6]

[1] Includes effects due to differences in exposure modelling applying the effective expected positive exposure (EEPE) as well as the mark to market method for derivatives and financial collateral comprehensive method for SFT respectively; that also reflects differences as a result of the application of credit risk mitigation and regulatory netting rules.
[2] Included in the sum of € 22.4 billion are FX mismatches amounting to € 0.9 billion. The amount represents the retained synthetic tranches after consideration of bought credit protection.
[3] Includes credit-risk related purchase price adjustments arising in the context of asset purchases as well as business combinations.
[4] Primarily reflects valuation differences as a result of regulatory product definition being different from the accounting product definition; moreover under the counterparty credit risk framework funded default fund contribution in form of securities are considered in the exposure amounts for regulatory purposes.
[5] Included in the sum of € 254.8 billion are € 1.8 billion net carrying amount attributable to securitization positions in the regulatory trading book covered under the market risk standardized approach.
[6] Exposure at default is only considered for securitization positions in the regulatory trading book as the remaining exposure is considered within the internally developed market risk models.

						Dec 31, 2019
		a	b	c	d	e
			Items subject to:			
	in € m.	Total	Credit risk framework	Counterparty credit risk framework	Securitization framework	Market risk framework
1	Asset carrying value amount under the regulatory scope of consolidation (as per template EU LI1)	1,296,924	659,732	477,067	29,223	839,778
2	Liabilities carrying value amount under the regulatory scope of consolidation (as per template EU LI1)	1,234,994	0	446,479	107	539,189
3	Total net amount under the regulatory scope of consolidation	61,930	659,732	30,588	29,117	300,589[5]
4	Off-balance-sheet amounts	259,956	242,419	2,217	13,598	0
5a	Differences in valuations for derivatives and SFT (incl. impact from different netting rules)[1]	–	0	71,150	120	0
5b	Differences in valuations for securitization positions[2]	–	(18,994)	(2,348)	34,498	706
5c	Differences in valuations for off-balance sheet amounts	–	(142,944)	0	0	0
6	Differences due to financial collateral considered in standardized approach	–	(3,420)	(255)	0	0
7	Differences due to consideration of provisions[3]	–	7,443	0	0	0
8	Differences due to dilution risk	–	7,674	0	0	0
9	Other differences[4]	–	8,606	1,762	0	0
10	Exposure amounts considered for regulatory purposes	944,671	760,516	103,113	77,333	3,709[6]

[1] Includes effects due to differences in exposure modelling applying the effective expected positive exposure (EEPE) as well as the mark to market method for derivatives and financial collateral comprehensive method for SFT respectively; that also reflects differences as a result of the application of credit risk mitigation and regulatory netting rules.
[2] Included in the sum of € 35.1 billion are € 14.2 billion resulting from synthetic securitizations where CCF are set to a level of 1 and FX mismatches have to be considered amounting to € 1.3 billion. The amount represents the retained synthetic tranches after consideration of bought credit protection.
[3] Includes credit-risk related purchase price adjustments arising in the context of asset purchases as well as business combinations.
[4] Primarily reflects valuation differences as a result of regulatory product definition being different from the accounting product definition; moreover under the counterparty credit risk framework funded default fund contribution in form of securities are considered in the exposure amounts for regulatory purposes.
[5] Included in the sum of € 316.6 billion are € 4.1 billion net carrying amount attributable to securitization positions in the regulatory trading book covered under the market risk standardized approach.
[6] Exposure at default is only considered for securitization positions in the regulatory trading book as the remaining exposure is considered within the internally developed market risk models.

For table EU LI3 which provides an outline of the differences in the scopes of consolidation on an entity-by-entity-basis please refer to our Annual Report 2020, Note 44 “Shareholdings” to the consolidated financial statements on pages 371 to 389.

Article 436 (c) CRR - Impediments to fund transfers

The Group entities within the scope of prudential consolidation are subject to local regulatory and tax requirements as well as potentially exchange controls. We are not aware of any material impediments existing for capital distribution within the Group.

Article 436 (d) CRR - Potential capital shortfalls in unconsolidated subsidiaries

Our subsidiaries which were not included in our regulatory consolidation due to their immateriality did not have to comply with own regulatory minimum capital standards in 2020.

Article 436 (e) CRR - Derogations from prudential or liquidity requirements for subsidiaries

As of December 31, 2020, Deutsche Bank AG fully applied the exemptions pursuant to Section 2a (1) KWG in conjunction with Article 7 (3) CRR, Art. 6 (5) CRR and Section 2a (2) KWG in conjunction with Section 25a (1) sentence 3 KWG (so-called “parent waiver”) pursuant to which it may waive the application of provisions on own funds (Part II CRR), capital requirements (Part III CRR), large exposures (Part IV CRR), exposures to transferred credit risks (Chapter 2 of Regulation (EU) 2017/2402), leverage (Part VII CRR) and disclosure by institutions (Part VIII CRR) as well as certain risk management requirements (Section 25a (1) sentence 3 KWG) on a stand-alone basis.

Deutsche Bank AG’s subsidiaries norisbank GmbH, Deutsche Bank Europe GmbH and Deutsche Oppenheim Family Office AG, which all were consolidated within the Deutsche Bank regulatory group, fully applied the exemptions pursuant to Section 2a (1) KWG in conjunction with Article 7 (1) CRR, Art. 6 (5) CRR and Section 2a (2) KWG in conjunction with Section 25a (1) sentence 3 KWG (so-called “subsidiary waiver”) pursuant to which they may waive certain regulatory requirements to the same extent as Deutsche Bank AG (see preceding paragraph) on a stand-alone basis. In addition, Deutsche Bank AG's subsidiaries Deutsche Immobilien Leasing GmbH and Leasing Verwaltungsgesellschaft Waltersdorf mbH, also consolidated within the Deutsche Bank regulatory group, applied the "subsidiary waiver" rules to the extent applicable to them, i.e. with regard to certain risk management requirements pursuant to Section 25a (1) sentence 3 KWG.

These exemptions are available only for group companies in Germany and can only be applied if, amongst others, the risk strategies and risk management processes of Deutsche Bank AG or the Group also include the companies that apply the "waiver" rules and there is no material practical or legal impediment to the prompt transfer of own funds or repayment of liabilities from Deutsche Bank AG to the respective subsidiaries or from subsidiaries in the Group to Deutsche Bank AG.

The application of the aforementioned exemptions and the fulfillment of the respective requirements were notified to the BaFin and Deutsche Bundesbank on the basis of Section 2a (1) or (6) KWG in its version applicable until December 31, 2013. Pursuant to Section 2a (5) KWG the exemptions based on these notifications are grandfathered, i.e. the "waivers" are deemed to be granted under the current CRR and KWG rules.

Article 18 CRR Additional Disclosure Requirements for Significant Subsidiaries

In line with Article 13 (1) CRR our significant subsidiaries and those subsidiaries which are of significance for their local market are required to disclose information to the extent applicable in respect of own funds, capital requirements, capital buffers, credit risk adjustments, remuneration policy, leverage and use of credit risk mitigation techniques on an individual or sub-consolidated basis.

For some of our subsidiaries located in Germany it is not mandatory to calculate or report regulatory capital or leverage ratios on a stand-alone basis if they qualify for the exemptions codified in the waiver rule pursuant to Section 2a KWG in conjunction with Article 7 CRR. In these cases, the above-mentioned disclosure requirements are also not applicable for those subsidiaries.

In order to identify significant subsidiaries a catalogue of criteria has been developed, applied to all subsidiaries classified as "credit institution" or "investment firm" under the CRR and not qualifying for a waiver status pursuant to Section 2a KWG in conjunction with Article 7 CRR. A subsidiary is required to comply with the requirements in Article 13 CRR (as described above) if at least one criterion mentioned in the list below has been met. The criteria have been defined in relation to our business activities as well as the complexity and risk profile of the respective subsidiary. All figures referenced below are calculated on an IFRS basis as of December 31, 2020:

- Total Assets of € 30 billion or more (on individual or sub-consolidated basis)
- Five percent or more of our risk-weighted assets on group level
- 20 percent or more of the gross domestic product in its respective country, in which the subsidiary is located, but at least total assets of € five billion (on individual or sub-consolidated basis)
- Institutions directly supported by the European Stability Mechanism (ESM), European Financial Stability Facility (EFSF) or similar mechanisms
- Institutions belonging to the three largest institutions in their respective countries, in which the subsidiary is located (referring to the amount of total assets)
- Classification as "local systemically important institution" by the local competent authority

None of our subsidiaries have received support from any kind of stability mechanism.

As a result of the selection process described above, we identified three subsidiaries as "significant" for the Group and hence required to provide additional disclosure requirements as laid down in Article 13 CRR:

- Deutsche Bank Luxembourg S.A., Luxembourg
- DB USA Corporation, United States of America
- BHW Bausparkasse AG, Germany

The additional disclosures for our significant subsidiaries in relation to Article 13 CRR can be found either within the Pillar 3 Reports of the respective subsidiary as published on its website or on the Group's website for DB USA Corporation. Please note: Due to the fact that we consider the regulatory metrics and the risk profile of Deutsche Bank Luxembourg S.A and BHW Bausparkasse AG to be very stable over the course of the year and we only expect immaterial changes to these we omit quarterly Pillar 3 updates for these subsidiaries.

Own funds

Article 437 (1) (a,d-e) CRR - Own Funds composition, prudential filters and deduction items

Development of Own Funds

Our Total Regulatory capital as of December 31, 2020 amounted to € 58.7 billion compared to € 57.8 billion at the end of June 30, 2020. Our Tier 1 capital as of December 31, 2020 amounted to € 51.7 billion, consisting of a Common Equity Tier 1 (CET 1) capital of € 44.9 billion and Additional Tier 1 (AT1) capital of € 6.8 billion. The Tier 1 capital was € 1.0 billion higher than at the end of June 30, 2020, driven by an increase in CET 1 capital of € 1.0 billion while our AT1 capital remained unchanged.

The CET 1 capital increase of € 1.0 billion was largely the result of benefits from the regulatory changes. Our capital increased as respective deductions of goodwill and other intangible assets lowered by € 1.6 billion based on regulatory changes from software assets due to an amended Art. 36 (1) (b) CRR. An additional increase of € 0.4 billion resulted from the regulatory requirement of valuing subsidiaries and participations that are only consolidated under IFRS at-equity rather than at-cost. Furthermore our capital increased by € 0.6 billion from lower regulatory adjustments from prudential filters which were mainly the result of market normalization and € 0.2 billion driven by re-measurement gains related to defined benefit pension plan. These positive impacts were partly offset by negative effects from capital deduction of € 0.7 billion as per ECB's supervisory recommendation for prudential provisioning of non-performing exposures and Currency Translation Adjustments of € 1.3 billion with some positive foreign exchange counter-effects in capital deduction items.

As of December 31, 2020 our positive net income was € 0.5 billion. We recognise net income of € 0.3 billion in CET1 capital based on the proposed shareholder dividend payment of zero and our AT1 coupon accrual of € 0.2 billion for the year-end 2020 which is in line with the ECB Decision (EU) 2015/656 in accordance with the Article 26(2) of Regulation (EU) No 575/2013 (ECB/2015/4).

Our fully loaded Total Regulatory capital as of December 31, 2020 was € 57.3 billion, compared to € 56.4 billion at the end of June 30, 2020. Our fully loaded Tier 1 capital as of December 31, 2020 was € 50.6 billion, compared to € 49.6 billion at the end of June 30, 2020. Our fully loaded AT1 capital amounted to € 5.7 billion as per end of December 30, 2020 which remained unchanged compared to June 30, 2020. Our CET 1 capital amounted to € 44.9 billion as of December 31, 2020, compared to € 43.9 billion as of June 30, 2020.

Please note: The CET1 capital (€ 44.9 billion) and related metrics (CET 1 ratio 13.6 %, Tier 1 ratio 15.7 %, Total Capital ratio 17.8 %, fully loaded Leverage Ratio 4.7 %, TLAC ratio 32.0 % and MREL 10.3 %) have been updated in line with recent ECB/EBA guidance to reflect a dividend payment of zero.

Own Funds template (incl. RWA and capital ratios)

		Dec 31, 2020		Jun 30, 2020		
	in € m.	CRR/CRD fully-loaded[12]	CRR/CRD	CRR/CRD fully loaded[12]	CRR/CRD	References[1]
	Common Equity Tier 1 (CET 1) capital: instruments and reserves					
1	Capital instruments, related share premium accounts and other reserves	45,890	45,890	45,709	45,709	A
	of which: Instrument type 1 (ordinary shares)[2]	45,890	45,890	45,709	45,709	A
	of which: Instrument type 2	0	0	0	0	
	of which: Instrument type 3	0	0	0	0	
2	Retained earnings	9,784	9,784	9,227	9,227	B
3	Accumulated other comprehensive income (loss), net of tax	(1,118)	(1,118)	249	249	C
3a	Funds for general banking risk	0	0	0	0	
4	Amount of qualifying items referred to in Art. 484 (3) CRR and the related share premium accounts subject to phase-out from CET 1	N/M	0	N/M	0	
5	Minority interests (amount allowed in consolidated CET 1)	805	805	838	838	
5a	Independently reviewed interim profits net of any foreseeable charge or dividend[3]	253	253	1	1	B
6	Common Equity Tier 1 (CET 1) capital before regulatory adjustments	55,613	55,613	56,024	56,024	
	Common Equity Tier 1 (CET 1) capital: regulatory adjustments					
7	Additional value adjustments (negative amount)[4]	(1,430)	(1,430)	(1,836)	(1,836)	
8	Goodwill and other intangible assets (net of related tax liabilities) (negative amount)	(4,635)	(4,635)	(6,348)	(6,348)	D
10	Deferred tax assets that rely on future profitability excluding those arising from temporary differences (net of related tax liabilities where the conditions in Art. 38 (3) CRR are met) (negative amount)	(1,353)	(1,353)	(1,079)	(1,079)	E
11	Fair value reserves related to gains or losses on cash flow hedges	(11)	(11)	(2)	(2)	
12	Negative amounts resulting from the calculation of expected loss amounts	(99)	(99)	(81)	(81)	
13	Any increase in equity that results from securitized assets (negative amount)	(1)	(1)	(1)	(1)	
14	Gains or losses on liabilities designated at fair value resulting from changes in own credit standing[5]	(100)	(100)	(272)	(272)	
15	Defined benefit pension fund assets (net of related tax liabilities) (negative amount)	(772)	(772)	(810)	(810)	F
16	Direct, indirect and synthetic holdings by an institution of own CET 1 instruments (negative amount)[6]	0	0	0	0	
17	Direct, indirect and synthetic holdings of the CET 1 instruments of financial sector entities where those entities have reciprocal cross holdings with the institution designed to inflate artificially the own funds of the institution (negative amount)	0	0	0	0	
18	Direct, indirect and synthetic holdings by the institution of the CET 1 instruments of financial sector entities where the institution does not have a significant investment in those entities (amount above 10 % threshold and net of eligible short positions) (negative amount)[7]	0	0	0	0	
19	Direct, indirect and synthetic holdings by the institution of the CET 1 instruments of financial sector entities where the institution has a significant investment in those entities (amount above 10 % threshold and net of eligible short positions) (negative amount)	0	0	0	0	
20a	Exposure amount of the following items which qualify for a risk weight of 1,250 %, where the institution opts for the deduction alternative	0	0	0	0	
	of which:					
20b	Qualifying holdings outside the financial sector (negative amount)	0	0	0	0	
20c	Securitization positions (negative amount)	0	0	0	0	
20d	Free deliveries (negative amount)	0	0	0	0	
21	Deferred tax assets arising from temporary differences (amount above 10 % threshold, net of related tax liabilities where the conditions in Article 38 (3) CRR are met) (negative amount)	(75)	(75)	(419)	(419)	E
22	Amount exceeding the 15 % threshold (negative amount)	0	0	0	0	
	of which:					
23	Direct, indirect and synthetic holdings by the institution of the CET 1 instruments of financial sector entities where the institution has a significant investment in those entities	0	0	0	0	
25	Deferred tax assets arising from temporary differences	0	0	0	0	E
25a	Losses for the current financial year (negative amount)	0	0	0	0	
25b	Foreseeable tax charges relating to CET 1 items (negative amount)	0	0	0	0	
26a	Regulatory adjustments relating to unrealized gains and losses pursuant to Article 467 and 468 CRR	N/M	N/M	N/M	N/M	
26b	Amount to be deducted from or added to CET 1 capital with regard to additional filters and deductions required pre CRR	0	0	0	0	
27	Qualifying AT1 deductions that exceed the AT1 capital of the institution (negative amount)	0	0	0	0	
27a	Other regulatory adjustments[8]	(2,252)	(2,252)	(1,311)	(1,311)	

	in € m.	Dec 31, 2020 CRR/CRD fully-loaded[12]	Dec 31, 2020 CRR/CRD	Jun 30, 2020 CRR/CRD fully loaded[12]	Jun 30, 2020 CRR/CRD	References[1]
28	Total regulatory adjustments to Common Equity Tier 1 (CET 1) capital	**(10,728)**	**(10,728)**	(12,161)	(12,161)	
29	Common Equity Tier 1 (CET 1) capital	**44,885**	**44,885**	43,863	43,863	
	Additional Tier 1 (AT1) capital: instruments					
30	Capital instruments and the related share premium accounts	5,828	5,828	5,828	5,828	G
	of which:					
31	Classified as equity under applicable accounting standards	5,828	5,828	5,828	5,828	G
32	Classified as liabilities under applicable accounting standards	0	0	0	0	
33	Amount of qualifying items referred to in Article 484 (4) CRR and the related share premium accounts subject to phase out from AT1	N/M	1,100	N/M	1,100	H
34	Qualifying Tier 1 capital included in consolidated AT1 capital issued by subsidiaries and held by third parties	0	0	0	0	
35	of which: instruments issued by subsidiaries subject to phase out	N/M	0	N/M	0	
36	Additional Tier 1 (AT1) capital before regulatory adjustments	**5,828**	**6,928**	5,828	6,928	
	Additional Tier 1 (AT1) capital: regulatory adjustments					
37	Direct, indirect and synthetic holdings by an institution of own AT1 instruments (negative amount)	(80)	(80)	(80)	(80)	G
38	Direct, indirect and synthetic holdings of the AT1 instruments of financial sector entities where those entities have reciprocal cross holdings with the institution designed to inflate artificially the own funds of the institution (negative amount)	0	0	0	0	
39	Direct, indirect and synthetic holdings of the AT1 instruments of financial sector entities where the institution does not have a significant investment in those entities (amount above the 10 % threshold and net of eligible short positions) (negative amount)[7]	0	0	0	0	
40	Direct, indirect and synthetic holdings by the institution of the AT1 instruments of financial sector entities where the institution has a significant investment in those entities (amount above the 10 % threshold net of eligible short positions) (negative amount)	0	0	0	0	
41a	Residual amounts deducted from AT1 capital with regard to deduction from CET 1 capital during the transitional period pursuant to Article 472 CRR	N/M	N/M	N/M	N/M	
	of which:					
	Goodwill and other intangible assets (net of related tax liabilities)	N/M	N/M	N/M	N/M	D
	Negative amounts resulting from the calculation of expected loss amounts	N/M	N/M	N/M	N/M	
42	Qualifying T2 deductions that exceed the T2 capital of the institution (negative amount)	0	0	0	0	
43	Total regulatory adjustments to Additional Tier 1 (AT1) capital	**(80)**	**(80)**	(80)	(80)	
44	Additional Tier 1 (AT1) capital	**5,748**	**6,848**	5,748	6,848	
45	Tier 1 capital (T1 = CET 1 + AT1)	**50,634**	**51,734**	49,612	50,712	
	Tier 2 (T2) capital: instruments and provisions					
46	Capital instruments and the related share premium accounts[9]	6,692	7,012	6,853	7,161	I
47	Amount of qualifying items referred to in Article 484 (5) CRR and the related share premium accounts subject to phase out from T2	N/M	0	N/M	0	I
48	Qualifying own funds instruments included in consolidated T2 capital issued by subsidiaries and held by third parties	11	11	14	14	I
49	of which: instruments issued by subsidiaries subject to phase out	N/M	0	N/M	0	
50	Credit risk adjustments	0	0	0	0	
51	Tier 2 (T2) capital before regulatory adjustments	**6,703**	**7,024**	6,867	7,175	
	Tier 2 (T2) capital: regulatory adjustments					
52	Direct, indirect and synthetic holdings by an institution of own T2 instruments and subordinated loans (negative amount)	(80)	(80)	(80)	(80)	I
53	Direct, indirect and synthetic holdings of the T2 instruments and subordinated loans of financial sector entities where those entities have reciprocal cross holdings with the institution designed to inflate artificially the own funds of the institution (negative amount)	0	0	0	0	
54	Direct, indirect and synthetic holdings of the T2 instruments and subordinated loans of financial sector entities where the institution does not have a significant investment in those entities (amount above 10 % threshold and net of eligible short positions) (negative amount)[7]	0	0	0	0	
55	Direct and indirect holdings by the institution of the T2 instruments and subordinated loans of financial sector entities where the institution has a significant investment in those entities (net of eligible short positions) (negative amount)	0	0	0	0	

	in € m.	Dec 31, 2020 CRR/CRD fully-loaded[12]	Dec 31, 2020 CRR/CRD	Jun 30, 2020 CRR/CRD fully loaded[12]	Jun 30, 2020 CRR/CRD	References[1]
56a	Residual amounts deducted from Tier 2 capital with regard to deduction from Common Equity Tier 1 capital during the transitional period pursuant to Article 472 CRR	N/M	N/M	N/M	N/M	
	of which:					
	Negative amounts resulting from the calculation of expected loss amounts	N/M	N/M	N/M	N/M	
57	Total regulatory adjustments to Tier 2 (T2) capital	(80)	(80)	(80)	(80)	
58	Tier 2 (T2) capital	6,623	6,944	6,787	7,095	
59	Total capital (TC = T1 + T2)	57,257	58,677	56,398	57,807	
60	Total risk-weighted assets	328,951	328,951	330,879	330,879	
	of which:					
	Credit Risk (including Settlement Risk)	222,764	222,764	224,866	224,866	
	Credit Valuation Adjustment (CVA)	8,392	8,392	5,235	5,235	
	Market Risk	28,897	28,897	29,468	29,468	
	Operational Risk	68,899	68,899	71,310	71,310	
	Capital ratios and buffers					
61	Common Equity Tier 1 capital ratio (as a percentage of risk-weighted assets)	13.6	13.6	13.3	13.3	
62	Tier 1 capital ratio (as a percentage of risk-weighted assets)	15.4	15.7	15.0	15.3	
63	Total capital ratio (as a percentage of risk-weighted assets)	17.4	17.8	17.0	17.5	
64	Institution specific buffer requirement (CET 1 requirement in accordance with Art. 92 (1) (a) CRR plus capital conservation and countercyclical buffer requirements, plus systemic risk buffer, plus the systemically important institution buffer (G-SII or O-SII buffer), expressed as a percentage of risk-weighted assets)[10]	10.4	10.4	10.4	10.4	
	of which:					
65	Capital conservation buffer requirement	2.5	2.5	2.5	2.5	
66	Countercyclical buffer requirement	0.02	0.02	0.02	0.02	
67	Systemic risk buffer requirement	0.0	0.0	0.0	0.0	
67a	Global Systemically Important Institution (G-SII) or Other Systemically Important Institution (O-SII) buffer	2.0	2.0	2.0	2.0	
68	Common Equity Tier 1 capital available to meet buffers (as a percentage of risk-weighted assets)[11]	12.8	13.2	13.3	13.3	
	Amounts below the thresholds for deduction (before risk weighting)					
72	Direct, indirect and synthetic holdings of the capital of financial sector entities where the institution does not have a significant investment in those entities (amount below 10 % threshold and net of eligible short positions)[7]	2,324	2,324	2,561	2,561	
73	Direct, indirect and synthetic holdings by the institution of the CET 1 instruments of financial sector entities where the institution has a significant investment in those entities (amount below 10 % threshold and net of eligible short positions)	786	786	814	814	
75	Deferred tax assets arising from temporary differences (amount below 10 % threshold, net of related tax liability where the conditions in Article 38 (3) CRR are met)	4,721	4,721	4,559	4,559	
	Applicable caps on the inclusion of provisions in Tier 2 capital					
76	Credit risk adjustments included in T2 in respect of exposures subject to standardized approach (prior to the application of the cap)	0	0	0	0	
77	Cap on inclusion of credit risk adjustments in T2 under standardized approach	226	226	206	206	
78	Credit risk adjustments included in T2 in respect of exposures subject to internal ratings-based approach (prior to the application of the cap)	0	0	0	0	
79	Cap for inclusion of credit risk adjustments in T2 under internal ratings-based approach	1,048	1,048	1,071	1,071	
	Capital instruments subject to phase-out arrangements					
80	Current cap on CET 1 instruments subject to phase out arrangements	N/M	0	N/M	0	
81	Amount excluded from CET 1 due to cap (excess over cap after redemptions and maturities)	N/M	0	N/M	0	
82	Current cap on AT1 instruments subject to phase out arrangements	N/M	2,505	N/M	2,505	
83	Amount excluded from AT1 due to cap (excess over cap after redemptions and maturities)	N/M	0	N/M	0	
84	Current cap on T2 instruments subject to phase out arrangements	N/M	675	N/M	675	
85	Amount excluded from T2 due to cap (excess over cap after redemptions and maturities)	N/M	0	N/M	0	

N/M – Not meaningful

1 References provide the mapping of regulatory balance sheet items used to calculate regulatory capital as reflected in the column "References" in the section "EU LI1 – Differences between accounting and regulatory scopes of consolidation and the mapping of financial statement categories with regulatory risk categories". Where applicable, more detailed information is provided in the respective reference footnote section.
2 Based on EBA list as referred to in Article 26 (3) CRR.
3 Full year profit is recognized as per ECB Decision (EU) 2015/656 in accordance with the Article 26(2) of Regulation (EU) No 575/2013 (ECB/2015/4)).

[4] The € 1.4 billion additional value adjustments were derived from the EBA Regulatory Technical Standard on prudent valuation and are before consideration of a benefit from the related reduction of the shortfall of provisions to expected losses of € 0.1 billion.
[5] Gains and losses on liabilities of the institution that are valued at fair value that result from changes in the own credit standing of the institution according to Article 33 (1) (b) CRR as well as fair value gains and losses on derivative liabilities of the institution that result from changes in the own credit risk of the institution according to Article 33 (1) (c) CRR.
[6] Excludes holdings that are already considered in the accounting base of Common Equity.
[7] Based on our current interpretation no deduction amount expected.
[8] Includes € 0.4 billion capital deduction effective from April 2019 and € 0.3 billion effective from October 2016 based on regular ECB review, € 0.9 billion capital deduction based on ECB guidance on irrevocable payment commitments related to the Single Resolution Fund and the Deposit Guarantee Scheme effective from January 2018 onwards and € 0.7 billion capital deduction effective from December 2020 based on ECB's supervisory recommendation for a prudential provisioning of non-performing exposures. IFRS 9 transitional provision as per Article 473a of the CRR resulted in CET 1 increase of € 0.1 billion as of December 31, 2020.
[9] Amortization is taken into account.
[10] Includes CET1 Pillar 2 Requirement.
[11] Calculated as the CET 1 capital less any CET 1 items used to meet Tier 1, Total capital requirements, and associated Pillar 2 Requirement.
[12] For our understanding of the term "fully-loaded" please refer to our definition as provided in section "Basel 3 and CRR/CRD" on page 5 of this report.

[A] Common shares, additional paid-in capital and common shares in treasury reflect regulatory eligible CET 1 capital instruments.
[B] The position retained earnings in the regulatory balance sheet includes net income (loss) attributable to Deutsche Bank shareholders and additional equity components of € 495 million (June 2020: € 71 million). This item is excluded from the position retained earnings in the Own funds template (incl. RWA and capital ratios) and shown separately along with accrual for AT1 coupons of € (242) million (June 2020: € (69) million) in the position independently reviewed interim profits net of any foreseeable charge or dividend.
[C] Difference to regulatory balance sheet position driven by prudential filters for unrealized gains and losses.
[D] Regulatory applicable amount is goodwill and other intangible assets of € 6,544 million (June 2020: € 6,703 million) plus goodwill from equity method investments of € 64 million (June 2020: € 66 million) as per regulatory balance sheet reduced by deferred tax liabilities on other intangibles of € 366 million (June 2020: € 421 million) and prudent software assets as per Art. 36 (1) (b) CRR of € 1608 million (June 2020: € 0 million).
[E] Differences to balance sheet position mainly driven by adjustments as set out in Article 38 (2) to (5) CRR (e.g. regulatory offsetting requirements).
[F] Regulatory applicable amount is defined benefit pension fund assets of € 891 million (June 2020: € 955 million) reduced by deferred tax liabilities on defined benefit pension fund assets of € 119 million (June 2020: € 145 million).
[G] Additional equity components reflects regulatory eligible AT1 capital instruments.
[H] Difference to regulatory balance sheet driven by regulatory adjustments as set out in Articles 51 to 61 CRR (e.g. current cap on AT1 instruments subject to phase-out arrangements).
[I] Difference to regulatory balance sheet driven by regulatory adjustments as set out in Articles 62 to 71 CRR (e.g. amortization, minority interest).

Reconciliation of shareholders' equity to Own Funds

in € m.	Dec 31, 2020	Jun 30, 2020
Total shareholders' equity per accounting balance sheet	**54,786**	55,343
Deconsolidation/Consolidation of entities[3]	265	(88)
of which:		
Additional paid-in capital	0	(10)
Retained earnings	265	(176)
Accumulated other comprehensive income (loss), net of tax	0	98
Total shareholders' equity per regulatory balance sheet	**55,050**	55,255
Minority Interests (amount allowed in consolidated CET 1)	805	838
Accrual for dividend and AT1 coupons[1]	(242)	(69)
Reversal of deconsolidation/consolidation of the position Accumulated other comprehensive income (loss), net of tax, during transitional period	0	0
Common Equity Tier 1 (CET 1) capital before regulatory adjustments	**55,613**	56,024
Prudential filters	(1,542)	(2,112)
of which:		
Additional value adjustments	(1,430)	(1,836)
Any increase in equity that results from securitized assets	(1)	(1)
Fair value reserves related to gains or losses on cash flow hedges and gains or losses on liabilities designated at fair value resulting from changes in own credit standing	(111)	(275)
Regulatory adjustments relating to unrealized gains and losses pursuant to Art. 467 and 468 CRR	0	0
Regulatory adjustments	(9,186)	(10,049)
of which:		
Goodwill and other intangible assets (net of related tax liabilities) (negative amount)	(4,635)	(6,348)
Deferred tax assets that rely on future profitability	(1,428)	(1,498)
Negative amounts resulting from the calculation of expected loss amounts	(99)	(81)
Defined benefit pension fund assets (net of related tax liabilities) (negative amount)	(772)	(810)
Direct, indirect and synthetic holdings by the institution of the CET 1 instruments of financial sector entities where the institution has a significant investment in those entities	0	0
Securitization positions not included in risk-weighted assets	0	0
Other[2]	(2,252)	(1,311)
Common Equity Tier 1 capital	**44,885**	43,863
Additional Tier 1 capital	**6,848**	6,848
Additional Tier 1 Notes (AT1 Notes)	5,748	5,748
Per balance sheet	5,824	5,826
Deconsolidation/Consolidation of entities	0	0
Regulatory adjustments to balance sheet position	(76)	(77)
Hybrid capital securities	1,100	1,100
Per balance sheet	1,321	1,348
Deconsolidation/Consolidation of entities	0	0
Regulatory adjustments to balance sheet position	(221)	(248)
Other regulatory adjustments	0	0
Deductions from Additional Tier 1 capital	0	0
Tier 1 capital	**51,734**	50,712
Tier 2 capital	**6,944**	7,095
Subordinated debt	6,660	6,811
Per balance sheet	7,669	6,384
Deconsolidation/Consolidation of entities	0	0
Regulatory adjustments to balance sheet position	(1,009)	427
of which:		
Amortization according to Art. 64 CRR	(540)	(255)
Other	(469)	682
Other regulatory adjustments	284	284
Deductions from Tier 2 capital	0	0
Total capital	**58,677**	57,807

1 Full year profit is recognized as per ECB Decision (EU) 2015/656 in accordance with the Article 26(2) of Regulation (EU) No 575/2013 (ECB/2015/4).
2 Includes € 0.4 billion capital deduction effective from April 2019 and € 0.3 billion effective from October 2016 based on regular ECB review, € 0.9 billion capital deduction based on ECB guidance on irrevocable payment commitments related to the Single Resolution Fund and the Deposit Guarantee Scheme effective from January 2018 onwards and € 0.7 billion capital deduction effective from December 2020 based on ECB's supervisory recommendation for a prudential provisioning of non-performing exposures. IFRS 9 transitional provision as per Article 473a of the CRR resulted in CET 1 increase of € 0.1 billion as of December 31, 2020.
3 Includes € 0.4 billion increase due to regulatory changes from cost to at-equity treatment of subsidiaries and participations that are only consolidated under IFRS.

Development of Own Funds

in € m.	six months ended Dec 31, 2020	six months ended Jun 30, 2020
Common Equity Tier 1 (CET 1) capital - opening amount	**43,863**	44,148
Common shares, net effect	0	0
of which:		
New shares issued (+)	0	0
Shares retired (–)	0	0
Additional paid-in capital	132	(19)
Retained earnings	982	(127)
of which:		
Actuarial gains (losses) rel. to defined benefit plans, net of tax and Currency Translation Adjustment (CTA)	116	107
Net income attributable to Deutsche Bank Shareholders	424	71
Common shares in treasury, net effect/(+) sales (–) purchase	50	(52)
Movements in accumulated other comprehensive income	(1,368)	(288)
of which:		
Foreign currency translation, net of tax	(1,287)	(460)
Unrealized gains and losses	12	214
Other	(92)	(42)
Accrual for dividend and Additional Tier 1 (AT1) coupons[1]	(172)	(69)
of which:		
Gross dividends (deduction)	2	(2)
Shares issued in lieu of dividends (add back)	0	0
Gross AT1 coupons (deduction)	(175)	(67)
Additional value adjustments	406	(98)
Goodwill and other intangible assets (net of related tax liabilities) (negative amount)	1,714	166
Deferred tax assets that rely on future profitability (excluding those arising from temporary differences)	(274)	47
Negative amounts resulting from the calculation of expected loss amounts	(18)	178
Removal of gains/losses resulting from changes in own credit standing in liabilities designated at fair value (net of tax)	172	(145)
Defined benefit pension fund assets (net of related tax liabilities) (negative amount)	38	81
Direct, indirect and synthetic holdings by the institution of the CET 1 instruments of financial sector entities where the institution has a significant investment in those entities	0	0
Securitization positions not included in risk-weighted assets	0	0
Deferred tax assets arising from temporary differences (amount above 10 % and 15 % threshold, net of related tax liabilities where the conditions in Art. 38 (3) CRR are met)	344	(100)
Other, including regulatory adjustments	(981)	141
Common Equity Tier 1 (CET 1) capital - closing amount	**44,885**	43,863
Additional Tier 1 (AT1) capital - opening amount	**6,848**	6,397
New Additional Tier 1 eligible capital issues	0	1,136
Matured and called instruments	0	(713)
Transitional arrangements	0	0
of which:		
Amount excluded from Additional Tier 1 capital due to cap	0	0
Goodwill and other intangible assets (net of related tax liabilities)	0	0
Negative amounts resulting from the calculation of expected loss amounts	0	0
Direct, indirect and synthetic holdings by the institution of the CET 1 instruments of financial sector entities where the institution has a significant investment in those entities	0	0
Other, including regulatory adjustments	0	29
Additional Tier 1 (AT1) capital - closing amount	**6,848**	6,848
Tier 1 capital (T1 = CET 1 + AT1)	**51,734**	50,712
Tier 2 (T2) capital - opening amount	**7,095**	5,957
New Tier 2 eligible capital issues	398	1,212
Matured and called instruments	0	(100)
Amortization adjustments	(284)	(169)
Transitional arrangements	0	0
of which:		
Inclusion of amount excluded from Additional Tier 1 capital due to cap	0	0
Amount to be deducted from or added to Additional Tier 2 capital with regard to additional filters and deductions required pre-CRR	0	0
Negative amounts resulting from the calculation of expected loss amounts	0	0
Direct, indirect and synthetic holdings by the institution of the CET 1 instruments of financial sector entities where the institution has a significant investment in those entities	0	0
Other, including regulatory adjustments	(265)	195
Tier 2 (T2) capital - closing amount	**6,944**	7,095
Total regulatory capital (TC = T1 + T2)	**58,677**	57,807

[1] Full year profit is recognized as per ECB Decision (EU) 2015/656 in accordance with the Article 26(2) of Regulation (EU) No 575/2013 (ECB/2015/4).

Disclosures under Article 473a CRR - Transitional arrangements for mitigating the impact of the introduction of IFRS 9 on own funds

For all of our CET 1 measures we applied for the first time for June 30, 2020, the transitional arrangements in relation to IFRS 9 as provided in the current CRR/CRD, Article 473a CRR. The CRR allowed for a phase-in of the corresponding CET 1 reduction due to the increase of IFRS 9 credit loss allowance over a five year period until year end 2022. The transitional provisions were structured such that there is a static component relating to increases of credit loss allowance observed as of January 2018 and a dynamic component relating to credit loss allowance increases observed between January 2018 and the current reporting date.

As per the CRR amendment published on June 26, 2020 the transitional provisions have been modified such that the dynamic component is reset, i.e. it separately covers the periods from January 1, 2018 to January 1, 2020 and the period from January 1, 2020 to the current reporting date, the phase-in period is extended until 2024, and the phase-in percentages are modified.

In addition, the CRR amendment simplifies the implementation of the transitional provisions as the requirement to recalculate the exposure at default (EaD) for each individual credit risk standardized approach (CRSA) exposure taking into account the amounts added back to CET 1 no longer applies. Instead, an additional credit risk RWA amount equal to 100 % times the credit loss allowance for the CRSA portfolio that has not reduced CET 1 due to the application of the transitional provisions is determined. The same amount is included in the leverage exposure. We do make use of this simplification in our application of transitional provisions.

In the following table CET 1, Tier 1 and Total Capital as well as risk weighted assets and leverage exposure are shown based on currently applicable CRR in comparison to not applying Article 473a CRR.

IFRS 9-Fully Loaded: Comparison of institutions' own funds and capital and leverage ratios with and without the application of transitional arrangements for IFRS 9 or analogous ECLs

		Dec 31, 2020	Sep 30, 2020
		a	b
	Available capital (in € m.)		
1	Common Equity Tier 1 (CET 1) capital	44,885	43,086
2	Common Equity Tier 1 (CET 1) capital as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	44,831	43,028
3	Tier 1 capital	51,734	49,935
4	Tier 1 capital as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	51,679	49,876
5	Total capital	58,677	57,164
6	Total capital as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	58,623	57,106
	Risk-weighted assets (in € m.)		
7	Total risk-weighted assets	328,951	324,548
8	Total risk-weighted assets as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	328,897	324,492
	Capital ratios		
9	Common Equity Tier 1 (as a percentage of risk exposure amount)	13.6	13.3
10	Common Equity Tier 1 (as a percentage of risk exposure amount) as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	13.6	13.3
11	Tier 1 (as a percentage of risk exposure amount)	15.7	15.4
12	Tier 1 (as a percentage of risk exposure amount) as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	15.7	15.4
13	Total capital (as a percentage of risk exposure amount)	17.8	17.6
14	Total capital (as a percentage of risk exposure amount) as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	17.8	17.6
	Leverage ratio		
15	Leverage ratio total exposure measure[1, 2]	1,078,268	1,100,745
16	Leverage ratio[2]	4.8	4.5
17	Leverage ratio as if IFRS 9 or analogous ECLs transitional arrangements had not been applied[2]	4.8	4.5

[1] Leverage ratio total exposure measure if IFRS 9 or analogous ECL transitional arrangements had not been applied would have been lower by € 0.1 billion for September 30, 2020 and € 0.1 billion December 31, 2020.
[2] Excluding central bank exposures of € 97 billion for September 30, 2020 and € 85 billion for December 31, 2020 in accordance with the Decision (EU) 2020/1306 of the European Central Bank. The Leverage Ratio would amount to 4.2 % for September 30, 2020 and 4.4 % December 31, 2020 without excluding this respective central bank exposure.

The capital add back in total € 54.4 million as of December 31,2020 includes € 54.4 million from the static component solely stemming from the CRSA portfolio due to the increase in credit loss allowances for the CRSA portfolio at transition from IAS 39 to IFRS 9 at the end of 2017 and beginning of 2018. There was no contribution from the IRBA portfolios, given the regulatory expected loss exceeded IFRS 9 Credit Loss Allowances for the relevant reporting dates.

There is no contribution from the dynamic component for both CRSA and IRBA portfolios which compares credit loss allowance levels between January, 1 2018 and the reporting date. This is due to a reduction in credit loss allowance levels in aforementioned period for the CRSA portfolio and the regulatory expected loss exceeding the credit loss allowance levels for the IRBA portfolio.

Article 437a (a-d) CRR - Own funds and eligible liabilities

Our available minimum own funds and eligible liabilities (MREL) as of December 31, 2020, amounted to € 108.9 billion, consisting of a total loss absorbing capacity (TLAC) of € 105.2 billion and further eligible liabilities from senior preferred plain vanilla liabilities instruments of € 3.7 billion.

Own funds and eligible liabilities disclosure ordered by insolvency hierarchy

in € m. (unless stated otherwise)	Dec 31, 2020	Jun 30, 2020
Regulatory capital elements of TLAC/MREL		
Common Equity Tier 1 capital (CET 1)	44,885	43,863
Additional Tier 1 (AT1) capital instruments eligible under TLAC/MREL	6,848	6,848
Tier 2 (T2) capital instruments eligible under TLAC/MREL		
Tier 2 (T2) capital instruments before TLAC/MREL adjustments	6,944	7,095
Tier 2 (T2) capital instruments adjustments for TLAC/MREL	518	255
Tier 2 (T2) capital instruments eligible under TLAC/MREL	7,462	7,350
Total regulatory capital elements of TLAC/MREL	**59,195**	58,061
Other elements of TLAC/MREL		
Senior non-preferred plain vanilla		
o/w residual maturity >= 1 year and <2 years (Art 437a(a))	6,854	13,373
o/w residual maturity >= 2 years (Art 437a(a))	39,194	36,338
Total Senior non-preferred plain vanilla	46,048	49,711
Holdings of eligible liabilities instruments of other G-SIIs (TLAC only)	0	0
Total Loss Absorbing Capacity (TLAC)	**105,243**	107,772
Add back of holdings of eligible liabilities instruments of other G-SIIs (TLAC only)	0	0
Available Own Funds and subordinated Eligible Liabilities (subordinated MREL)	**105,243**	107,772
Senior preferred plain vanilla		
o/w residual maturity >= 1 year and <2 years (Art 437a(a))	1,680	1,818
o/w residual maturity >= 2 years (Art 437a(a))	1,978	1,768
Total Senior preferred plain vanilla	3,658	3,586
Available Minimum Own Funds and Eligible Liabilities (MREL)	**108,901**	111,358
Risk Weighted Assets (RWA)	328,951	330,879
Leverage Ratio Exposure (LRE)	1,078,268	1,192,408
Total amount of liabilities excluded from eligible liabilities items (Art 437a(d))	471,371	474,951
Total liabilities and own funds after prudential netting (TLOF)	1,018,744	1,070,843
TLAC ratio		
TLAC ratio (as percentage of RWA)	31.99	32.57
TLAC requirement (as percentage of RWA)	20.52	20.52
TLAC ratio (as percentage of Leverage Exposure)	9.76	9.04
TLAC requirement (as percentage of Leverage Exposure)	6.00	6.00
TLAC surplus over RWA requirement	37,747	39,881
TLAC surplus over LRE requirement	40,547	36,228
MREL subordination		
MREL subordination ratio (as percentage of TLOF)	10.33	10.06
MREL subordination requirement (as percentage of TLOF)	6.11	6.11
Surplus over MREL subordination requirement	42,998	42,344
MREL ratio		
MREL ratio (as percentage of TLOF)	10.69	10.40
MREL requirement (as percentage of TLOF)	8.58	8.58
MREL surplus over requirement	21,493	19,480

As of December 31, 2020 TLOF were € 1,018.7 billion and available MREL were € 108.9 billion, corresponding to a ratio of 10.69 %. This means that Deutsche Bank has a comfortable MREL surplus of € 21.5 billion above its MREL requirement of € 87.4 billion (i.e. 8.58 % of TLOF). € 105.2 billion of our available MREL were subordinated, corresponding to a MREL subordination ratio of 10.33 %, representing a surplus of € 43.0 billion over our subordination requirement of € 62.2 billion (i.e. 6.11 % of TLOF).

As of December 31, 2020 TLAC was € 105.2 billion and the corresponding TLAC ratios were 31.99 % (RWA based) and 9.76 % (Leverage exposure based). This means that Deutsche Bank has a comfortable TLAC surplus of € 37.7 billion over its total loss absorbing capacity minimum requirement of € 67.5 billion (20.52 % RWA based).

Compared to June 30, 2020 the surpluses above both our MREL requirement and the MREL subordination requirement have been stable while the surplus above the TLAC requirement increased due to lower Leverage Ratio Exposure as a result of the COVID-19 relief measures.

Main features of eligible liabilities instruments

As of December 31, 2020, 64 % of DB's senior non-preferred MREL/TLAC eligible instruments in terms of volume with remaining tenor of > 1 year were public benchmarks with volume-weighted average original tenor of 6.5 years. 72 % out of these senior non-preferred benchmarks had a fixed coupon rate with a volume-weighted average coupon of 2.2 % and remaining maturity of 3.9 years. The main funding currencies were Euro and US Dollar which provide more than 90 % of our senior non-preferred public benchmarks.

A description of the main features of our senior non-preferred plain vanilla, TLAC and subordinated MREL eligible liabilities instruments issued by Deutsche Bank is published on Deutsche Bank's website (db.com/ir/en/capital-instruments.htm).

The following table provides a simplified overview of the ranking of liabilities in an insolvency proceeding under German law. The ranking is presented from the more junior liabilities to the more senior liabilities. Deutsche Bank AG's eligible liabilities for TLAC and MREL which meet all of the conditions in CRR Article 72b (2) or are grandfathered pursuant to CRR Article 494b (3) rank at position 11 in the below order. Senior preferred eligible liabilities which are eligible for MREL only rank in position 12. There are no liabilities included in Deutsche Bank's eligible liabilities instruments as per CRR Article 72b (3) and (4).

Ranking of liabilities in an insolvency proceeding under German law

<table>
<tr><th>Rank</th><th>Label of claims</th><th>Code</th></tr>
<tr><td>1</td><td>Common equity Tier 1 instruments</td><td>Section 199 of the Insolvency Code</td></tr>
<tr><td>2</td><td>Additional Tier 1 instruments</td><td rowspan="3">Section 39 (2) of the Insolvency Code</td></tr>
<tr><td>3</td><td>Tier 2 instruments</td></tr>
<tr><td>4</td><td>Claims subordinated by virtue of a contractual subordination clause not specifying the pertinent rank (other than Additional Tier 1 or Tier 2 instruments)</td></tr>
<tr><td>5</td><td>Claims for repayment of shareholder loans and accrued interest thereon</td><td>Section 39 (1) no. 5 of the Insolvency Code</td></tr>
<tr><td>6</td><td>Claims for the delivery of goods or provision of services free of charge</td><td>Section 39 (1) no. 4 of the Insolvency Code</td></tr>
<tr><td>7</td><td>Criminal and administrative fines</td><td>Section 39 (1) no. 3 of the Insolvency Code</td></tr>
<tr><td>8</td><td>Creditors' costs related to the insolvency proceeding</td><td>Section 39 (1) no. 2 of the Insolvency Code</td></tr>
<tr><td>9</td><td>Interest and late payment surcharges accrued after the opening of insolvency proceedings</td><td>Section 39 (1) no. 1 of the Insolvency Code</td></tr>
<tr><td>10</td><td>Claims subordinated by virtue of a contractual subordination clause which specifies the relevant ranking</td><td>Section 39 (2) of the Insolvency Code</td></tr>
<tr><td>11</td><td>Non-preferred creditor claims arising from non-subordinated, unsecured non-structured debt instruments which

(i) are issued before 21 July 2018 and are neither deposits within the positions of no. 13 and 14 nor money market instruments

(ii) are issued from 21 July 2018 onwards, have an original contractual maturity of at least one year, do not qualify as deposits within the position of no. 13 and 14 and the contractual documentation and, where applicable, the prospectus explicitly refer to the lower ranking</td><td></td></tr>
<tr><td>12</td><td>General creditors' claims</td><td>Section 38 of the Insolvency Code in conjunction with Section 46f (5) of the Banking Act, including instruments covered by Section 46f (6) sentence 3 and 46f (7) of the Banking Act</td></tr>
<tr><td>13</td><td>Deposits not covered, but preferential</td><td>Section 46f (4) no. 2 of the Banking Act</td></tr>
<tr><td>14</td><td>Deposits covered and preferential</td><td>Section 46f (4) no. 1 of the Banking Act</td></tr>
<tr><td>15</td><td>Costs of proceeding and obligations binding on the estate</td><td>Sections 53 to 55 of the Insolvency Code</td></tr>
<tr><td>16</td><td>Claims subject to a right of separation in insolvency proceedings</td><td>Sections 49 to 51 of the Insolvency Code</td></tr>
<tr><td>17</td><td>Claims subject to a right of segregation in insolvency proceedings</td><td>Sections 47 and 48 of the Insolvency Code</td></tr>
</table>

Article 437 (1) (b-c) CRR - Main features of capital instruments

A description of the main features of the Common Equity Tier 1, Additional Tier 1 and Tier 2 capital instruments issued by Deutsche Bank is published on Deutsche Bank's website (db.com/ir/en/capital-instruments.htm). In addition, this website provides full terms and conditions of all Common Equity Tier 1, Additional Tier 1 and Tier 2 capital instruments.

Article 437 (1) (f) CRR - Capital ratios different to CRR

The own funds capital ratios provided for Deutsche Bank Group are built upon the CRR regulations.

Capital requirements

Article 438 (a) CRR - Summary of Deutsche Bank's ICAAP approach

Deutsche Bank's internal capital adequacy assessment process ("ICAAP") consists of several well established components which ensure that the Group maintains sufficient capital to cover the risks to which the bank is exposed on an ongoing basis:

– Risk identification and assessment: The risk identification process forms the basis of the ICAAP and results in an inventory of risks for the Group. All risks identified are assessed for their materiality. Further details can be found in our Annual Report 2020 under section "Risk identification and assessment" on page 69.

– Capital demand/risk measurement: Risk measurement methodologies and models are applied to quantify the regulatory and economic capital demand which is required to cover all material risks except for those which cannot be adequately limited by capital e.g. liquidity risk. Further details can be found in our Annual Report 2020 under sections "Risk profile" and "Capital, Leverage Ratio, TLAC and MREL" on page 111 and 127. Additionally, the following sections below on pages 36-39 in this report describe the risk measurement methodologies (economic capital models) applied by Deutsche Bank to quantify capital demand required to cover all material risks.

– Capital supply: Capital supply quantification refers to the definition of available capital resources to absorb unexpected losses quantified as part of the capital demand. Further details can be found in our Annual Report 2020 under sections "Capital, Leverage Ratio, TLAC and MREL" and "Economic Capital Adequacy" on page 111 and 121.

– Risk appetite: Deutsche Bank has established a set of qualitative statements, quantitative metrics and thresholds which express the level of risk that we are willing to assume to achieve our strategic objectives. Threshold breaches are subject to a dedicated governance framework triggering management actions aimed to safeguard capital adequacy. Further details can be found in our Annual Report 2020 under sections "Risk appetite and capacity" and "Key risk metrics" on page 62 and 54.
– Capital planning: The risk appetite thresholds for capital adequacy metrics constitute boundaries which have to be met in our strategic plan to safeguard capital adequacy on a forward-looking basis. Further details can be found in our Annual Report 2020 under section "Strategic and capital plan" on page 62.

– Stress testing: Capital plan figures are also considered under various stress test scenarios to prove resilience and overall viability of the bank. Regulatory and economic capital adequacy metrics are also subject to regular stress tests throughout the year to constantly evaluate Deutsche Bank's capital position in hypothetical stress scenarios and to detect vulnerabilities under stress. Further details can be found in our Annual Report 2020 under section "Stress testing" on page 64.

– Capital adequacy assessment: Although capital adequacy is constantly monitored throughout the year, the ICAAP concludes with a dedicated annual capital adequacy assessment (CAS). The assessment consists of a Management Board statement about Deutsche Bank's capital adequacy, which is linked to specific conclusions and management actions to be taken to safeguard capital adequacy on a forward-looking basis.

As part of its ICAAP, Deutsche Bank distinguishes between a normative and economic internal perspective. The normative internal perspective refers to a multi-year assessment of the ability to fulfil all capital-related legal requirements and supervisory demands on an ongoing basis under a baseline and adverse scenario. The economic internal perspective refers to an internal process aimed at capital adequacy using internal economic capital demand models and an internal economic capital supply definition. Both perspectives focus on maintaining the continuity of Deutsche Bank on an ongoing basis.

Credit risk economic capital model

We calculate economic capital for counterparty risk, transfer risk and settlement risk as elements of credit risk. In line with our economic capital framework, economic capital for credit risk is set at a level to absorb with a probability of 99.9 % very severe aggregate unexpected losses within one year.

Our economic capital for credit risk is derived from the loss distribution of a portfolio via Monte Carlo Simulation of correlated rating migrations. The portfolio loss distribution is calculated as follows: in a first step, potential credit losses are quantified on transactional level based on available exposure and loss-given-default information. In a second step, the probability of joint defaults is modeled stochastically in terms of risk factors representing the relevant countries and industries that the counterparties are linked to. The simulation of portfolio losses is then performed by an internally developed model, which takes rating migration and maturity effects into account. Effects due to wrong-way derivatives risk (i.e., the credit exposure of a derivative in the default case is higher than in non-default scenarios) are modeled by applying our own alpha factor when deriving the exposure at default for derivatives and securities financing transactions under the Basel 3 Internal Models Method ("IMM"). We allocate expected losses and economic capital derived from loss distributions down to transaction level to enable management on transaction, customer and business level.

Our asset value credit portfolio model is based on the assumption that an obligor firm defaults when its value is no longer high enough to cover its liabilities. The obligor's asset value or "ability to pay" is modeled as a random process, the Ability to Pay Process (APP). An obligor is taken to default when its asset value or ability to pay falls below a given default point. Changes in the value of systematic and specific factors are simulated in terms of multivariate distributions. The weight assigned to systematic and specific components and the covariance of systematic factors are estimated using equity and rating time series or are based on standard settings for particular portfolio segments.

Modeling correlations via a factor model: A factor model describes the dynamics of a large number of random variables by making use of a reduced and fixed number of other random variables, called factors. The approach has the advantage of reducing computing time: fewer correlations need to be evaluated, and the factor correlation matrix does not change when new obligors are introduced. The parameters that specify the factor model are:

– The factor model characteristics for the different borrowers, i.e., the weights for the systematic country and industry factors (our model uses 39 systematic factors) and the R^2, which determines the weight for the specific factor
– The covariance matrix between the country and industry factors

Modeling rating migration: The rating migration methodology requires additional information, namely yield curves and transition matrices describing the probabilities of migrating between different credit ratings.

– Migration matrix: For K non-default credit rating grades and 1 default credit rating, a migration matrix is a (K + 1) × (K + 1) matrix with entries π_{ij}. It expresses in percentage terms the probability π_{ij} that any borrower with the credit rating i moves to the credit rating j in the next time step.
– Risk-free curve: The risk-free curve required as an input for different points in time is used to derive the corresponding risk-free discount factors.

Economic capital is derived from Value-at-Risk (VaR) with confidence level α = 99.9 %. The economic capital is allocated to individual transactions using expected shortfall allocation. Portfolio information includes exposure, loss given default, one-year default probability and maturity. The parameters are consistent with the parameters used for the regulatory reporting, with the exception of those from the exposure for derivatives.

Market risk economic capital model

Economic capital for market risk measures the amount of capital needed to absorb very severe, unexpected losses arising from our exposures over the period of one year. "Very severe" in this context means that the underlying economic capital is set at a level which covers, with a probability of 99.9 %, all unexpected losses over a one year time horizon. Market Risk Economic Capital consists of the following three components:

– Traded Market Risk, capturing the risk due to valuation changes from market price movements
– Traded Default Risk, capturing the risk due to valuation changes caused by issuer default and migration risk
– Non-traded Market Risk, market risk arising outside of the core trading activities

Traded market risk economic capital ("TMR EC")

Our traded market risk economic capital model - scaled Stressed VaR based EC (SVaR based EC) - comprises two core components, the "common risk" component covering risk drivers across all businesses and the "business-specific risk" component, which enriches the Common Risk via a suite of Business Specific Stress Tests (BSSTs). Both components are calibrated to historically-observed severe market shocks.

Common risk is calculated using a scaled version of the SVaR framework. The SVaR based EC uses the Monte Carlo SVaR framework. The SVaR measure itself replicates the Value-at-Risk calculation that would be generated on the bank's current portfolio if the relevant market factors were experiencing a period of stress. In particular, the model inputs are calibrated to historical data from a continuous 12-month period of significant financial stress relevant to the bank's portfolio. The SVaR model is then scaled-up to cover a different liquidity horizon (up to 1 year) and confidence level (99.9 %). The liquidity horizon framework that is utilized in the SVaR based EC model accounts for different levels of market liquidity as well as risk concentrations in the bank's portfolios. In terms of coverage, the "common risk" captures outright linear and some non-linear risks (e.g. Gamma, Vega etc.) to systematic and idiosyncratic risk drivers. The model incorporates the following risk factors: interest rates, credit spreads, equity prices, foreign exchange rates, commodity prices, volatilities and correlations.

The “business-specific risk” captures more product/business-related bespoke risks (e.g. complex basis risks) as well as higher order risks (e.g. for equity options) not captured in the common risk component. The concept of business-specific risk is in particular important in areas where the lack of meaningful market data prevents direct use of the common risk model. BSSTs are in general calibrated to available historical data to obtain a stress scenario. Where appropriate, risk managers use their expert judgment to define severe market shocks, based upon the knowledge of past extreme market conditions. In addition to the BSSTs the business specific risk component of the SVaR based EC model also contains placeholders which carry an estimated EC component on a temporary basis, while efforts are being made to cover those risks with a proper business-specific stress test or integrate it in the common risk framework.

We also continuously assess and refine our market risk EC model to ensure the capture of new material risks as well as the appropriateness of the shocks applied. The calculation of the Traded Market Risk EC is performed weekly.

Traded default risk economic capital (“TDR EC”)

TDR refers to changes in the value of instruments caused by default or rating changes of the issuer. For credit derivatives like credit default swaps (CDS), the rating of the issuer of the reference asset is modeled. TDR covers the following positions:

– Fair value assets in the banking book;
– Unsecuritized credit products in the trading book;
– Securitized products in the trading book.

The TDR methodology is similar to the credit risk methodology. An important difference between the EC calculation for traded default risk and credit risk is the capital horizon of 6 months which is used for most TDR positions compared to 12 months used for credit risk. Recognizing traded default risk EC for unsecuritized credit products corresponds to the calculation of the incremental risk charge for the trading book for regulatory purposes. EC for TDR represents an estimate of the default and migration risks of credit products at a 99.9 % confidence level, taking into account the liquidity horizons of the respective sub-portfolios.

TDR EC captures the relevant credit exposures across our trading and fair value banking books. Trading book exposures are monitored by market risk management via single name concentration and portfolio thresholds which are set based upon rating, size and liquidity. Single name concentration risk thresholds are set for two key metrics: Default Exposure, i.e., the P&L impact of an instantaneous default at the current recovery rate (RR), and bond equivalent Market Value (MV), i.e. default exposure at 0 % recovery. In order to capture diversification and concentration effects we perform a joint calculation for traded default risk economic capital and credit risk economic capital. Important parameters for the calculation of traded default risk are exposures, recovery rates and default probabilities as well as maturities. For trading book positions exposures, recovery rates and default probabilities are derived from market information and external ratings and for banking book positions from internal assessments analogous to the credit risk economic capital model. Rating migrations are governed by issuer type specific migration matrices, which are obtained from historical rating time series from rating agencies and internal observations. The probability of joint rating downgrades and defaults is determined by the default and rating correlations of the portfolio model. These correlations are specified through systematic factors that represent countries, geographical regions and industries.

Non-traded market risk economic capital (“NTMR EC”)

Non-traded market risk arises from market movements, primarily outside the activities of our trading units, in our banking book and from off-balance sheet items. Significant market risk factors which the bank is exposed to and are overseen by risk management groups in that area are:

– Interest rate risk (including risk from embedded optionality and changes in behavioral patterns for relevant product types), credit spread risk, foreign exchange risk, equity risk (including investments in public and private equity as well as real estate, infrastructure and fund assets); and
– Market risks from off-balance sheet items such as pension schemes and guarantees as well as structural foreign exchange risk and equity compensation risk.

Non-traded market risk economic capital is being calculated either by applying the standard traded market risk EC methodology (SVaR based EC model) or through the use of non-traded market risk models that are specific to each risk class and which consider, among other factors, large historically observed market moves, the liquidity of each asset class, and changes in client’s behavior in relation to products with behavioral optionalities. The calculation of EC for non-traded market risk is performed monthly.

An independent model validation team reviews all quantitative aspects of our MR EC model on a regular basis. The review covers, but is not limited to, model assumptions and calibration approaches for risk parameters.

Operational risk economic capital model

For the quantification of economic capital requirements the Group uses the Advanced Measurement Approach ("AMA"). To absorb very severe unexpected losses within one year, both economic and regulatory capital are calculated at a 99.9 % percentile as described in chapter "Capital, Leverage Ratio, TLAC and MREL", section "Economic capital adequacy" in the 2020 Annual Report on page 121.

For detailed information on our Operational risk measurement approaches refer to our Pillar 3 report section "Article 446 CRR - Operational risk measurement" on page 163.

Business risk economic capital model

We measure economic capital for business risk, which includes strategic risk, tax risk and capital charges for the risk related to deferred tax assets on temporary differences and software assets.

The economic capital for strategic risk is based on a model that calculates the earnings distribution on Deutsche Bank group level. Important input parameters of the model are the expected revenues and costs from the strategic plan and monthly forecasts on business unit level. This ensures that the model includes strategic decisions or changes to the business environment in a timely manner. These projections determine the mean values of the revenue and cost distributions. The volatilities of the revenue distributions are derived from historical revenue time series of our business units. Risk concentrations within and across businesses are specified by revenue drivers for individual business units. The correlations of revenue drivers, e.g. market or macroeconomic factors, are calibrated with historical time series. Revenues are then simulated together with costs to allow for a partial offset of revenue decreases by cost reductions, e.g. reduced bonus payments. The resulting earnings distribution for the Group is used to derive the economic capital for strategic risk. Strategic risk economic capital is held to protect against potential operating losses covering a twelve months time-horizon with a confidence level of 99.9 %, in line with our general economic capital definition.

Tax risk is determined by reference to corporate income tax, indirect and operational tax re-determination risk with respect to transactions undertaken by the Bank. Tax re-determination risk is the risk that the eventual tax treatment of a transaction differs from that initially determined by the Bank because of a judicial determination or a compromise by the Bank with a tax authority. Examples of tax re-determination risk include a tax ceasing to be creditable, taxable income being treated as arising, a tax deduction not being granted, a tax consolidated group not being respected, or an anti-avoidance rule being determined to apply. Tax related inputs of the process are under the direction and control of tax professionals of the Bank who are independent of business units. The calculation of tax risk EC is performed in a portfolio model which incorporates issues with a one year time horizon. The notional exposure for each "tax issue" is determined and is then modified for reserves and a settlement adjustment. A probability is assigned to each "tax issue". Tax risk EC is computed at the 99.9 % confidence level of the portfolio loss distribution, which is obtained through Monte Carlo simulation.

The capital charges to account for the risk of deferred tax assets on temporary differences and software assets are incorporated through economic capital placeholders.

Risk type diversification

The risk type diversification benefit quantifies diversification effects between credit, market, operational and strategic risk in the economic capital calculation caused by non-perfect correlations between these risk types. The calculation of the risk type diversification benefit is intended to ensure that the standalone economic capital figures for the individual risk types are aggregated in an economically meaningful way. Please refer to section "Risk profile" on page 56 in our Annual Report 2020 for the diversification amount across credit risk, market risk, operational risk and business risk.

Stress testing

Deutsche Bank has implemented a stress test framework to satisfy internal as well as external stress test requirements. The internal stress tests are based on in-house developed methods and inform a variety of risk management use cases (risk type specific as well as cross risk). Internal stress tests form an integral part of our risk management framework complementing traditional risk measures. The cross-risk stress test framework, the Group Wide Stress Test Framework (GWST), serves a variety of bank management processes, in particular the strategic planning process, the ICAAP, the risk appetite framework and capital allocation. Capital plan stress testing is performed to assess the viability of our capital plan in adverse circumstances and to demonstrate a clear link between risk appetite, business strategy, capital plan and stress testing. The regulatory stress tests, e.g. the EBA stress test and the US-based CCAR (Comprehensive Capital Analysis and Review) stress tests, are strictly following the processes and methodologies as prescribed by the regulatory authorities.

Our internal stress tests are performed on a regular basis in order to assess the impact of a severe economic downturn as well as adverse bank-specific events on our risk profile and financial position. Our stress testing framework comprises regular sensitivity-based and scenario-based approaches addressing different severities and localizations. We include all material risk types into our stress testing activities. These activities are complemented by portfolio- and country-specific downside analysis as well as further regulatory requirements, such as annual reverse stress tests and additional stress tests requested by our regulators on group or legal entity level. Our methodologies undergo regular scrutiny from Deutsche Bank's internal validation team (Model Risk Management) whether they correctly capture the impact of a given stress scenario.

The initial phase of our cross-risk stress test (GWST) consists of defining a macroeconomic downturn scenario by ERM Risk Research in cooperation with business specialists. ERM Risk Research monitors the political and economic development around the world and maintains a macro-economic heat map that identifies potentially harmful scenarios. Based on quantitative models and expert judgments, economic parameters such as foreign exchange rates, interest rates, GDP growth or unemployment rates are set accordingly to reflect the impact on our business. The scenario parameters are translated into specific risk drivers by subject matter experts in the risk units. Based on our internal models framework for stress testing, the following major metrics are calculated under stress: risk-weighted assets, impacts on profit and loss and economic capital by risk type. These results are aggregated at the Group level, and key metrics such as the CET 1 ratio, ECA ratio, MREL ratio and Leverage Ratio under stress are derived. Stress impacts on the Liquidity Coverage Ratio (LCR) and the Liquidity Reserve are also considered. The time-horizon of internal stress tests is between one and five years, depending on the use case and scenario assumptions. The Enterprise Risk Committee (ERC) reviews the final stress results. After comparing these results against our defined risk appetite, the ERC also discusses specific mitigation actions to remediate the stress impact in alignment with the overall strategic and capital plan if certain limits are breached. The results also feed into the recovery planning which is crucial for the recoverability of the Bank in times of crisis. The outcome is presented to senior management up to the Management Board to raise awareness on the highest level as it provides key insights into specific business vulnerabilities and contributes to the overall risk profile assessment of the bank.

The group wide stress tests performed in 2020 indicated that the bank's capitalization together with available mitigation measures as defined in the Group Recovery Plan allow it to reach the internally set stress exit level.

The cross-risk reverse stress test leverages the GWST framework and is typically performed annually in order to challenge our business model by determining scenarios which would cause us to become unviable. Such a reverse stress test is based on a hypothetical macroeconomic scenario enriched by idiosyncratic events based on the top risks monitored by each risk type. Comparing such a hypothetical scenario resulting in the Bank's non-viability to the current economic environment, we consider the probability of occurrence of such a hypothetical stress scenario as extremely low. Given this, we do not believe that our business continuity is at risk.

In 2020, we have further strengthened our framework through the following initiatives:

– Roll out and implementation of 'Consensus' based macro forecasts for all use cases
– Link the stress testing platform with the capital application tool to better capture second order effects.

In addition to the GWST that includes all material risk types and major revenue streams for the use cases as indicated above, we have individual stress test programs in place for all relevant risk metrics in line with regulatory requirements. For the relevant stress test programs we refer to the sections describing the individual risk management methods.

Deutsche Bank also took part in the U.S.-based CCAR stress test, as implemented pursuant to the U.S. Dodd-Frank Act. The Federal Reserve (FRB) publicly disclosed that it did not object to the capital plans submitted by DB USA Corporation and DWS USA Corporation.

Article 438 (b) CRR - SREP requirements

The SREP requirements are described further below in this Report in section "Article 440 CCR - Capital buffers" on page 43 as well as in the Annual Report 2020 under chapter "Capital, Leverage Ratio, TLAC and MREL", section "Minimum capital requirements and additional capital buffers" on page 112.

Article 438 (c-f) CRR - Overview of capital requirements

The table below shows RWA and regulatory capital requirements broken down by risk types and model approaches compared to the previous quarter-end.

EU OV1 – Overview of RWA

			Dec 31, 2020		Sep 30, 2020	
			a1	b1	a2	b2
		in € m.	RWA	Minimum capital requirements	RWA	Minimum capital requirements
	1	Credit risk (excluding CCR)	173,012	13,841	174,189	13,935
		of which:				
Art 438(c)(d)	2	The standardized approach (SA)	17,149	1,372	15,566	1,245
Art 438(c)(d)	3	The foundation IRB (FIRB) approach	3,106	248	4,361	349
Art 438(c)(d)	4	The advanced IRB (AIRB) approach	145,053	11,604	147,671	11,814
Art 438(d)	5	Equity IRB under the simple risk-weighted approach or the IMA	7,704	616	6,590	527
Art 107 Art 438(c)(d)	6	Counterparty credit risk (CCR)	32,312	2,585	26,685	2,135
		of which:				
Art 438(c)(d)	7	Mark to market	3,088	247	2,826	226
Art 438(c)(d)	8	Original exposure	0	0	0	0
	9	The standardized approach	0	0	0	0
	9a	Financial collateral comprehensive method (for SFTs)	1,627	130	1,321	106
	10	Internal model method (IMM)	19,021	1,522	17,664	1,413
Art 438(c)(d)	11	Risk exposure amount for contributions to the default fund of a CCP	184	15	171	14
Art 438(c)(d)	12	Credit Valuation Adjustment (CVA)	8,392	671	4,704	376
Art 438(e)	13	Settlement risk	56	4	93	7
Art 449(o)(i)	14	Securitization exposures in the banking book (after the cap)	12,051	964	12,964	1,037
		of which:				
	15	IRB approach	7,337	587	8,132	651
		of which:				
	16	IRB supervisory formula approach (SFA)	0	0	0	0
	17	Internal assessment approach (IAA)	0	0	0	0
	18	Standardized approach	4,713	377	4,832	387
	19	Market risk	28,897	2,312	27,800	2,224
		of which:				
	20	Standardized approach	2,799	224	2,821	226
	21	IMA	26,098	2,088	24,978	1,998
Art 438(e)	22	Large exposures	0	0	0	0
Art 438(f)	23	Operational risk	68,899	5,512	69,564	5,565
		of which:				
	24	Basic indicator approach	0	0	0	0
	25	Standardized approach	0	0	0	0
	26	Advanced measurement approach	68,899	5,512	69,564	5,565
Art 437(2), 48,60	27	Amounts below the thresholds for deduction (subject to 250 % risk weight)	13,725	1,098	13,254	1,060
Art 500	28	Floor adjustment	0	0	0	0
	29	Total	**328,951**	**26,316**	324,548	25,964

Our RWA were € 329.0 billion as of December 31, 2020, compared to € 324.5 billion as of September 30, 2020. The increase of € 4.4 billion was mainly driven by RWA for counterparty credit risk (CCR) and market risk, the latter driven by increased VaR and IRC, partly offset by reduced SVaR. RWA for counterparty credit risk (CCR) increased by € 5.6 billion mainly due to increased client demand and mark-to-market movements. Additionally, RWA subject to a risk weight of 250% increased by € 0.5 billion stemming from increased deferred tax assets. These were partly offset by a credit risk RWA decrease of € 1.2 billion, which is mainly driven by FX movements and the decommissioning of our dilution risk model and offset by increased credit risk RWA for equity investments and software assets after a regulatory change of their RWA treatment. Furthermore, RWA for securitizations in the banking book reduced by € 0.9 billion over the quarter and is driven by the cancellation of one specific transaction. Lastly, our RWA for operational risk reduced by € 0.7 billion in the last quarter of 2020 and is mainly driven by lower internal loss frequencies.

The movements of RWA for the specific risk types are discussed further down in this report for credit risk in section “Article 438 (d) CRR - Development of credit risk RWA” on page 115, for counterparty credit risk in section “Article 438 (d) CRR - Development of CCR RWA” on page 151 and for market risk in section “Article 455 (e) CRR - Regulatory capital requirements for market risk“ on page 159.

Article 438 CRR - Specialized lending and equity exposures in the banking book

The table below summarizes our foundation approach exposure for specialized lending on an EAD basis. For the calculation of minimum capital requirements regulatory risk weights are applied where potential risk mitigating factors are already considered in the assignment of a risk weight to a specific structure. As part of our advanced IRBA we are using supervisory defined risk weights according to the simple risk weight approach for our equity positions. For all of these positions no credit risk mitigation techniques have been applied.

EU CR10 – IRB (specialized lending and equities)

	in € m. (unless stated otherwise)						Dec 31, 2020
	Specialized lending						
Regulatory categories	Remaining maturity	On-balance sheet amount	Off-balance sheet amount	Risk weight	Exposure amount	RWA	Expected losses
Category 1	Less than 2.5 years	114	45	50 %	147	74	0
	Equal to or more than 2.5 years	1,002	127	70 %	1,097	768	4
Category 2	Less than 2.5 years	42	55	70 %	82	58	0
	Equal to or more than 2.5 years	65	9	90 %	70	63	1
Category 3	Less than 2.5 years	1	0	115 %	1	2	0
	Equal to or more than 2.5 years	18	0	115 %	18	21	1
Category 4	Less than 2.5 years	0	0	250 %	0	0	0
	Equal to or more than 2.5 years	12	0	250 %	12	30	1
Category 5	Less than 2.5 years	2	0	–	2	0	1
	Equal to or more than 2.5 years	37	0	–	19	0	12
Total	Less than 2.5 years	159	99	–	233	133	1
	Equal to or more than 2.5 years	1,134	137	–	1,216	882	19

	Equities under the simple risk-weighted approach					
Categories	On-balance sheet amount	Off-balance sheet amount	Risk weight	Exposure amount	RWA	Capital requirements
Private equity exposures sufficiently diversified	1,127	0	190 %	1,127	2,142	171
Exchange-traded equity exposures	12	0	290 %	12	36	3
All other equity exposures	1,464	29	370 %	1,494	5,526	442
Total	2,604	29	–	2,633	7,704	616

	in € m. (unless stated otherwise)						Jun 30, 2020
	Specialized lending						
Regulatory categories	Remaining maturity	On-balance sheet amount	Off-balance sheet amount	Risk weight	Exposure amount	RWA	Expected losses
Category 1	Less than 2.5 years	151	56	50 %	193	96	0
	Equal to or more than 2.5 years	975	158	70 %	1,086	760	4
Category 2	Less than 2.5 years	74	82	70 %	136	95	1
	Equal to or more than 2.5 years	74	9	90 %	79	71	1
Category 3	Less than 2.5 years	1	0	115 %	1	1	0
	Equal to or more than 2.5 years	25	0	115 %	25	29	1
Category 4	Less than 2.5 years	0	0	250 %	0	0	0
	Equal to or more than 2.5 years	13	1	250 %	14	34	1
Category 5	Less than 2.5 years	4	0	–	4	0	2
	Equal to or more than 2.5 years	32	0	–	32	0	16
Total	Less than 2.5 years	230	138	–	333	192	3
	Equal to or more than 2.5 years	1,118	168	–	1,235	894	23

	Equities under the simple risk-weighted approach					
Categories	On-balance sheet amount	Off-balance sheet amount	Risk weight	Exposure amount	RWA	Capital requirements
Private equity exposures sufficiently diversified	1,047	0	190 %	1,047	1,989	159
Exchange-traded equity exposures	140	0	290 %	140	407	33
All other equity exposures	1,240	29	370 %	1,268	4,693	375
Total	2,427	29	–	2,455	7,088	567

Article 438 CRR - Other non-credit obligation assets in the banking book

The table below presents the exposures assigned to the exposure class “other non-credit obligation assets” as outlined in Article 156 CRR. We split the table into cash positions in accordance with Article 156 (a) CRR, which receive a risk weight of 0 % as well as other positions receiving a risk weight of 100 %. Additional credit risk mitigation techniques have not been applied.

Credit risk exposures of other non-credit obligation assets

		Dec 31, 2020		Jun 30, 2020	
in € m.	Risk Weight	EAD	RWA	EAD	RWA
Risk Position					
Other non-credit obligation assets - cash	0 %	2,383	0	2,401	0
Other non-credit obligation assets - other	100 %	8,069	8,069	6,115	6,115
Total	–	**10,452**	**8,069**	8,516	6,115

Our RWA for other non-credit obligation assets in the banking book were at € 8.1 billion as of December 31, 2020, compared to € 6.1 billion as of June 30, 2020. The increase of € 2.0 billion was predominantly driven by the changed treatment of prudently valued software assets introduced by “Regulation (EU) 2019/876” and “Regulation (EU) 2020/873”.

Article 441 CRR - Indicators of global systemic importance

Deutsche Bank continues to be designated as a global systemically important institution (G-SII) by the German Federal Financial Supervisory Authority (BaFin) in agreement with the Deutsche Bundesbank, resulting in a G-SII buffer requirement of 2.00 % CET 1 capital of RWA in 2020. This is in line with the FSB assessment of systemic importance based on the indicators as published in 2017. According to the recent FSB assessment based on the indicators as published in 2019, the G-SII buffer requirement for Deutsche Bank is reduced to 1.50 %, which will become effective from January 1, 2021. This assessment has been confirmed by the FSB in 2020. We will continue to publish our indicators on our website:

db.com/ir/en/regulatory-reporting.htm

Article 440 CRR - Capital buffers

Minimum capital requirements and additional capital buffers

The Pillar 1 CET 1 minimum capital requirement applicable to the Group is 4.50 % of risk-weighted assets (RWA). The Pillar 1 total capital requirement of 8.00 % demands further resources that may be met with up to 1.50 % Additional Tier 1 capital and up to 2.00 % Tier 2 capital.

Failure to meet minimum capital requirements can result in supervisory measures such as restrictions of profit distributions or limitations on certain businesses such as lending. We complied with the regulatory capital adequacy requirements in 2020.

In addition to these minimum capital requirements, the following combined capital buffer requirements were fully effective beginning 2020 onwards. The buffer requirements must be met in addition to the Pillar 1 minimum capital requirements, but can be drawn down in times of economic stress.

The capital conservation buffer is implemented in Section 10c German Banking Act, based on Article 129 CRD and equals a requirement of 2.50 % CET 1 capital of RWA in 2020 and onwards.

The countercyclical capital buffer is deployed in a jurisdiction when excess credit growth is associated with an increase in system-wide risk. It may vary between 0 % and 2.50 % CET 1 capital of RWA by 2020. In exceptional cases, it could also be higher than 2.50 %. The institution-specific countercyclical buffer that applies to Deutsche Bank is the weighted average of the countercyclical capital buffers that apply in the jurisdictions where our relevant credit exposures are located. As per December 31, 2020, the institution-specific countercyclical capital buffer was at 0.02 %.

In addition to the aforementioned buffers, national authorities, such as the BaFin, may require a systemic risk buffer to prevent and mitigate long-term non-cyclical systemic or macro-prudential risks that are not covered by the CRR. They can require an additional buffer of up to 5.00 % CET 1 capital of RWA. As of the year-end 2020, no systemic risk buffer applied to Deutsche Bank.

Deutsche Bank continues to be designated as a global systemically important institution (G-SII) by the German Federal Financial Supervisory Authority (BaFin) in agreement with the Deutsche Bundesbank, resulting in a G-SII buffer requirement of 2.00 % CET 1 capital of RWA in 2020. This is in line with the FSB assessment of systemic importance based on the indicators as published in 2017. According to the recent FSB assessment based on the indicators as published in 2019, the G-SII buffer requirement for Deutsche Bank is reduced to 1.50 %, which will become effective from January 1, 2021. This assessment has been confirmed by the FSB in 2020. We will continue to publish our indicators on our website.

Additionally, Deutsche Bank AG has been classified by BaFin in agreement with the Deutsche Bundesbank as an “other systemically important institution” (O-SII) with an additional capital buffer requirement of 2.00 % in 2020 that has to be met on a consolidated level. Unless certain exceptions apply, only the higher of the systemic risk buffer, G-SII buffer and O-SII buffer must be applied.

In addition, pursuant to the Pillar 2 Supervisory Review and Evaluation Process (SREP), the European Central Bank (ECB) may impose capital requirements on individual banks which are more stringent than statutory requirements (so-called Pillar 2 requirement).

On December 9, 2019, Deutsche Bank was informed by the ECB of its decision regarding prudential minimum capital requirements for 2020 that applied from January 1, 2020 onwards, following the results of the 2019 SREP. The decision acknowledges the progress Deutsche Bank has made since the first SREP assessment in 2016, leading to a decrease in the ECB’s Pillar 2 Requirement (P2R) from 2.75 % to 2.50 % CET 1 capital of RWA, effective as of January 1, 2020. As a result, Deutsche Bank was required to maintain a CET 1 ratio of at least 11.58 % on a consolidated basis. This CET 1 capital requirement comprised the Pillar 1 minimum capital requirement of 4.50 %, the lowered Pillar 2 requirement (SREP add-on) of 2.50 %, the capital conservation buffer of 2.50 %, the countercyclical buffer of 0.08 % as of January 1 2020 (subject to changes throughout the year) and the G-SII buffer of 2.00 %. Correspondingly, 2020 requirements for Deutsche Bank's Tier 1 capital ratio were at 13.08 % and for its total capital ratio at 15.08 %.

On March 12, 2020, the ECB announced various supervisory measures in reaction to the COVID-19 pandemic. Related to that, Deutsche Bank was informed by the ECB of its decision to implement Article 104a of the Directive (EU) 2019/878 of the European Parliament (CRDV) with effect from March 12, 2020. The decision requires Deutsche Bank to fulfill its unchanged 2.50 % Pillar 2 requirement (SREP add-on) with at least 56.25 % CET 1, 18.75 % Additional Tier 1 and 25 % Tier 2 capital. As of December 31, 2020, Deutsche Bank needs to maintain on a consolidated basis a CET 1 ratio of at least 10.42 %, a Tier 1 ratio of at least 12.39 % and a Total Capital ratio of at least 15.02 %. The CET 1 requirement comprises the Pillar 1 minimum capital requirement of 4.50 %, the Pillar 2 requirement (SREP add-on) of 1.41 %, the capital conservation buffer of 2.50 %, the countercyclical buffer (subject to changes throughout the year) of 0.02 % and the higher of our G-SII/O-SII buffer of 2.00 %. Correspondingly, the Tier 1 capital requirement includes additionally a Tier 1 minimum capital requirement of 1.50 % plus a Pillar 2 requirement of 0.47 %, and the Total Capital requirement includes further a Tier 2 minimum capital requirement of 2.00 % and a Pillar 2 requirement of 0.63 %. Also, the ECB communicated to Deutsche Bank that its individual expectation to hold a further Pillar 2 CET 1 capital add-on, commonly referred to as ‘Pillar 2 guidance’ will be seen as guidance only and until further notice a breach of this guidance will not trigger the need to provide a capital restoration plan or a need to execute measures to re-build CET 1 capital. The ECB has further communicated that once this period of financial distress is over, banks will be granted sufficient time to build up the buffers again.

In December 2020 the ECB informed Deutsche Bank that these capital requirements will remain unchanged in 2021 with no update of requirements as part of the 2020 SREP, for which, in light of the COVID-19 pandemic and the unique economic and financial situation it has generated, and in line with the European Banking Authority’s (EBA’s) statement of 22 April 2020, the ECB has adopted a “pragmatic approach”, based on which in principle no new decisions are issued in the 2020 cycle with the 2019 SREP decisions continuing to apply, amended by the above mentioned additional supervisory measures announced on March 12, 2020.

It should be noted that the Financial Stability Board has announced in 2019 that our G-SII buffer will be reduced to 1.5 % starting January 1, 2021. This does not change the capital requirements as the O-SII buffer remains at 2.0 % as the higher of the G-SII, O-SII, and systemic risk buffer.

The following table gives an overview of the different Pillar 1 and Pillar 2 minimum capital requirements (but excluding the Pillar 2 guidance) as well as capital buffer requirements applicable to Deutsche Bank for years 2020 and 2021:

Overview total capital requirements and capital buffers

	2020	2021
Pillar 1		
Minimum CET 1 requirement	4.50 %	4.50 %
Combined buffer requirement	4.52 %	4.52 %
Capital Conservation Buffer	2.50 %	2.50 %
Countercyclical Buffer	0.02 %	0.02 %
Maximum of:	2.00 %	2.00 %
G-SII Buffer	2.00 %	1.50 %
O-SII Buffer	2.00 %	2.00 %
Systemic Risk Buffer	0.00 %	0.00 %
Pillar 2		
Pillar 2 SREP Add-on of CET 1 capital	2.50 %	2.50 %
of which covered by CET 1 capital	1.41 %	1.41 %
of which covered by Tier 1 capital	1.88 %	1.88 %
of which covered by Tier 2 capital	0.63 %	0.63 %
Total CET 1 requirement from Pillar 1 and 2[3]	10.42 %	10.42 %
Total Tier 1 requirement from Pillar 1 and 2	12.39 %	12.39 %
Total capital requirement from Pillar 1 and 2	15.02 %	15.02 %

1 Deutsche Bank's countercyclical buffer requirement is subject to country-specific buffer rates decreed by EBA and the Basel Committee of Banking Supervision (BCBS) as well as Deutsche Bank's relevant credit exposures as per respective reporting date. The countercyclical buffer rate for 2021 has been assumed to be 0.02 % as per beginning of the year 2021. The countercyclical buffer is subject to changes throughout the year depending on its constituents.
2 The systemic risk buffer has been assumed to remain at 0 % for the projected year 2021, subject to changes based on further directives.
3 The total Pillar 1 and Pillar 2 CET 1 requirement (excluding the "Pillar 2" guidance) is calculated as the sum of the SREP requirement, the higher of the G-SII, O-SII and systemic risk buffer requirement as well as the countercyclical buffer requirement.

Article 440 (a) CRR - Geographical distribution of credit exposures

The following tables disclose the amount of the institution's specific countercyclical buffer as well as the geographical distribution of credit exposures relevant for its calculation in the standard format as set out in Commission Delegated Regulation (EU) 2015/1555. The geographical split table shows countries on an individual basis if they impose a countercyclical capital buffer rate or their total own funds requirements exceed € 20 million. The values for the remaining countries are shown as Other.

Countercyclical capital buffer rates are determined by Basel Committee member jurisdictions. Countercyclical capital buffer varies according to a percentage of risk weighted assets. The "General credit exposures" include only credit exposures to the private sector. Exposures to the public sector and to institutions are not in scope. The "Trading book exposures" contain market risk standardized approach non-securitization and trading book securitization positions as well as the IRC ("Incremental Risk Charge").

Geographical distribution of credit exposures relevant for the calculation of the countercyclical capital buffer

Dec 31, 2020

	General credit exposures		Relevant credit exposures – Market risk			
in € m.	Exposure value for SA	Exposure value for IRB	Sum of long and short positions of trading book exposures for SA	Value of trading book exposures for Internal models	Securitisation exposures Exposure value for non-trading book	Total exposure value
Australia	123	3,458	484	0	2,159	6,224
Austria	5	1,279	0	0	0	1,284
Belgium	93	1,904	0	0	0	1,996
Bermuda	18	916	3	1,018	171	2,126
Brazil	15	901	0	2,037	0	2,953
British Virgin Islands	49	6,922	0	15	0	6,986
Bulgaria	0	17	0	0	0	17
Canada	123	1,363	0	1,948	493	3,927
Cayman Islands	140	4,186	21	648	1,521	6,517
China	54	5,263	0	10,202	0	15,519
Czech Republic	1	153	0	166	0	320
Denmark	41	1,176	0	848	0	2,065
France	131	6,798	7	0	570	7,506
Germany	7,209	262,308	3	21,032	3,866	294,419
Hong Kong	44	3,373	0	1,069	0	4,487
India	2,066	6,347	0	10,368	86	18,867
Indonesia	52	1,144	0	0	0	1,196
Ireland	320	5,933	70	0	3,158	9,482
Israel	2	529	0	5,070	0	5,601
Italy (incl. San Marino)	1,509	24,359	11	0	199	26,078
Ivory Coast	0	303	0	506	0	809
Japan	108	2,717	0	0	125	2,951
Jersey	163	1,645	0	0	374	2,182
Luxembourg	4,569	9,975	0	0	3,704	18,249
Malaysia	8	626	0	8,438	0	9,072
Mexico	2	1,089	0	0	0	1,091
Netherlands	747	15,458	37	551	608	17,401
Norway	130	784	0	1,116	0	2,029
Pakistan	4	236	0	9	0	248
Poland	12	2,708	0	0	0	2,721
Portugal	89	448	5	1,296	108	1,946
Russian Federation	4	661	0	0	0	665
Saudi Arabia	14	1,541	0	0	0	1,556
Singapore	238	5,810	0	5,879	20	11,947
Slovakia	0	79	0	0	0	79
South Korea	73	3,684	0	12,071	0	15,827
Spain	224	19,225	60	0	121	19,631
Sri Lanka	1	146	0	593	0	740
Sweden	0	1,625	0	1,749	0	3,374
Switzerland	51	11,094	0	2,069	0	13,214
Taiwan	6	1,024	0	1,248	0	2,278
Thailand	0	1,170	0	2,555	0	3,724
Turkey	9	789	0	6	0	804
United Arab Emirates	32	1,442	0	214	0	1,688
United Kingdom	343	14,795	27	11,835	925	27,925
United States of America (incl. Puerto Rico)	1,317	105,080	1,318	19,892	38,868	166,476
Vietnam	4	595	0	241	0	840
Other	344	8,552	458	9,154	3,055	21,563
Total	20,489	551,628	2,505	133,844	60,132	768,598

	Own funds requirements						Dec 31, 2020
in € m.	Relevant credit risk exposures - Credit risk	Relevant credit exposures – Market risk	Relevant credit exposures – Securitisation positions in the non-trading book	Total	Risk-weighted exposure amounts	Own fund requirements weights (%)	Countercyclical buffer rate (%)
Australia	103	31	36	170	2,120.75	0.01	0.00
Austria	36	2	0	38	471.50	0.00	0.00
Belgium	50	9	0	59	737.38	0.00	0.00
Bermuda	41	4	2	47	586.18	0.00	0.00
Brazil	33	10	0	43	531.26	0.00	0.00
British Virgin Islands	58	0	0	58	721.09	0.00	0.00
Bulgaria	0	0	0	0	4.37	0.00	0.50
Canada	46	0	6	52	647.13	0.00	0.00
Cayman Islands	142	9	29	180	2,249.87	0.01	0.00
China	249	41	0	290	3,624.65	0.02	0.00
Czech Republic	5	1	0	6	74.93	0.00	0.50
Denmark	50	3	0	53	665.35	0.00	0.00
France	213	1	6	220	2,750.65	0.01	0.00
Germany	7,036	14	74	7,123	89,041.60	0.40	0.00
Hong Kong	97	2	0	99	1,234.75	0.01	1.00
India	305	87	5	398	4,974.96	0.02	0.00
Indonesia	40	0	0	40	496.67	0.00	0.00
Ireland	170	7	112	289	3,618.20	0.02	0.00
Israel	21	7	0	28	350.16	0.00	0.00
Italy (incl. San Marino)	1,118	5	6	1,128	14,106.18	0.06	0.00
Ivory Coast	22	0	0	22	273.29	0.00	0.00
Japan	86	10	2	98	1,220.51	0.01	0.00
Jersey	76	0	8	84	1,046.97	0.00	0.00
Luxembourg	618	11	63	693	8,658.11	0.04	0.25
Malaysia	20	124	0	144	1,802.21	0.01	0.00
Mexico	42	1	0	43	536.42	0.00	0.00
Netherlands	475	1	14	490	6,122.13	0.03	0.00
Norway	31	3	0	34	430.13	0.00	1.00
Pakistan	46	0	0	46	576.61	0.00	0.00
Poland	49	0	0	49	609.12	0.00	0.00
Portugal	14	92	1	107	1,333.31	0.01	0.00
Russian Federation	35	0	0	36	448.54	0.00	0.00
Saudi Arabia	21	0	0	21	258.70	0.00	0.00
Singapore	142	3	20	165	2,057.35	0.01	0.00
Slovakia	3	0	0	3	31.79	0.00	1.00
South Korea	51	6	0	58	722.62	0.00	0.00
Spain	589	2	2	593	7,408.45	0.03	0.00
Sri Lanka	9	12	0	21	266.65	0.00	0.00
Sweden	62	0	0	62	781.07	0.00	0.00
Switzerland	200	3	0	204	2,545.53	0.01	0.00
Taiwan	27	1	0	28	344.95	0.00	0.00
Thailand	42	8	0	50	620.42	0.00	0.00
Turkey	41	8	0	49	611.63	0.00	0.00
United Arab Emirates	41	1	0	42	522.50	0.00	0.00
United Kingdom	452	84	15	551	6,881.94	0.03	0.00
United States of America (incl. Puerto Rico)	2,415	140	514	3,069	38,362.50	0.17	0.00
Vietnam	31	1	0	32	400.35	0.00	0.00
Other	338	101	50	489	6,110.59	0.03	0.00
Total	15,790	846	964	17,599	219,992.02	1.00	0.02

Jun 30, 2020

	General credit exposures		Relevant credit exposures – Market risk			
in € m.	Exposure value for SA	Exposure value for IRB	Sum of long and short positions of trading book exposures for SA	Value of trading book exposures for Internal models	Securitisation exposures Exposure value for non-trading book	Total exposure value
Angola	0	0	0	0	0	0
Argentina	1	220	0	0	0	221
Australia	132	3,219	422	0	2,233	6,007
Austria	2	1,686	0	0	0	1,688
Belgium	94	1,802	0	0	0	1,896
Bermuda	140	1,092	0	0	312	1,544
Brazil	26	848	0	0	0	874
British Virgin Islands	29	9,373	0	0	0	9,402
Canada	130	1,730	0	0	560	2,420
Cayman Islands	219	5,129	20	0	1,749	7,117
China	16	5,352	0	0	0	5,368
Czech Republic	1	186	0	0	0	187
Denmark	41	1,049	0	0	0	1,090
Finland	0	0	0	0	0	0
France	154	8,369	2	0	475	9,000
Germany	8,295	255,811	4	0	4,220	268,329
Hong Kong	41	4,704	0	0	0	4,745
Iceland	0	0	0	0	0	0
India	2,127	7,025	0	0	89	9,241
Indonesia	66	1,326	0	0	0	1,391
Ireland	276	7,003	26	0	3,174	10,479
Israel	0	0	0	0	0	0
Italy (incl. San Marino)	1,149	24,775	7	0	166	26,097
Japan	126	4,117	0	0	130	4,373
Jersey	90	1,496	0	0	370	1,956
Lebanon	0	0	0	0	0	0
Lithuania	0	0	0	0	0	0
Luxembourg	2,497	12,591	0	0	3,674	18,761
Malaysia	0	0	0	0	0	0
Mauritius	0	0	0	0	0	0
Mexico	7	1,629	0	0	0	1,637
Netherlands	649	14,973	67	0	745	16,434
Norway	11	1,657	0	0	0	1,668
Pakistan	2	203	0	0	0	204
Philippines	0	0	0	0	0	0
Poland	24	2,828	0	0	0	2,852
Portugal	0	0	0	0	0	0
Russian Federation	4	889	0	0	0	893
Saudi Arabia	91	2,974	0	0	0	3,066
Singapore	152	7,857	0	0	17	8,027
Slovakia	0	88	0	0	0	88
South Africa	0	0	0	0	0	0
South Korea	7	3,720	0	0	0	3,727
Spain	315	20,123	26	0	147	20,611
Sweden	0	1,514	0	0	0	1,514
Switzerland	45	10,877	0	0	0	10,923
Taiwan	5	1,093	0	0	0	1,098
Thailand	1	1,186	0	0	0	1,187
Turkey	38	608	0	0	0	646
United Arab Emirates	32	2,217	0	0	0	2,249
United Kingdom	421	17,380	27	0	1,756	19,584
United States of America (incl. Puerto Rico)	1,170	97,928	2,307	0	47,173	148,578
Vietnam	3	650	0	0	0	653
Other	444	11,805	494	8,857	3,281	24,881
Total	19,076	562,170	3,401	8,857	70,274	663,778

Jun 30, 2020

in € m.	Own funds requirements						
	Relevant credit risk exposures - Credit risk	Relevant credit exposures – Market risk	Relevant credit exposures – Securitisation positions in the non-trading book	Total	Risk-weighted exposure amounts	Own fund requirements weights (%)	Countercyclical buffer rate (%)
Angola	0	0	0	0	0.00	0.00	0.00
Argentina	28	0	0	28	348.19	0.00	0.00
Australia	91	31	69	192	2,396.49	0.01	0.00
Austria	45	0	0	45	565.38	0.00	0.00
Belgium	49	0	0	49	607.67	0.00	0.00
Bermuda	50	0	5	55	682.58	0.00	0.00
Brazil	36	0	0	36	455.34	0.00	0.00
British Virgin Islands	83	0	0	83	1,043.12	0.01	0.00
Canada	53	0	8	61	763.13	0.00	0.00
Cayman Islands	200	4	34	238	2,972.36	0.01	0.00
China	250	0	1	250	3,130.16	0.02	0.00
Czech Republic	6	0	0	6	76.57	0.00	1.00
Denmark	42	0	0	42	530.91	0.00	0.00
Finland	0	0	0	0	0.00	0.00	0.00
France	231	0	6	237	2,963.33	0.01	0.00
Germany	5,947	0	71	6,018	75,228.28	0.36	0.00
Hong Kong	110	0	0	110	1,380.61	0.01	1.00
Iceland	0	0	0	0	0.00	0.00	0.00
India	311	0	6	318	3,969.52	0.02	0.00
Indonesia	50	0	0	50	630.57	0.00	0.00
Ireland	191	1	127	319	3,981.34	0.02	0.00
Israel	0	0	0	0	0.00	0.00	0.00
Italy (incl. San Marino)	1,141	0	8	1,150	14,371.72	0.07	0.00
Japan	97	0	3	100	1,249.81	0.01	0.00
Jersey	79	0	9	88	1,098.81	0.01	0.00
Lebanon	0	0	0	0	0.00	0.00	0.00
Lithuania	0	0	0	0	0.00	0.00	0.00
Luxembourg	554	0	57	611	7,631.39	0.04	0.25
Malaysia	0	0	0	0	0.00	0.00	0.00
Mauritius	0	0	0	0	0.00	0.00	0.00
Mexico	43	0	1	43	541.00	0.00	0.00
Netherlands	512	2	19	533	6,663.31	0.03	0.00
Norway	34	0	0	34	428.18	0.00	1.00
Pakistan	30	0	0	30	375.83	0.00	0.00
Philippines	0	0	0	0	0.00	0.00	0.00
Poland	48	0	0	48	595.81	0.00	0.00
Portugal	0	0	0	0	0.00	0.00	0.00
Russian Federation	46	0	0	46	570.36	0.00	0.00
Saudi Arabia	32	0	0	32	397.59	0.00	0.00
Singapore	137	0	17	154	1,928.39	0.01	0.00
Slovakia	3	0	0	3	31.39	0.00	1.50
South Africa	0	0	0	0	0.00	0.00	0.00
South Korea	56	0	0	56	698.55	0.00	0.00
Spain	614	2	8	624	7,801.45	0.04	0.00
Sweden	60	0	0	60	748.28	0.00	0.00
Switzerland	187	0	0	188	2,344.96	0.01	0.00
Taiwan	26	0	0	26	325.97	0.00	0.00
Thailand	30	0	0	30	371.81	0.00	0.00
Turkey	41	0	0	41	510.96	0.00	0.00
United Arab Emirates	60	0	0	60	748.01	0.00	0.00
United Kingdom	436	2	30	468	5,855.87	0.03	0.00
United States of America (incl. Puerto Rico)	2,268	89	599	2,956	36,948.78	0.18	0.00
Vietnam	39	0	0	39	484.46	0.00	0.00
Other	370	512	56	938	11,729.32	0.06	0.00
Total	14,770	644	1,134	16,548	206,850.44	1.00	0.02

Article 440 (b) CRR - Institution specific countercyclical capital buffer

The following table shows an overview of our institution specific countercyclical exposure and buffer requirements.

Institution-specific countercyclical capital buffer

	Dec 31, 2020	Jun 30, 2020
Total risk exposure amount (in € m.)	328,951	330,879
Institution specific countercyclical buffer rate	0.02 %	0.02 %
Institution specific countercyclical buffer requirement (in € m.)	58	61

Credit risk and credit risk mitigation

General qualitative information on credit risk

Article 442 (a) CRR - Definitions of past due and impairment

Exposures are considered to be past due if contractually agreed payments of principal and/or interest remain unpaid by the borrower, except if those are acquired through consolidation. The latter are considered to be past due if payments of principal and/or interest, which were expected at a certain payment date at the time of the initial consolidation of the loans, are unpaid by the borrower.

The Group has aligned its definition of “credit impaired” under IFRS 9 to the default definition as per Art. 178 of the Capital Requirements Regulation (CRR) for regulatory purposes. As a consequence, credit impaired financial assets (or Stage 3 financial assets) consist of two types of defaulted financial assets: firstly financial assets, where the Group expects an impairment loss and the amount is reflected in the allowance for credit losses and secondly financial assets, where the group does not expect an impairment loss (e.g., due to high quality collateral or sufficient expected future cash flows following thorough due diligence).

Article 442 (b) CRR - Credit risk adjustments

The determination of impairment losses and allowance is based on the expected credit loss model under IFRS 9, where allowances for loan losses are recorded upon initial recognition of the financial asset, based on expectations of potential credit losses at the time of initial recognition.

For a detailed description of the Group’s accounting policies and risk management practices, please refer to Note 1, “Significant accounting policies and critical accounting estimates“ to the consolidated financial statements and chapter “Credit risk management and asset quality” in our Annual Report 2020 on page 240 and 69.

General quantitative information on credit risk

Article 442 (c) CRR - Total and average amount of credit exposure by exposure classes

The table EU CRB-B below shows the total and average net credit risk exposures based on IFRS accounting values according to the regulatory scope of consolidation. For on-balance sheet items the "Net value of exposure" is calculated by deducting credit risk adjustments from the gross amount and for off-balance sheet exposures respective provisions have been deducted. Hence, credit risk exposures values are shown after accounting offsets but before credit risk mitigation. The breakout into the exposure classes follows those as defined for the IRBA (i.e., combining the advanced and foundation IRB) as well as for the standardized approach. In the IRB approach, the line item “Central governments and central banks” includes exposures to regional governments or local authorities, public sector entities, multilateral developments banks and international organizations. The exposure class “Other items” within the standardized approach includes all exposures not covered in the other categories. The average credit exposure is calculated as on December 31, 2020 taking the averages of all four quarters of the fiscal year.

EU CRB-B – Total and average net amount of exposures

		Dec 31, 2020		Dec 31, 2019	
		a	b	a	b
	in € m.	Net exposure at the end of the period	Average net exposure over the period	Net exposure at the end of the period	Average net exposure over the period
1	Central governments and central banks	109,389	105,519	118,380	122,333
2	Institutions	20,552	21,982	22,251	24,614
3	Corporates	404,348	408,245	408,300	399,152
	of which:				
5	SMEs	23,622	22,941	22,881	20,302
4	Specialized lending	42,722	46,087	44,410	41,799
4a	Other	338,004	339,217	341,009	337,051
6	Retail	230,595	227,722	222,813	220,709
	of which:				
8	Secured by real estate property SMEs	9,004	9,071	9,103	9,221
9	Secured by real estate property non-SMEs	168,926	165,806	160,644	158,710
10	Qualifying revolving	15,498	15,658	15,971	16,182
12	Other retail SMEs	6,163	5,984	5,705	5,737
13	Other retail non-SMEs	31,004	31,203	31,390	30,860
14	Equity	2,636	2,361	2,163	2,136
14a	Other non-credit obligation asset	12,176	11,021	9,429	9,684
15	Total IRB approach	**779,695**	**776,849**	783,336	778,628
16	Central governments or central banks	121,065	106,828	71,838	88,169
17	Regional governments or local authorities	6,297	6,929	8,047	8,831
18	Public sector entities	2,158	3,838	6,953	7,162
19	Multilateral development banks	1,380	1,890	3,738	3,941
20	International organizations	785	1,126	2,149	2,198
21	Institutions	1,481	1,454	2,648	2,588
22	Corporates	16,482	17,623	14,702	17,560
24	Retail	3,296	3,220	3,776	4,203
26	Secured by mortgages on immovable property	4,434	4,587	4,596	4,788
28	Exposures in default[1]	1,000	1,027	989	969
29	Items associated with particularly high risk	154	219	317	349
30	Covered bonds	0	0	0	0
31	Claims on institutions and corporates with a short-term credit assessment	0	22	0	0
32	Collective investments undertakings (CIU)	0	0	0	0
33	Equity exposures	0	35	49	48
34	Other items	2	2	3	15
35	Total standardized approach	**157,535**	**147,773**	118,816	139,852
36	Total	**937,230**	**924,622**	902,152	918,480

[1] In light of EBA guidance (Q&A 2017_3481) we present the defaulted exposure within the standardized approach as a total in row 28 but also show a breakdown of defaulted exposure and assign it to their respective exposure classes. In order to avoid double counting of exposures, the total exposure of the standardized approach as presented in row 35 does not take into account figures disclosed under row 28.

Article 442 (d) CRR - Geographic distribution of credit exposure

The table EU CRB-C below shows exposures broken down by significant geographical areas and exposure classes. For on-balance sheet items the "Net value of exposure" is calculated by deducting credit risk adjustments from the gross amount and for off-balance sheet exposures respective provisions have been deducted. Hence, credit risk exposures values are shown after accounting offsets but before credit risk mitigation. They are based on IFRS accounting values according to the regulatory scope of consolidation.

We consider a country as being significant, if it contributes to an aggregate of 90 % of our total exposure. An area is considered significant if it contains at least one significant country. The geographical distribution is based on the legal domicile of the counterparty or issuer. Exposures to geographical areas or countries that are not deemed significant are aggregated and reported in the residual column ‘other geographical areas’ or (within each significant area) ‘other countries’.

The breakdown into the exposure classes follows those as defined for the IRBA (i.e., combining the advanced and foundation IRB) as well as for the standardized approach. In the IRB approach, the line item “Central governments and central banks” includes exposures to regional governments or local authorities, public sector entities, multilateral developments banks and international organizations. The exposure class “Other items” within the standardized approach includes all exposures not covered in the other categories.

EU CRB-C – Geographical breakdown of exposures

								Dec 31, 2020
		a	b	c	d	e	f	g
			Europe					
	in € m.	Europe	Germany	United Kingdom	France	Luxembourg	Italy	Netherlands
1	Central governments and central banks	11,360	4,719	0	0	0	1	1,304
2	Institutions	7,298	1,278	575	1,233	449	236	454
3	Corporates	216,506	94,127	15,529	11,169	11,572	12,121	20,620
	of which:							
3a	SMEs	20,605	14,391	505	282	420	2,720	490
3b	Specialized lending	17,243	2,784	573	1,485	4,212	818	1,615
3c	Other	178,659	76,952	14,451	9,402	6,940	8,583	18,515
4	Retail	230,048	201,740	155	149	66	14,999	106
	of which:							
4a	Secured by real estate property SMEs	8,998	8,694	1	1	8	190	2
4b	Secured by real estate property non-SMEs	168,605	152,794	79	59	52	6,239	87
4c	Qualifying revolving	15,455	15,339	6	12	1	35	5
4d	Other retail SMEs	6,129	3,531	7	8	0	1,149	5
4e	Other retail non-SMEs	30,861	21,382	63	69	5	7,385	7
5	Equity	1,724	909	235	2	327	121	1
5a	Other non-credit obligation asset	9,319	8,883	94	18	43	0	19
6	Total IRB approach	476,256	311,656	16,587	12,572	12,457	27,477	22,503
7	Central governments or central banks	121,038	87,195	8,323	4,897	4,172	2,946	682
8	Regional governments or local authorities	6,283	6,158	0	0	0	0	0
9	Public sector entities	2,135	2,133	0	0	0	0	0
10	Multilateral development banks	1,380	0	0	107	1,273	0	0
11	International organizations	645	0	0	0	0	0	0
12	Institutions	1,456	1,355	1	3	23	40	0
13	Corporates	12,141	8,463	314	67	1,406	662	749
14	Retail	2,862	929	3	6	28	1,593	37
15	Secured by mortgages on immovable property	2,594	430	3	25	1,352	284	323
16	Exposures in default[1]	743	334	1	0	96	160	33
17	Items associated with particularly high risk	150	0	0	0	0	146	0
18	Covered bonds	0	0	0	0	0	0	0
19	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	0	0
20	Collective investments undertakings (CIU)	0	0	0	0	0	0	0
21	Equity exposures	0	0	0	0	0	0	0
22	Other items	1	1	0	0	0	0	0
23	Total standardized approach	150,683	106,664	8,644	5,105	8,254	5,671	1,791
24	Total	626,938	418,321	25,231	17,677	20,710	33,148	24,295

								Dec 31, 2020
		h	i	j	k	l	m	n
							Europe	
	in € m.	Spain	Ireland	Switzerland	Poland	Belgium	Other Europe	North America
1	Central governments and central banks	2	132	3,621	0	12	1,569	73,003
2	Institutions	227	110	391	1	1,185	1,160	4,522
3	Corporates	12,127	4,899	14,853	1,075	2,747	15,666	137,577
	of which:							
3a	SMEs	1,330	144	78	49	46	148	1,766
3b	Specialized lending	1,045	1,672	108	172	351	2,407	22,284
3c	Other	9,753	3,083	14,667	854	2,350	13,112	113,527
4	Retail	10,333	20	239	1,950	44	246	89
	of which:							
4a	Secured by real estate property SMEs	92	0	4	1	1	4	1
4b	Secured by real estate property non-SMEs	7,003	17	181	1,924	27	143	59
4c	Qualifying revolving	5	0	19	3	5	25	8
4d	Other retail SMEs	1,393	1	4	7	3	20	15
4e	Other retail non-SMEs	1,840	1	31	15	8	53	6
5	Equity	8	0	61	0	17	45	770
5a	Other non-credit obligation asset	92	56	42	10	62	0	1,530
6	Total IRB approach	22,789	5,217	19,207	3,036	4,067	18,686	217,490
7	Central governments or central banks	4,743	0	0	2,203	2,251	3,625	0
8	Regional governments or local authorities	124	0	0	0	0	0	14
9	Public sector entities	2	0	0	0	0	0	3
10	Multilateral development banks	0	0	0	0	0	0	0
11	International organizations	0	0	0	0	645	0	0
12	Institutions	0	8	5	1	1	19	16
13	Corporates	50	285	30	15	100	0	3,058
14	Retail	55	0	5	0	204	2	3
15	Secured by mortgages on immovable property	87	8	29	0	53	0	115
16	Exposures in default[1]	10	84	3	0	4	18	76
17	Items associated with particularly high risk	4	0	0	0	0	0	0
18	Covered bonds	0	0	0	0	0	0	0
19	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	0	0
20	Collective investments undertakings (CIU)	0	0	0	0	0	0	0
21	Equity exposures	0	0	0	0	0	0	0
22	Other items	0	0	0	0	0	0	1
23	Total standardized approach	5,065	300	69	2,219	3,253	3,645	3,211
24	Total	27,855	5,518	19,277	5,256	7,320	22,332	220,701

								Dec 31, 2020
		o	p	q	r	s	t	u
					North America			Asia/Pacific
	in € m.	U.S.	Cayman Islands	Canada	Other North America	Asia/Pacific	Japan	Australia
1	Central governments and central banks	72,865	0	133	5	21,878	8,233	1,356
2	Institutions	3,618	0	905	0	7,847	151	473
3	Corporates	122,358	4,714	2,251	8,253	44,196	2,333	3,226
	of which:							
3a	SMEs	1,743	0	1	22	948	4	16
3b	Specialized lending	21,954	94	3	233	2,904	447	626
3c	Other	98,662	4,621	2,247	7,997	40,344	1,883	2,584
4	Retail	80	0	8	1	294	7	10
	of which:							
4a	Secured by real estate property SMEs	1	0	0	0	4	0	1
4b	Secured by real estate property non-SMEs	54	0	4	0	149	5	6
4c	Qualifying revolving	7	0	1	0	24	1	1
4d	Other retail SMEs	13	0	2	0	10	0	1
4e	Other retail non-SMEs	5	0	1	1	107	0	1
5	Equity	748	21	0	0	141	3	1
5a	Other non-credit obligation asset	1,526	4	0	0	1,318	80	48
6	Total IRB approach	201,196	4,740	3,297	8,258	75,673	10,808	5,115
7	Central governments or central banks	0	0	0	0	0	0	0
8	Regional governments or local authorities	14	0	0	0	0	0	0
9	Public sector entities	3	0	0	0	20	0	0
10	Multilateral development banks	0	0	0	0	0	0	0
11	International organizations	0	0	0	0	0	0	0
12	Institutions	16	0	0	0	9	0	0
13	Corporates	1,881	703	118	356	1,093	77	42
14	Retail	3	0	0	0	430	0	0
15	Secured by mortgages on immovable property	113	0	2	0	1,725	0	0
16	Exposures in default[1]	0	0	76	0	181	152	18
17	Items associated with particularly high risk	0	0	0	0	3	0	0
18	Covered bonds	0	0	0	0	0	0	0
19	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	0	0
20	Collective investments undertakings (CIU)	0	0	0	0	0	0	0
21	Equity exposures	0	0	0	0	0	0	0
22	Other items	1	0	0	0	0	0	0
23	Total standardized approach	2,032	703	120	356	3,281	77	43
24	Total	203,228	5,443	3,416	8,614	78,953	10,885	5,158

								Dec 31, 2020
		v	w	x	y	z	aa	ab
						Asia/Pacific		
	in € m.	India	China	Singapore	Hong Kong	Other Asia/Pacific	Other geographical areas	Total
1	Central governments and central banks	3,117	1,183	2,738	453	4,798	3,148	109,389
2	Institutions	791	2,737	192	566	2,936	885	20,552
3	Corporates	7,881	5,267	6,260	4,744	14,484	6,068	404,348
	of which:							
3a	SMEs	516	0	286	3	123	303	23,622
3b	Specialized lending	207	205	371	335	715	291	42,722
3c	Other	7,159	5,062	5,603	4,407	13,646	5,475	338,004
4	Retail	71	41	17	10	138	165	230,595
	of which:							
4a	Secured by real estate property SMEs	0	0	0	0	2	1	9,004
4b	Secured by real estate property non-SMEs	19	34	12	8	64	113	168,926
4c	Qualifying revolving	4	3	1	1	14	11	15,498
4d	Other retail SMEs	2	2	0	0	4	9	6,163
4e	Other retail non-SMEs	45	3	3	1	54	30	31,004
5	Equity	39	0	80	7	9	1	2,636
5a	Other non-credit obligation asset	83	643	150	215	99	9	12,176
6	Total IRB approach	11,983	9,872	9,437	5,995	22,464	10,277	779,695
7	Central governments or central banks	0	0	0	0	0	27	121,065
8	Regional governments or local authorities	0	0	0	0	0	0	6,297
9	Public sector entities	0	0	0	0	20	0	2,158
10	Multilateral development banks	0	0	0	0	0	0	1,380
11	International organizations	0	0	0	0	0	141	785
12	Institutions	2	1	0	0	6	0	1,481
13	Corporates	162	178	85	87	463	190	16,482
14	Retail	424	0	0	0	6	1	3,296
15	Secured by mortgages on immovable property	1,717	4	0	1	2	0	4,434
16	Exposures in default[1]	2	1	2	7	0	0	1,000
17	Items associated with particularly high risk	0	0	0	0	3	1	154
18	Covered bonds	0	0	0	0	0	0	0
19	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	0	0
20	Collective investments undertakings (CIU)	0	0	0	0	0	0	0
21	Equity exposures	0	0	0	0	0	0	0
22	Other items	0	0	0	0	0	0	2
23	Total standardized approach	2,305	183	86	88	500	361	157,535
24	Total	14,287	10,055	9,522	6,083	22,964	10,637	937,230

[1] In light of EBA guidance (Q&A 2017_3481) we present the defaulted exposure within the standardized approach as a total in row 16 but also show a breakdown of defaulted exposure and assign it to their respective exposure classes. In order to avoid double counting of exposures, the total exposure of the standardized approach as presented in row 23 does not take into account figures disclosed under row 16.

Dec 31, 2019

		a	b	c	d	e	f	g
			Europe					
	in € m.	Europe	Germany	United Kingdom	France	Luxembourg	Italy	Netherlands
1	Central governments and central banks	13,878	4,588	0	0	0	924	0
2	Institutions	8,648	1,613	1,128	1,294	325	91	378
3	Corporates	201,908	83,196	14,996	10,483	9,176	11,698	20,104
	of which:							
3a	SMEs	19,407	12,991	544	432	320	2,412	766
3b	Specialized lending	16,318	2,658	986	1,316	2,858	1,050	1,437
3c	Other	166,183	67,548	13,467	8,735	5,998	8,237	17,901
4	Retail	222,334	193,007	435	168	60	15,666	108
	of which:							
4a	Secured by real estate property SMEs	9,098	8,804	1	1	9	173	2
4b	Secured by real estate property non-SMEs	160,436	143,656	119	58	41	6,985	86
4c	Qualifying revolving	15,927	15,793	6	13	1	50	5
4d	Other retail SMEs	5,657	3,238	7	10	0	992	6
4e	Other retail non-SMEs	31,217	21,515	301	86	9	7,466	8
5	Equity	1,037	450	74	4	231	80	1
5a	Other non-credit obligation asset	6,943	6,158	43	4	177	189	33
6	Total IRB approach	454,748	289,014	16,676	11,952	9,968	28,647	20,624
7	Central governments or central banks	71,644	49,461	5,437	6,114	5,050	1,277	776
8	Regional governments or local authorities	8,038	7,865	0	0	0	0	0
9	Public sector entities	6,908	6,908	0	0	0	0	0
10	Multilateral development banks	588	0	0	257	331	0	0
11	International organizations	811	0	0	0	270	0	0
12	Institutions	2,607	886	1,147	3	536	9	0
13	Corporates	9,562	5,768	283	108	1,181	434	600
14	Retail	3,480	1,236	4	10	258	1,647	59
15	Secured by mortgages on immovable property	2,418	233	29	26	1,132	323	372
16	Exposures in default[1]	795	359	1	1	6	203	51
17	Items associated with particularly high risk	127	0	0	0	0	109	0
18	Covered bonds	0	0	0	0	0	0	0
19	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	0	0
20	Collective investments undertakings (CIU)	0	0	0	0	0	0	0
21	Equity exposures	6	6	0	0	0	0	0
22	Other items	2	2	0	0	0	0	0
23	Total standardized approach	106,192	72,365	6,900	6,518	8,759	3,800	1,806
24	Total	560,940	361,379	23,576	18,470	18,727	32,447	22,430

								Dec 31, 2019
		h	i	j	k	l	m	n
							Europe	
	in € m.	Spain	Ireland	Switzerland	Poland	Belgium	Other Europe	North America
1	Central governments and central banks	435	0	3,871	2,099	73	1,887	78,706
2	Institutions	337	104	524	1	1,347	1,505	4,944
3	Corporates	11,002	5,324	16,336	1,017	2,638	15,939	150,309
	of which:							
3a	SMEs	1,214	23	88	31	93	494	1,939
3b	Specialized lending	984	1,858	67	180	290	2,636	23,812
3c	Other	8,804	3,443	16,181	806	2,254	12,809	124,558
4	Retail	10,131	24	247	2,188	47	255	94
	of which:							
4a	Secured by real estate property SMEs	99	0	5	1	0	4	1
4b	Secured by real estate property non-SMEs	6,947	21	185	2,162	30	145	59
4c	Qualifying revolving	6	0	19	3	5	25	8
4d	Other retail SMEs	1,364	1	6	6	3	22	20
4e	Other retail non-SMEs	1,715	1	32	16	8	58	6
5	Equity	9	0	59	0	16	114	840
5a	Other non-credit obligation asset	114	51	50	4	65	53	439
6	Total IRB approach	22,027	5,503	21,088	5,309	4,187	19,753	235,333
7	Central governments or central banks	1,698	0	0	20	647	1,164	0
8	Regional governments or local authorities	173	0	0	0	0	0	9
9	Public sector entities	0	0	0	0	0	0	45
10	Multilateral development banks	0	0	0	0	0	0	0
11	International organizations	0	0	0	0	541	0	0
12	Institutions	0	0	8	0	1	16	34
13	Corporates	82	386	22	25	159	514	2,483
14	Retail	62	0	5	0	194	4	4
15	Secured by mortgages on immovable property	236	7	2	0	55	3	83
16	Exposures in default[1]	5	138	3	2	4	22	84
17	Items associated with particularly high risk	7	0	0	0	0	11	186
18	Covered bonds	0	0	0	0	0	0	0
19	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	0	0
20	Collective investments undertakings (CIU)	0	0	0	0	0	0	0
21	Equity exposures	0	0	0	0	0	0	43
22	Other items	0	0	0	0	0	0	1
23	Total standardized approach	2,258	394	37	45	1,597	1,713	2,887
24	Total	24,285	5,897	21,125	5,354	5,784	21,466	238,220

								Dec 31, 2019
		o	p	q	r	s	t	u
					North America			Asia/Pacific
	in € m.	U.S.	Cayman Islands	Canada	Other North America	Asia/Pacific	Japan	Australia
1	Central governments and central banks	78,680	0	17	9	22,827	8,562	718
2	Institutions	3,702	0	1,242	0	7,605	257	625
3	Corporates	135,899	2,858	2,943	8,610	48,521	1,826	3,078
	of which:							
3a	SMEs	1,920	0	1	17	1,291	11	61
3b	Specialized lending	23,142	1	109	560	3,498	533	946
3c	Other	110,837	2,857	2,832	8,032	43,732	1,282	2,071
4	Retail	85	0	8	1	260	7	12
	of which:							
4a	Secured by real estate property SMEs	1	0	0	0	4	0	1
4b	Secured by real estate property non-SMEs	55	0	4	0	126	5	7
4c	Qualifying revolving	7	0	1	0	23	1	1
4d	Other retail SMEs	18	0	2	0	14	1	1
4e	Other retail non-SMEs	4	0	1	1	93	0	2
5	Equity	735	106	0	0	89	7	3
5a	Other non-credit obligation asset	439	0	0	0	1,297	58	51
6	Total IRB approach	219,540	2,964	4,210	8,619	80,599	10,717	4,487
7	Central governments or central banks	0	0	0	0	113	0	0
8	Regional governments or local authorities	9	0	0	0	0	0	0
9	Public sector entities	45	0	0	0	0	0	0
10	Multilateral development banks	0	0	0	0	0	0	0
11	International organizations	0	0	0	0	0	0	0
12	Institutions	34	0	0	0	7	0	0
13	Corporates	1,667	158	149	509	1,756	772	69
14	Retail	4	0	0	0	291	0	0
15	Secured by mortgages on immovable property	81	0	1	0	2,095	0	0
16	Exposures in default[1]	3	0	0	81	110	81	0
17	Items associated with particularly high risk	186	0	0	0	4	0	0
18	Covered bonds	0	0	0	0	0	0	0
19	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	0	0
20	Collective investments undertakings (CIU)	0	0	0	0	0	0	0
21	Equity exposures	43	0	0	0	0	0	0
22	Other items	1	0	0	0	0	0	0
23	Total standardized approach	2,070	158	150	509	4,266	772	69
24	Total	221,609	3,121	4,360	9,129	84,865	11,489	4,556

								Dec 31, 2019
		v	w	x	y	z	aa	ab
						Asia/Pacific		
	in € m.	India	China	Singapore	Hong Kong	Other Asia/Pacific	Other geographical areas	Total
1	Central governments and central banks	2,948	1,106	2,623	448	6,421	2,969	118,380
2	Institutions	1,357	2,297	195	560	2,314	1,054	22,251
3	Corporates	8,736	5,284	6,703	6,263	16,633	7,561	408,300
	of which:							
3a	SMEs	721	57	249	43	150	243	22,881
3b	Specialized lending	373	76	253	495	822	782	44,410
3c	Other	7,642	5,150	6,201	5,726	15,662	6,536	341,009
4	Retail	47	32	17	14	131	125	222,813
	of which:							
4a	Secured by real estate property SMEs	0	0	0	0	2	1	9,103
4b	Secured by real estate property non-SMEs	8	25	13	13	56	24	160,644
4c	Qualifying revolving	3	3	1	1	13	13	15,971
4d	Other retail SMEs	2	2	0	0	8	14	5,705
4e	Other retail non-SMEs	33	2	3	1	53	74	31,390
5	Equity	40	9	16	9	5	196	2,163
5a	Other non-credit obligation asset	95	603	171	176	143	749	9,429
6	Total IRB approach	13,222	9,331	9,725	7,470	25,647	12,655	783,336
7	Central governments or central banks	0	0	0	0	113	81	71,838
8	Regional governments or local authorities	0	0	0	0	0	0	8,047
9	Public sector entities	0	0	0	0	0	0	6,953
10	Multilateral development banks	0	0	0	0	0	3,149	3,738
11	International organizations	0	0	0	0	0	1,338	2,149
12	Institutions	1	3	0	1	2	0	2,648
13	Corporates	171	10	18	153	562	901	14,702
14	Retail	286	0	0	0	5	1	3,776
15	Secured by mortgages on immovable property	2,083	5	0	1	5	1	4,596
16	Exposures in default[1]	1	2	26	0	0	0	989
17	Items associated with particularly high risk	0	0	0	0	4	0	317
18	Covered bonds	0	0	0	0	0	0	0
19	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	0	0
20	Collective investments undertakings (CIU)	0	0	0	0	0	0	0
21	Equity exposures	0	0	0	0	0	0	49
22	Other items	0	0	0	0	0	0	3
23	Total standardized approach	2,541	19	19	155	690	5,471	118,816
24	Total[1]	15,763	9,351	9,744	7,625	26,338	18,127	902,152

[1] In light of EBA guidance (Q&A 2017_3481) we present the defaulted exposure within the standardized approach as a total in row 16 but also show a breakdown of defaulted exposure and assign it to their respective exposure classes. In order to avoid double counting of exposures, the total exposure of the standardized approach as presented in row 23 does not take into account figures disclosed under row 16.

Article 442 (e) CRR - Distribution of credit exposure by industry type

The table EU CRB-D below shows net credit exposures by industry and exposure classes. The industry sector breakdown in the columns below is consistent with table EU CR1-B. For on-balance sheet items the "net value of exposure" is calculated by deducting credit risk adjustments from the gross amount and for off-balance sheet exposures respective provisions have been deducted. The amounts shown are based on IFRS accounting values according to the regulatory scope of consolidation. The industry sector is defined using the first level of NACE (Nomenclature des Activités Économiques dans la Communauté Européenne) codes per the descriptive headings.

The breakdown into the exposure classes follows those as defined for the IRBA (i.e., combining the advanced and foundation IRB) as well as for the standardized approach. In the IRB approach, the line item “Central governments and central banks” includes exposures to regional governments or local authorities, public sector entities, multilateral developments banks and international organizations. The exposure class “Other items” within the standardized approach includes all exposures not covered in the other categories.

EU CRB-D – Concentration of exposures by industry or counterparty types

								Dec 31, 2020
		a	b	c	d	e	f	g
	in € m.	Agriculture, forestry and fishing	Mining and quarrying	Manufacturing	Electricity, gas, steam and air conditioning supply	Water supply, sewerage, waste management and remediation activities	Construction	Wholesale and retail trade, repair of motor vehicles and motorcycles
1	Central governments and central banks	15	0	0	0	0	70	0
2	Institutions	0	0	0	6	6	0	40
3	Corporates	953	9,448	90,584	10,778	934	8,820	38,156
	of which:							
3a	SMEs	196	103	4,892	137	144	1,242	3,290
3b	Specialized lending	0	0	387	684	0	672	350
3c	Other	757	9,345	85,305	9,957	790	6,906	34,516
4	Retail	198	16	1,760	39	53	1,280	3,487
	of which:							
4a	Secured by real estate property SMEs	85	1	300	9	11	487	641
4b	Secured by real estate property non-SMEs	30	6	259	8	5	282	517
4c	Qualifying revolving	0	0	0	0	0	0	0
4d	Other retail SMEs	66	6	1,036	20	33	413	1,359
4e	Other retail non-SMEs	17	4	165	3	4	97	970
5	Equity	0	4	2	0	0	0	0
5a	Other non-credit obligation asset	0	0	0	0	0	0	0
6	Total IRB approach	1,167	9,469	92,345	10,824	993	10,171	41,683
7	Central governments or central banks	0	0	0	0	0	0	0
8	Regional governments or local authorities	0	0	0	0	238	0	0
9	Public sector entities	0	0	0	1	13	0	0
10	Multilateral development banks	0	0	0	0	0	0	0
11	International organizations	0	0	0	0	0	0	0
12	Institutions	0	0	0	0	0	0	0
13	Corporates	6	8	605	16	20	91	620
14	Retail	3	5	154	1	2	27	111
15	Secured by mortgages on immovable property	32	7	532	5	2	81	464
16	Exposures in default[1]	134	6	1	89	0	0	0
17	Items associated with particularly high risk	0	0	3	0	0	29	6
18	Covered bonds	0	0	0	0	0	0	0
19	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	0	0
20	Collective investments undertakings (CIU)	0	0	0	0	0	0	0
21	Equity exposures	0	0	0	0	0	0	0
22	Other items	0	0	0	0	0	0	0
23	Total standardized approach	41	20	1,294	23	274	227	1,202
24	Total	1,208	9,488	93,639	10,846	1,267	10,398	42,885

									Dec 31, 2020
		h	i	j	l	m	n	o	p
	in € m.	Transportation and storage	Accommoda-tion and food service activities	Information and communication	Financial and insurance activities	Real estate activities	Professional, scientific and technical activities	Administrative and support service activities	Public administration and defense, compulsory social security
1	Central governments and central banks	23	0	0	71,861	1,304	0	0	31,105
2	Institutions	62	0	8	18,505	113	164	2	1,586
3	Corporates	12,337	3,200	21,525	110,342	39,809	9,467	10,548	1,041
	of which:								
3a	SMEs	374	657	581	4,182	4,183	1,341	947	3
3b	Specialized lending	1,281	598	430	12,137	22,760	160	1,841	225
3c	Other	10,682	1,945	20,514	94,023	12,865	7,966	7,760	814
4	Retail	389	561	541	1,173	3,850	4,709	1,061	2
	of which:								
4a	Secured by real estate property SMEs	70	189	170	595	1,823	1,118	392	1
4b	Secured by real estate property non-SMEs	85	144	146	228	1,798	2,536	338	1
4c	Qualifying revolving	0	0	0	0	0	0	0	0
4d	Other retail SMEs	195	173	170	138	128	689	228	1
4e	Other retail non-SMEs	38	54	55	213	101	365	102	0
5	Equity	0	0	128	1,408	386	6	174	1
5a	Other non-credit obligation asset	0	0	0	2,706	0	1	2,252	1
6	Total IRB approach	12,811	3,762	22,202	205,996	45,462	14,347	14,038	33,737
7	Central governments or central banks	0	0	0	94,377	0	0	0	26,687
8	Regional governments or local authorities	0	0	0	1	0	0	0	6,036
9	Public sector entities	0	0	0	2,032	0	0	1	41
10	Multilateral development banks	0	0	0	1,275	0	0	0	0
11	International organizations	0	0	0	0	0	0	0	645
12	Institutions	0	0	0	1,481	0	0	0	0
13	Corporates	245	12	413	7,181	308	297	2,338	0
14	Retail	21	10	18	11	7	26	31	0
15	Secured by mortgages on immovable property	58	46	41	153	295	108	47	1
16	Exposures in default[1]	29	60	17	9	6	239	20	212
17	Items associated with particularly high risk	0	7	1	2	16	16	0	0
18	Covered bonds	0	0	0	0	0	0	0	0
19	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	0	0	0
20	Collective investments undertakings (CIU)	0	0	0	0	0	0	0	0
21	Equity exposures	0	0	0	0	0	0	0	0
22	Other items	0	0	0	0	0	0	1	0
23	Total standardized approach	324	76	474	106,513	626	447	2,417	33,410
24	Total	13,135	3,837	22,675	312,508	46,089	14,794	16,455	67,147

Dec 31, 2020

		q	r	s	t	u	v	w
	in € m.	Education	Human health and social work activities	Arts, entertainment and recreation	Other service activities	Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use	Activities of extraterritorial organizations and bodies	Total
1	Central governments and central banks	0	0	0	4,704	0	307	109,389
2	Institutions	2	22	0	36	0	0	20,552
3	Corporates	264	3,386	1,788	9,122	21,845	0	404,348
	of which:							
3a	SMEs	67	429	86	548	220	0	23,622
3b	Specialized lending	0	91	0	867	238	0	42,722
3c	Other	197	2,866	1,701	7,707	21,387	0	338,004
4	Retail	138	2,704	308	1,627	206,700	0	230,595
	of which:							
4a	Secured by real estate property SMEs	41	925	142	382	1,622	0	9,004
4b	Secured by real estate property non-SMEs	42	432	75	233	161,761	0	168,926
4c	Qualifying revolving	0	0	0	0	15,498	0	15,498
4d	Other retail SMEs	34	732	60	566	116	0	6,163
4e	Other retail non-SMEs	21	615	31	446	27,703	0	31,004
5	Equity	2	10	0	512	0	0	2,636
5a	Other non-credit obligation asset	0	0	0	5,870	1,345	0	12,176
6	Total IRB approach	405	6,122	2,095	21,870	229,890	307	779,695
7	Central governments or central banks	0	0	0	0	0	2	121,065
8	Regional governments or local authorities	0	0	1	21	0	0	6,297
9	Public sector entities	0	70	0	0	0	0	2,158
10	Multilateral development banks	0	0	0	0	0	105	1,380
11	International organizations	0	0	0	0	0	141	785
12	Institutions	0	0	0	0	0	0	1,481
13	Corporates	5	121	10	4,001	186	1	16,482
14	Retail	1	6	3	65	2,794	0	3,296
15	Secured by mortgages on immovable property	5	30	21	429	2,075	0	4,434
16	Exposures in default[1]	32	138	0	2	2	4	1,000
17	Items associated with particularly high risk	0	0	0	1	72	0	154
18	Covered bonds	0	0	0	0	0	0	0
19	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	0	0
20	Collective investments undertakings (CIU)	0	0	0	0	0	0	0
21	Equity exposures	0	0	0	0	0	0	0
22	Other items	0	0	0	1	0	0	2
23	Total standardized approach	11	227	34	4,518	5,127	248	157,535
24	Total	417	6,349	2,130	26,388	235,017	555	937,230

[1] In light of EBA guidance (Q&A 2017_3481) we present the defaulted exposure within the standardized approach as a total in row 16 but also show a breakdown of defaulted exposure and assign it to their respective exposure classes. In order to avoid double counting of exposures, the total exposure of the standardized approach as presented in row 23 does not take into account figures disclosed under row 16.

								Dec 31, 2019
		a	b	c	d	e	f	g
	in € m.	Agriculture, forestry and fishing	Mining and quarrying	Manufacturing	Electricity, gas, steam and air conditioning supply	Water supply, sewerage, waste management and remediation activities	Construction	Wholesale and retail trade, repair of motor vehicles and motorcycles
1	Central governments and central banks	0	0	0	0	0	47	0
2	Institutions	0	0	0	7	107	0	48
3	Corporates	1,315	9,110	93,559	12,476	992	7,524	35,384
	of which:							
3a	SMEs	181	63	4,608	174	132	844	2,451
3b	Specialized lending	2	0	435	1,031	0	854	198
3c	Other	1,132	9,047	88,516	11,272	860	5,826	32,735
4	Retail	201	17	1,711	37	50	1,197	2,730
	of which:							
4a	Secured by real estate property SMEs	91	1	322	8	13	492	660
4b	Secured by real estate property non-SMEs	29	6	256	6	4	266	494
4c	Qualifying revolving	0	0	0	0	0	0	0
4d	Other retail SMEs	64	6	979	19	30	345	1,152
4e	Other retail non-SMEs	18	3	154	4	4	95	425
5	Equity	0	4	1	1	0	0	0
5a	Other non-credit obligation asset	0	0	0	0	0	0	0
6	Total IRB approach	1,516	9,131	95,271	12,521	1,149	8,768	38,163
7	Central governments or central banks	0	0	0	0	0	0	0
8	Regional governments or local authorities	0	0	0	0	185	0	0
9	Public sector entities	0	0	0	2	13	0	0
10	Multilateral development banks	0	0	0	0	0	0	0
11	International organizations	0	0	0	0	0	0	0
12	Institutions	0	0	0	0	0	0	0
13	Corporates	6	74	697	36	37	57	912
14	Retail	4	5	111	1	2	29	74
15	Secured by mortgages on immovable property	37	26	634	6	3	86	565
16	Exposures in default[1]	6	1	93	0	0	23	41
17	Items associated with particularly high risk	0	0	2	0	0	36	6
18	Covered bonds	0	0	0	0	0	0	0
19	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	0	0
20	Collective investments undertakings (CIU)	0	0	0	0	0	0	0
21	Equity exposures	0	0	0	0	0	0	0
22	Other items	0	0	0	0	0	0	0
23	Total standardized approach	48	106	1,444	45	239	207	1,558
24	Total	1,564	9,237	96,716	12,565	1,388	8,975	39,720

									Dec 31, 2019
		h	i	j	l	m	n	o	p
	in € m.	Transportation and storage	Accommoda-tion and food service activities	Information and communication	Financial and insurance activities	Real estate activities	Professional, scientific and technical activities	Administrative and support service activities	Public administration and defense, compulsory social security
1	Central governments and central banks	20	0	0	79,132	0	0	0	34,478
2	Institutions	49	0	9	20,991	124	206	0	650
3	Corporates	10,818	3,929	22,867	109,535	48,742	10,941	9,105	926
	of which:								
3a	SMEs	373	612	528	4,508	5,072	1,198	649	69
3b	Specialized lending	1,699	832	187	9,322	27,657	228	1,179	26
3c	Other	8,746	2,486	22,152	95,704	16,012	9,515	7,277	831
4	Retail	364	494	478	1,203	3,614	4,434	1,075	2
	of which:								
4a	Secured by real estate property SMEs	73	190	162	557	1,826	1,103	396	0
4b	Secured by real estate property non-SMEs	81	130	132	191	1,569	2,395	349	1
4c	Qualifying revolving	0	0	0	0	0	0	0	0
4d	Other retail SMEs	173	119	126	76	125	573	205	0
4e	Other retail non-SMEs	38	55	58	380	94	363	125	0
5	Equity	0	0	240	1,044	201	7	379	0
5a	Other non-credit obligation asset	0	0	0	2,326	0	1	2,953	0
6	Total IRB approach	11,252	4,424	23,594	214,230	52,681	15,590	13,511	36,056
7	Central governments or central banks	0	0	0	59,554	0	0	0	12,283
8	Regional governments or local authorities	0	0	0	0	9	0	0	7,820
9	Public sector entities	12	0	0	6,703	0	3	0	150
10	Multilateral development banks	0	0	0	0	0	0	0	0
11	International organizations	0	0	0	559	0	0	0	811
12	Institutions	0	0	0	2,648	0	0	0	0
13	Corporates	226	79	355	6,659	380	329	45	14
14	Retail	18	5	18	16	3	23	23	1
15	Secured by mortgages on immovable property	78	51	54	117	197	126	50	2
16	Exposures in default[1]	8	6	3	237	37	248	29	0
17	Items associated with particularly high risk	0	7	1	187	18	29	0	0
18	Covered bonds	0	0	0	0	0	0	0	0
19	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	0	0	0
20	Collective investments undertakings (CIU)	0	0	0	0	0	0	0	0
21	Equity exposures	0	0	0	32	11	0	0	0
22	Other items	0	0	0	0	0	0	2	0
23	Total standardized approach	334	142	428	76,474	618	511	121	21,081
24	Total	11,586	4,566	24,022	290,705	53,299	16,101	13,632	57,137

									Dec 31, 2019
		q	r	s	t	u	v	w
	in € m.	Education	Human health and social work activities	Arts, entertainment and recreation	Other service activities	Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use	Activities of extraterritorial organizations and bodies	Total
1	Central governments and central banks	0	0	0	4,588	0	115	118,380
2	Institutions	1	23	0	35	0	0	22,251
3	Corporates	437	3,694	1,901	5,716	19,325	6	408,300
	of which:							
3a	SMEs	113	344	93	659	210	0	22,881
3b	Specialized lending	0	109	0	377	274	0	44,410
3c	Other	324	3,241	1,807	4,679	18,842	6	341,009
4	Retail	124	2,582	280	1,132	201,087	0	222,813
	of which:							
4a	Secured by real estate property SMEs	39	901	132	385	1,754	0	9,103
4b	Secured by real estate property non-SMEs	41	413	69	228	153,984	0	160,644
4c	Qualifying revolving	0	0	0	0	15,971	0	15,971
4d	Other retail SMEs	25	720	47	128	794	0	5,705
4e	Other retail non-SMEs	19	548	31	392	28,584	0	31,390
5	Equity	9	0	0	278	0	0	2,163
5a	Other non-credit obligation asset	0	0	0	4,148	0	0	9,429
6	**Total IRB approach**	**570**	**6,299**	**2,180**	**15,898**	**220,412**	**121**	**783,336**
7	Central governments or central banks	0	0	0	0	0	2	71,838
8	Regional governments or local authorities	0	5	1	18	9	0	8,047
9	Public sector entities	0	70	0	0	0	0	6,953
10	Multilateral development banks	0	0	0	0	0	3,738	3,738
11	International organizations	0	0	0	0	0	779	2,149
12	Institutions	0	0	0	0	0	0	2,648
13	Corporates	134	114	23	3,363	1,160	1	14,702
14	Retail	1	3	2	53	3,385	0	3,776
15	Secured by mortgages on immovable property	6	34	13	459	2,053	0	4,596
16	Exposures in default[1]	0	0	4	95	156	0	989
17	Items associated with particularly high risk	0	0	0	1	28	0	317
18	Covered bonds	0	0	0	0	0	0	0
19	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	0	0
20	Collective investments undertakings (CIU)	0	0	0	0	0	0	0
21	Equity exposures	0	0	0	6	0	0	49
22	Other items	0	0	0	1	0	0	3
23	Total standardized approach	141	226	39	3,900	6,635	4,519	118,816
24	Total	711	6,525	2,219	19,797	227,048	4,640	902,152

[1] In light of EBA guidance (Q&A 2017_3481) we present the defaulted exposure within the standardized approach as a total in row 16 but also show a breakdown of defaulted exposure and assign it to their respective exposure classes. In order to avoid double counting of exposures, the total exposure of the standardized approach as presented in row 23 does not take into account figures disclosed under row 16.

Article 442 (f) CRR - Residual maturity breakdown of credit exposure

The table EU CRB-E below shows net credit exposures by maturities and exposure classes. Here exposure refers to on-balance sheet (excluding off-balance sheet exposure) items wherein the "net value of exposure" is calculated by deducting credit risk adjustments from the gross amount. The net exposure is split into 5 categories based on the residual contractual maturity. Below are the categories

- On Demand – where the counterparty has a choice of when the amount is repaid
- Bucketing – 0 to 1 year, 1 to 5 years and more than 5 years
- No stated maturity – where an exposure has no stated maturity for reasons other than the counterparty having the choice of the repayment date

The breakdown into the exposure classes follows those as defined for the IRBA (i.e., combining the advanced and foundation IRB) as well as for the standardized approach. In the IRB approach, the line item “Central governments and central banks” includes exposures to regional governments or local authorities, public sector entities, multilateral developments banks and international organizations. The exposure class “Other items” within the standardized approach includes all exposures not covered in the other categories.

EU CRB-E – Maturity of exposures

							Dec 31, 2020
		a	b	c	d	e	f
		Net exposure value					
	in € m.	On demand	<= 1 year	> 1 year <= 5 years	> 5 years	No stated maturity	Total
1	Central governments and central banks	73,801	9,023	14,615	10,790	0	108,230
2	Institutions	6,521	4,568	2,854	1,331	0	15,274
3	Corporates	11,781	87,291	70,123	32,432	0	201,627
	of which:						
3a	SMEs	1,401	2,912	4,555	6,572	0	15,440
3b	Specialized lending	977	12,757	15,878	9,849	0	39,460
3c	Other	9,403	71,623	49,690	16,011	0	146,727
4	Retail	1,770	5,405	19,682	173,019	0	199,875
	of which:						
4a	Secured by real estate property SMEs	74	133	806	7,426	0	8,439
4b	Secured by real estate property non-SMEs	242	2,144	8,024	149,830	0	160,240
4c	Qualifying revolving	710	39	0	0	0	749
4d	Other retail SMEs	435	938	1,754	825	0	3,952
4e	Other retail non-SMEs	309	2,149	9,098	14,939	0	26,495
5	Equity	1,665	730	30	116	0	2,541
5a	Other non-credit obligation asset	2,060	6,771	937	2,405	0	12,173
6	Total IRB approach	97,598	113,788	108,240	220,094	0	539,720
7	Central governments or central banks	93,239	7,448	9,285	11,082	0	121,054
8	Regional governments or local authorities	39	1,464	2,220	1,205	0	4,929
9	Public sector entities	37	219	1,225	619	0	2,099
10	Multilateral development banks	0	138	1,002	241	0	1,380
11	International organizations	0	645	132	8	0	785
12	Institutions	0	35	0	1,433	0	1,468
13	Corporates	3,050	5,830	3,093	1,551	0	13,524
14	Retail	373	410	623	648	0	2,053
15	Secured by mortgages on immovable property	432	553	590	2,657	0	4,232
16	Exposures in default[1]	318	120	374	124	0	936
17	Items associated with particularly high risk	35	2	37	77	0	152
18	Covered bonds	0	0	0	0	0	0
19	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	0
20	Collective investments undertakings (CIU)	0	0	0	0	0	0
21	Equity exposures	0	0	0	0	0	0
22	Other items	0	2	0	0	0	2
23	Total standardized approach	97,206	16,745	18,207	19,521	0	151,678
24	Total	194,803	130,533	126,447	239,615	0	691,398

[1] In light of EBA guidance (Q&A 2017_3481) we present the defaulted exposure within the standardized approach as a total in row 16 but also show a breakdown of defaulted exposure and assign it to their respective exposure classes. In order to avoid double counting of exposures, the total exposure of the standardized approach as presented in row 23 does not take into account figures disclosed under row 16.

							Dec 31, 2019
		a	b	c	d	e	f
		Net exposure value					
	in € m.	On demand	<= 1 year	> 1 year <= 5 years	> 5 years	No stated maturity	Total
1	Central governments and central banks	64,594	21,449	21,136	3,779	1,759	117,307
2	Institutions	5,205	7,912	2,928	1,557	67	17,712
3	Corporates	17,282	80,307	72,096	33,023	3,814	207,176
	of which:						
3a	SMEs	1,936	3,432	3,771	6,349	20	15,507
3b	Specialized lending	1,980	8,378	19,946	9,529	0	39,895
3c	Other	13,367	68,497	48,379	17,146	3,794	151,775
4	Retail	2,364	4,866	18,823	164,110	2,342	192,500
	of which:						
4a	Secured by real estate property SMEs	95	139	815	7,532	0	8,581
4b	Secured by real estate property non-SMEs	254	1,737	8,201	140,412	1,458	152,062
4c	Qualifying revolving	902	46	0	0	0	948
4d	Other retail SMEs	631	1,074	1,156	614	339	3,813
4e	Other retail non-SMEs	482	1,869	8,651	15,552	545	27,096
5	Equity	239	1,310	26	538	0	2,127
5a	Other non-credit obligation asset	1,237	5,016	898	50	2,226	9,427
6	Total IRB approach	90,922	120,860	115,905	203,057	10,209	546,251
7	Central governments or central banks	36,568	23,042	3,710	6,404	1,917	71,640
8	Regional governments or local authorities	65	1,699	2,922	2,031	0	6,718
9	Public sector entities	56	449	2,956	3,476	1	6,938
10	Multilateral development banks	0	29	2,012	1,697	0	3,738
11	International organizations	0	587	743	819	0	2,149
12	Institutions	1,414	18	0	732	611	2,627
13	Corporates	1,137	6,123	3,438	1,413	229	12,419
14	Retail	757	237	656	817	41	2,502
15	Secured by mortgages on immovable property	495	500	421	2,961	1	4,395
16	Exposures in default[1]	385	76	389	394	0	978
17	Items associated with particularly high risk	23	3	194	84	0	304
18	Covered bonds	0	0	0	0	0	0
19	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	0
20	Collective investments undertakings (CIU)	0	0	0	0	0	0
21	Equity exposures	0	0	0	49	0	49
22	Other items	0	3	0	0	0	3
23	Total standardized approach	40,514	32,690	17,053	20,482	2,800	113,481
24	Total	131,436	153,549	132,958	223,539	13,009	659,732

[1] In light of EBA guidance (Q&A 2017_3481) we present the defaulted exposure within the standardized approach as a total in row 16 but also show a breakdown of defaulted exposure and assign it to their respective exposure classes. In order to avoid double counting of exposures, the total exposure of the standardized approach as presented in row 23 does not take into account figures disclosed under row 16.

Article 442 (g) CRR - Defaulted exposures by regulatory exposure class and industry

Tables EU CR1-A and EU CR1-B provide asset quality information of the Group's on- and off-balance sheet exposures subject to the credit risk framework broken down by regulatory exposure classes and industries respectively.

The industry classification is based on NACE codes. NACE (Nomenclature des Activités Économiques dans la Communauté Européenne) is a European industry standard classification system for classifying business activities.

The amounts shown below are based on IFRS accounting values according to the regulatory scope of consolidation. An exposure is being classified as defaulted if the default criteria according to Article 178 CRR are met. As confirmed by EBA (EBA/OP/2017/02) specific credit risk adjustments consist of all types of allowance for credit losses held against financial instruments subject to impairment according to IFRS 9. The Group does not record any credit risk adjustment which qualifies as general credit risk adjustment. The credit risk adjustment charges of the period are provided for a six month period in column "f".

EU CR1-A – Credit quality of exposures by exposure class and instrument

Dec 31, 2020

		a	b	c	d	e	f	g
		Gross carrying values of						
	in € m.	Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs	Credit risk adjustment charges of the period six months ended Dec 31, 2020[1]	Net values (a+b-c-d)
1	Central governments and central banks	238	109,177	27	0	0	3	109,389
2	Institutions	61	20,498	6	0	0	(6)	20,552
3	Corporates	10,580	396,230	2,463	0	597	328	404,348
	Of which:							
5	SMEs	558	23,372	308	0	9	48	23,622
4	Specialized Lending	2,479	40,570	328	0	152	150	42,722
5a	Other	7,543	332,288	1,827	0	436	130	338,004
6	Retail	4,011	228,948	2,364	0	519	234	230,595
	Of which:							
8	Secured by real estate property SMEs	98	8,961	56	0	1	0	9,004
9	Secured by real estate property Non-SMEs	1,773	167,758	605	0	38	39	168,926
10	Qualifying Revolving	99	15,471	72	0	0	26	15,498
12	Other SMEs	264	6,131	233	0	87	20	6,163
13	Other Non-SMEs	1,775	30,627	1,398	0	393	148	31,004
14	Equity	2	2,633	0	0	0	0	2,636
14a	Other non-credit obligation asset	34	12,144	2	0	0	0	12,176
15	Total IRB approach	14,926	769,631	4,862	0	1,116	559	779,695
16	Central governments or central banks	0	121,067	2	0	0	(2)	121,065
17	Regional governments or local authorities	0	6,297	0	0	0	(1)	6,297
18	Public sector entities	0	2,158	0	0	0	(1)	2,158
19	Multilateral Development Banks	0	1,380	0	0	0	0	1,380
20	International Organizations	0	785	0	0	0	0	785
21	Institutions	0	1,498	17	0	0	0	1,481
22	Corporates	564	15,971	52	0	64	7	16,482
24	Retail	365	3,173	242	0	46	20	3,296
26	Secured by mortgages on immovable property	268	4,189	23	0	0	7	4,434
28	Exposures in default[2]	1,380	0	381	0	111	36	1,000
29	Items associated with particularly high risk	183	102	131	0	0	0	154
30	Covered bonds	0	0	0	0	0	0	0
31	Claims on institutions and corporates with a short- term credit assessment	0	0	0	0	0	0	0
32	Collective investments undertakings (CIU)	0	0	0	0	0	0	0
33	Equity exposures	0	0	0	0	0	0	0
34	Other items	0	2	0	0	0	0	2
35	Total standardized approach	1,380	156,623	468	0	111	28	157,535
36	Total	16,306	926,254	5,330	0	1,228	588	937,230
	Of which:							
37	Loans	12,709	412,352	4,810	0	1,228	509	420,251
38	Debt Securities	745	68,609	38	0	0	(6)	69,316
39	Off-balance sheet exposures	2,678	243,573	419	0	0	85	245,832

[1] Credit risk adjustment charges of the period do not include recoveries.
[2] In light of EBA guidance (Q&A 2017_3481) we present the defaulted exposure within the standardized approach as a total in row 28 but also show a breakdown of defaulted exposure and assign it to their respective exposure classes. In order to avoid double counting of exposures, the total exposure of the standardized approach as presented in row 35 does not take into account figures disclosed under row 28.

Jun 30, 2020

	in € m.	a	b	c	d	e	f	g
		Gross carrying values of						
		Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs	Credit risk adjustment charges of the period six months ended Jun 30, 2020[1]	Net values (a+b-c-d)
1	Central governments and central banks	268	105,792	26	0	0	9	106,034
2	Institutions	4	21,334	14	0	0	6	21,324
3	Corporates	9,007	403,562	2,574	0	429	894	409,995
	Of which:							
5	SMEs	464	24,260	285	0	4	51	24,439
4	Specialized Lending	1,823	46,549	312	0	38	142	48,060
5a	Other	6,721	332,753	1,978	0	388	701	337,496
6	Retail	4,148	227,650	2,302	0	551	334	229,496
	Of which:							
8	Secured by real estate property SMEs	113	8,946	56	0	0	2	9,002
9	Secured by real estate property Non-SMEs	1,726	165,498	596	0	248	46	166,628
10	Qualifying Revolving	80	15,632	65	0	0	(8)	15,647
12	Other SMEs	269	5,844	231	0	71	36	5,883
13	Other Non-SMEs	1,960	31,731	1,355	0	231	258	32,336
14	Equity	1	2,429	0	0	0	0	2,431
14a	Other non-credit obligation asset	35	9,177	1	0	0	0	9,211
15	Total IRB approach	13,462	769,946	4,917	0	980	1,244	778,491
16	Central governments or central banks	0	112,160	5	0	0	2	112,155
17	Regional governments or local authorities	0	6,692	2	0	0	0	6,689
18	Public sector entities	0	3,798	1	0	0	1	3,797
19	Multilateral Development Banks	0	1,457	0	0	0	0	1,456
20	International Organizations	0	795	0	0	0	0	795
21	Institutions	54	1,328	14	0	0	0	1,369
22	Corporates	595	15,059	54	0	52	(14)	15,600
24	Retail	361	3,482	252	0	35	10	3,592
26	Secured by mortgages on immovable property	225	4,035	19	0	0	7	4,241
28	Exposures in default[2]	1,427	0	377	0	87	(3)	1,050
29	Items associated with particularly high risk	192	143	132	0	0	0	203
30	Covered bonds	0	0	0	0	0	0	0
31	Claims on institutions and corporates with a short- term credit assessment	0	36	0	0	0	0	36
32	Collective investments undertakings (CIU)	0	0	0	0	0	0	0
33	Equity exposures	0	49	0	0	0	0	49
34	Other items	0	1	0	0	0	0	1
35	Total standardized approach	1,427	149,036	479	0	88	7	149,984
36	Total	14,889	918,981	5,396	0	1,068	1,251	928,474
	Of which:							
37	Loans	12,512	423,520	4,809	0	1,068	1,182	431,222
38	Debt Securities	645	62,578	49	0	0	28	63,173
39	Off-balance sheet exposures	1,595	233,894	403	0	0	(10)	235,085

[1] Credit risk adjustment charges of the period do not include recoveries.
[2] In light of EBA guidance (Q&A 2017_3481) we present the defaulted exposure within the standardized approach as a total in row 28 but also show a breakdown of defaulted exposure and assign it to their respective exposure classes. In order to avoid double counting of exposures, the total exposure of the standardized approach as presented in row 35 does not take into account figures disclosed under row 28.

EU CR1-B – Credit quality of exposures by industry

								Dec 31, 2020
		a	b	c	d	e	f	g
		Gross carrying values of						
	in € m.	Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs	Credit risk adjustment charges of the period six months ended Dec 31, 2020[1]	Net values (a+b-c-d)
1	Agriculture, forestry and fishing	40	1,182	14	0	2	1	1,208
2	Mining and quarrying	556	9,068	136	0	4	71	9,488
3	Manufacturing	1,664	92,629	654	0	95	20	93,639
4	Electricity, gas, steam and air conditioning supply	130	10,763	46	0	1	(2)	10,846
5	Water supply, sewerage, waste management and remediation activities	58	1,221	12	0	0	0	1,267
6	Construction	633	9,989	224	0	34	(6)	10,398
7	Wholesale and retail trade, repair of motor vehicles and motorcycles	1,124	42,361	600	0	89	104	42,885
8	Transport and storage	576	12,711	152	0	49	42	13,135
9	Accommodation and food service activities	205	3,672	39	0	3	7	3,837
10	Information and communication	476	22,335	136	0	2	22	22,675
10a	Financial and insurance activities	2,714	310,343	549	0	447	(64)	312,508
11	Real estate activities	1,420	44,875	206	0	79	111	46,089
12	Professional, scientific and technical activities	549	14,385	140	0	11	27	14,794
13	Administrative and support service activities	987	15,606	138	0	36	33	16,455
14	Public administration and defense, compulsory social security	239	66,937	30	0	0	2	67,147
15	Education	4	415	3	0	4	1	417
16	Human health services and social work activities	45	6,329	25	0	1	(4)	6,349
17	Arts, entertainment and recreation	9	2,132	12	0	1	(11)	2,130
18	Other service activities	256	26,182	49	0	3	2	26,388
18a	Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use	4,619	232,562	2,164	0	367	233	235,017
18b	Activities of extraterritorial organizations and bodies	1	555	1	0	0	0	555
19	Total	16,306	926,254	5,330	0	1,228	588	937,230

[1] Credit risk adjustment charges of the period do not include recoveries.

								Jun 30, 2020
		a	b	c	d	e	f	g
		Gross carrying values of						
	in € m.	Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs	Credit risk adjustment charges of the period six months ended Jun 30, 2020[1]	Net values (a+b-c-d)
1	Agriculture, forestry and fishing	33	1,212	12	0	1	2	1,233
2	Mining and quarrying	315	9,293	60	0	5	41	9,548
3	Manufacturing	1,593	98,564	760	0	103	182	99,397
4	Electricity, gas, steam and air conditioning supply	153	11,996	52	0	2	4	12,097
5	Water supply, sewerage, waste management and remediation activities	99	1,356	14	0	1	2	1,441
6	Construction	666	9,734	270	0	38	19	10,131
7	Wholesale and retail trade, repair of motor vehicles and motorcycles	1,204	37,577	571	0	96	130	38,211
8	Transport and storage	553	11,773	118	0	59	35	12,208
9	Accommodation and food service activities	116	4,438	50	0	(3)	18	4,505
10	Information and communication	374	19,754	139	0	1	61	19,989
10a	Financial and insurance activities	2,938	321,221	643	0	25	237	323,517
11	Real estate activities	1,029	53,915	197	0	182	43	54,747
12	Professional, scientific and technical activities	493	16,314	147	0	26	22	16,659
13	Administrative and support service activities	311	11,408	136	0	11	49	11,583
14	Public administration and defense, compulsory social security	269	58,858	34	0	0	16	59,093
15	Education	3	678	2	0	5	1	678
16	Human health services and social work activities	48	6,087	26	0	15	12	6,109
17	Arts, entertainment and recreation	19	2,102	29	0	0	17	2,092
18	Other service activities	254	9,310	57	0	5	21	9,508
18a	Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use	4,419	231,756	2,080	0	498	340	234,095
18b	Activities of extraterritorial organizations and bodies	1	1,635	1	0	0	0	1,635
19	Total	14,889	918,981	5,396	0	1,068	1,251	928,474

[1] Credit risk adjustment charges of the period do not include recoveries.

Article 442 (h) CRR - Defaulted exposures by geographical area, past due, nonperforming and forborne exposures

Table EU CR1-C provides asset quality information of the Group's on- and off-balance sheet exposures subject to the credit risk framework broken down by significant geographical areas as well as countries.

We consider a country as being significant, if it contributes to an aggregate of 90 % of our total exposure. An area is considered significant if it contains at least one significant country. The geographical distribution is based on the legal domicile of the counterparty or issuer.

The amounts shown below are based on IFRS accounting values according to the regulatory scope of consolidation. An exposure is being classified as defaulted if the default criteria according to Article 178 CRR are met. As confirmed by EBA (EBA/OP/2017/02) specific credit risk adjustments consist of all types of allowance for credit losses held against financial instruments subject to impairment according to IFRS. The Group does not record any credit risk adjustment which qualify as general credit risk adjustment. The credit risk adjustment charges of the period are provided for a six month period in column "f".

EU CR1-C – Credit quality of exposures by geography

								Dec 31, 2020
		a	b	c	d	e	f	g
		Gross carrying values of						
	in € m.	Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs	Credit risk adjustment charges of the period six months ended Dec 31, 2020[1]	Net values (a+b-c-d)
1	Europe	9,799	621,513	4,373	0	858	333	626,938
	Of which:							
2	Germany	4,676	415,884	2,239	0	303	36	418,321
3	United Kingdom	213	25,150	133	0	8	44	25,231
4	France	95	17,635	53	0	5	30	17,677
5	Luxembourg	188	20,550	28	0	12	(8)	20,710
6	Italy	1,401	32,832	1,085	0	130	91	33,148
7	Netherlands	451	24,041	198	0	42	(13)	24,295
8	Spain	952	27,285	382	0	288	76	27,855
9	Ireland	944	4,656	83	0	22	71	5,518
10	Switzerland	492	18,828	43	0	0	9	19,277
11	Poland	87	5,211	42	0	3	4	5,256
12	Belgium	9	7,314	3	0	0	0	7,320
13	Other Europe	291	22,127	86	0	46	(8)	22,332
14	North America	4,013	217,229	541	0	243	176	220,701
	Of which:							
15	U.S.	3,656	200,044	473	0	238	167	203,228
16	Cayman Islands	179	5,276	12	0	0	2	5,443
17	Canada	0	3,420	4	0	0	(1)	3,416
18	Other North America	178	8,489	54	0	4	8	8,614
19	Asia/Pacific	1,899	77,405	351	0	79	68	78,953
	Of which:							
20	Japan	94	10,794	4	0	(17)	(4)	10,885
21	Australia	171	5,009	22	0	0	13	5,158
22	India	543	13,841	97	0	69	35	14,287
23	China	130	9,928	3	0	0	(2)	10,055
24	Singapore	84	9,497	59	0	0	7	9,522
25	Hong Kong	597	5,611	125	0	0	31	6,083
26	Other Asia/Pacific	280	22,724	41	0	27	(12)	22,964
27	Other geographical areas	595	10,107	65	0	48	11	10,637
28	Total	16,306	926,254	5,330	0	1,228	588	937,230

[1] Credit risk adjustment charges of the period do not include recoveries.

								Jun 30, 2020
		a	b	c	d	e	f	g
		Gross carrying values of						
	in € m.	Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs	Credit risk adjustment charges of the period six months ended Jun 30, 2020[1]	Net values (a+b-c-d)
1	Europe	10,090	598,557	4,415	0	921	793	604,233
	Of which:							
2	Germany	4,494	401,116	2,260	0	467	445	403,351
3	United Kingdom	554	23,153	99	0	41	40	23,609
4	France	22	15,498	29	0	0	5	15,491
5	Luxembourg	175	20,707	51	0	24	25	20,831
6	Italy	1,485	32,118	1,087	0	61	104	32,516
7	Netherlands	520	23,590	240	0	11	24	23,870
8	Spain	1,038	24,167	389	0	262	55	24,816
9	Ireland	1,028	5,298	81	0	3	53	6,245
10	Switzerland	490	18,908	36	0	1	8	19,363
11	Poland	77	5,084	41	0	1	2	5,120
12	Belgium	9	6,998	3	0	0	0	7,004
13	Other Europe	197	21,919	99	0	50	31	22,017
14	North America	2,612	225,907	527	0	88	302	227,991
	Of which:							
15	U.S.	2,299	209,882	465	0	88	259	211,717
16	Cayman Islands	132	2,923	10	0	0	6	3,045
17	Canada	11	3,627	6	0	0	0	3,633
18	Other North America	169	9,474	47	0	0	37	9,596
19	Asia/Pacific	1,550	82,042	381	0	22	131	83,212
	Of which:							
20	Japan	109	13,097	2	0	(11)	(4)	13,204
21	Australia	166	4,719	10	0	0	1	4,875
22	India	367	14,359	148	0	7	32	14,578
23	China	8	8,277	6	0	0	2	8,280
24	Singapore	67	10,093	53	0	0	42	10,107
25	Hong Kong	581	6,168	101	0	0	55	6,649
26	Other Asia/Pacific	252	25,328	60	0	26	4	25,520
27	Other geographical areas	637	12,475	73	0	37	25	13,039
28	Total	14,889	918,981	5,396	0	1,068	1,251	928,474

[1] Credit risk adjustment charges of the period do not include recoveries.

Table EU CR1-D provides a breakdown of the Group's loans and debt securities, where contractually agreed payments of principal or interest remain unpaid by the borrower by ageing of the overdue amounts irrespective of the impairment status of the borrower. The amounts shown are based on IFRS accounting values gross of credit risk adjustments according to the regulatory scope of consolidation.

EU CR1-D – Ageing of past-due exposures

				Dec 31, 2020			Jun 30, 2020
		1	2	3	1	2	3
	in € m.	Loans	Debt Securities	Total exposures	Loans	Debt Securities	Total exposures
a	≤ 30 days	3,512	1	3,514	3,118	14	3,132
b	> 30 days ≤ 60 days	663	21	684	608	8	616
c	> 60 days ≤ 90 days	871	0	871	891	0	891
d	> 90 days ≤ 180 days	854	38	893	1,141	43	1,183
e	> 180 days ≤ 1 year	794	48	842	887	0	887
f	> 1 year	2,469	13	2,482	2,687	13	2,700

Table EU CR1-E provides details of the Group's non-performing and forborne exposures as per EBA definitions (Implementing Technical Standards (ITS) on Supervisory reporting on forbearance and non-performing exposures under article 99(4) of Regulation (EU) No 575/2013) as well as of the impairments booked against and collaterals/guarantees received for these exposures. Amounts in the table below reflect accounting values according to the regulatory scope of consolidation and include all debt instruments other than held for trading as per our IFRS balance sheet as well as off balance sheet exposures. For further information on the Group's treatment of forbearances, please refer to the "Asset quality" section of our Annual Report 2020 on page 79.

EU CR1-E – Non-performing and forborne exposures

		Dec 31, 2020			Jun 30, 2020		
		010	020	030	010	020	030
	in € m.	Debt securities	Loans and advances	Off-balance-sheet exposures	Debt securities	Loans and advances	Off-balance-sheet exposures
a	Gross carrying amount of performing and non-performing exposures	70,942	598,431	262,170	65,507	644,609	250,164
	of which:						
b	Performing but past due >30 days and <=90 days	21	810	0	0	1,774	0
c	Performing forborne	345	9,667	2,045	0	8,580	311
d	Non-performing:	407	12,379	2,729	451	12,371	1,615
	of which:						
e	Defaulted	407	12,282	2,726	451	12,257	1,611
f	Impaired	375	11,970	2,726	421	12,014	1,605
g	Forborne	207	3,994	228	259	4,463	194
	Accumulated impairment and provisions and negative fair value adjustments due to credit risk						
h	On performing exposures	20	1,209	224	30	1,451	232
i	of which: Forborne	0	130	11	0	134	2
j	On non-performing exposures	33	3,686	199	19	3,524	174
k	of which: Forborne	0	983	29	0	1,072	24
	Collaterals and financial guarantees received						
l	On non-performing exposures	61	4,785	402	64	4,865	83
m	of which: Forborne exposures	10	7,630	208	0	2,959	42

The following tables (NPL1, 3, 4 and 9) are from the EBA guidelines on disclosures of non-performing and forborne exposures (EBA/GL/2018/10) published on December 17, 2018. These are also meant to address "Key disclosure recommendations" related to non-performing loans ("NPLs") as provided by ECB guidance on NPLs (Appendix 7) issued in March 2017. Table NPL1 shows credit quality of forborne exposures broken down on type of counterparties. The exposure is further split between "Performing", "Non-performing", "Defaulted" and "Impaired" exposures with the provisions, collateral and guarantees against them. Table NPL4 shows performing and non-performing exposures and their related provisions. In addition, the exposure is split between IFRS 9 stages and type of counterparties. Table NPL3 shows credit quality of performing and non-performing exposures by buckets of past due days. Overdue refers to the unpaid contractual agreed payments of principal or interest by the borrower. In general, exposure refers to an asset or an off-balance sheet item which gives rise to credit risk and amounts shown are based on IFRS accounting according to the regulatory scope of consolidation. Table NPL9 provides information on the instruments that were cancelled in exchange for the collateral obtained by taking possession and on the value of the collateral obtained by taking possession. The split provides details on the accumulated “Value at initial recognition” and “Accumulated negative changes” of the collateral obtained.

NPL1 – Credit quality of forborne exposures

	Dec 31, 2020							
	Gross carrying amount of forborne exposures				Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions		Collateral received and financial guarantees received on forborne exposures	
in € m.	Performing forborne	Non-performing forborne	Non-performing forborne, of which defaulted	Non-performing forborne, of which impaired	on performing forborne exposures	on non-performing forborne exposures	Total	of which, non-performing exposures with forbearance measures
Loans and advances	9,667	3,994	3,939	3,927	130	983	7,630	1,664
Central banks	0	0	0	0	0	0	0	0
General governments	29	200	200	200	0	7	212	184
Credit institutions	0	10	10	10	0	1	0	0
Other financial corporations	1,255	119	118	118	11	24	942	65
Non-financial corporations	7,042	2,230	2,203	2,191	87	655	4,975	678
Households	1,340	1,435	1,408	1,408	32	297	1,502	737
Debt securities	345	207	207	207	0	0	10	0
Loan commitments given	2,045	228	225	225	11	29	208	10
Total	12,057	4,429	4,371	4,359	141	1,012	7,848	1,674

in € m.	Gross carrying amount of forborne exposures: Performing forborne	Gross carrying amount of forborne exposures: Non-performing forborne	Gross carrying amount of forborne exposures: Non-performing forborne, of which defaulted	Gross carrying amount of forborne exposures: Non-performing forborne, of which impaired	Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions: on performing forborne exposures	Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions: on non-performing forborne exposures	Collateral received and financial guarantees received on forborne exposures: Total	Collateral received and financial guarantees received on forborne exposures: of which, non-performing exposures with forbearance measures
								Jun 30, 2020
Loans and advances	8,580	4,463	4,376	4,367	134	1,072	2,959	2,138
Central banks	0	0	0	0	0	0	0	0
General governments	0	212	212	212	0	9	194	194
Credit institutions	0	0	0	0	0	0	0	0
Other financial corporations	1,280	84	83	82	14	56	61	22
Non-financial corporations	5,798	2,954	2,921	2,913	89	736	1,838	1,355
Households	1,503	1,214	1,160	1,160	31	271	866	567
Debt securities	0	259	259	259	0	0	0	0
Loan commitments given	311	194	191	191	2	24	29	3
Total	8,892	4,916	4,826	4,816	136	1,096	2,988	2,141

NPL9 – Collateral obtained by taking possession and execution processes

	in € m.	Dec 31, 2020: a Collateral obtained by taking possession: Value at initial recognition	Dec 31, 2020: b Collateral obtained by taking possession: Accumulated negative changes	Jun 30, 2020: a Collateral obtained by taking possession: Value at initial recognition	Jun 30, 2020: b Collateral obtained by taking possession: Accumulated negative changes
1	Property, plant and equipment (PP&E)	**0**	**0**	0	0
2	Other than PP&E	**55**	**20**	56	20
3	Residential immovable property	47	18	47	18
4	Commercial immovable property	8	2	8	2
5	Movable property (auto, shipping, etc.)	0	0	0	0
6	Equity and debt instruments	0	0	0	0
7	Other	0	0	0	0
8	Total	**55**	**20**	56	20

NPL3 - Credit quality of performing and non-performing exposures by past due days

													Dec 31, 2020
	Performing exposures			Non-performing exposure									
in € m.	Total	Not past due or past due <= 30 days	Past due >30d and <=90d	Total	Unlikely to pay that are not past due or past due <= 90d	Past due >90d and <=180d	Past due >180d and <=1yr	Past due >1yr and <=2yrs	Past due >2 and <=5 yrs	Past due >5 and <=7yrs	Past due >7 years	of which defaulted	of which impaired
Loans and advances													
Central banks	2,671	2,671	0	0	0	0	0	0	0	0	0	0	0
General governments	13,108	13,075	33	229	227	0	0	0	0	0	1	229	229
Credit institutions	38,299	38,299	0	10	10	0	0	0	0	0	0	10	10
Other financial corporations	158,456	158,431	25	926	746	9	9	18	140	1	3	912	757
Non-financial corporations	172,894	172,653	241	6,612	4,623	541	253	382	314	193	307	6,557	6,401
Households	200,624	200,114	510	4,602	2,481	332	542	462	463	105	218	4,574	4,573
Total Loans and advances	586,053	585,243	810	12,379	8,087	882	804	862	916	299	529	12,282	11,970
Debt securities													
Central banks	817	817	0	0	0	0	0	0	0	0	0	0	0
General governments	54,246	54,246	0	0	0	0	0	0	0	0	0	0	0
Credit institutions	5,701	5,701	0	0	0	0	0	0	0	0	0	0	0
Other financial corporations	5,602	5,602	0	47	47	0	0	0	0	0	0	47	17
Non-financial corporations	4,169	4,148	21	360	360	0	0	0	0	0	0	360	358
Total Debt securities	70,535	70,514	21	407	407	0	0	0	0	0	0	407	375
Off-balance sheet exposures													
Central banks	52	0	0	0	0	0	0	0	0	0	0	0	0
General governments	3,256	0	0	7	0	0	0	0	0	0	0	7	7
Credit institutions	6,122	0	0	0	0	0	0	0	0	0	0	0	0
Other financial corporations	37,078	0	0	81	0	0	0	0	0	0	0	81	81
Non-financial corporations	181,407	0	0	2,605	0	0	0	0	0	0	0	2,602	2,602
Households	31,525	0	0	35	0	0	0	0	0	0	0	35	35
Total Off-balance sheet exposures	259,440	0	0	2,729	0	0	0	0	0	0	0	2,726	2,726
Total	916,028	655,756	831	15,515	8,494	882	804	862	916	299	529	15,415	15,071

Jun 30, 2020

in € m.	Performing exposures Total	Performing exposures Not past due or past due <= 30 days	Performing exposures Past due >30d and <=90d	Non-performing exposure Total	Unlikely to pay that are not past due or past due <= 90d	Past due >90d and <=180d	Past due >180d and <=1yr	Past due >1yr and <=2yrs	Past due >2 and <=5 yrs	Past due >5 and <=7yrs	Past due >7 years	of which defaulted	of which impaired
Loans and advances													
Central banks	3,687	3,687	0	0	0	0	0	0	0	0	0	0	0
General governments	16,657	16,657	0	267	264	2	0	0	0	0	1	255	255
Credit institutions	50,374	50,374	0	3	3	0	0	0	0	0	0	3	3
Other financial corporations	174,077	174,014	64	1,366	1,269	31	30	20	10	2	3	1,365	1,224
Non-financial corporations	189,881	189,592	289	6,351	4,463	538	285	261	362	144	297	6,306	6,205
Households	197,562	196,141	1,421	4,384	2,272	437	450	434	448	112	232	4,328	4,328
Total Loans and advances	632,239	630,465	1,774	12,371	8,271	1,007	765	715	821	258	533	12,257	12,014
Debt securities													
Central banks	1,298	1,298	0	0	0	0	0	0	0	0	0	0	0
General governments	44,437	44,437	0	0	0	0	0	0	0	0	0	0	0
Credit institutions	8,309	8,309	0	0	0	0	0	0	0	0	0	0	0
Other financial corporations	6,221	6,221	0	58	58	0	0	0	0	0	0	58	56
Non-financial corporations	4,791	4,791	0	393	393	0	0	0	0	0	0	393	365
Total Debt securities	65,056	65,056	0	451	451	0	0	0	0	0	0	451	421
Off-balance sheet exposures													
Central banks	50	0	0	0	0	0	0	0	0	0	0	0	0
General governments	2,791	0	0	0	0	0	0	0	0	0	0	0	0
Credit institutions	4,764	0	0	27	0	0	0	0	0	0	0	27	27
Other financial corporations	38,870	0	0	21	0	0	0	0	0	0	0	21	21
Non-financial corporations	170,098	0	0	1,518	0	0	0	0	0	0	0	1,514	1,508
Households	31,975	0	0	50	0	0	0	0	0	0	0	50	50
Total Off-balance sheet exposures	248,549	0	0	1,615	0	0	0	0	0	0	0	1,611	1,605
Total	945,844	695,521	1,774	14,437	8,722	1,007	765	715	821	258	533	14,319	14,040

NPL4 - Performing and non-performing exposures and related provisions

Dec 31, 2020

	Gross carrying amount/nominal amount						Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions								
	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				Collaterals and financial guarantees received on	
in € m.	Total	of which: stage 1	of which: stage 2	Total	of which: stage 2	of which: stage 3	Total	of which: stage 1	of which: stage 2	Total	of which: stage 2	of which: stage 3	Accumulated partial write-off	performing exposures	non-performing exposures
Loans and advances															
Central banks	2,671	2,671	0	0	0	0	0	0	0	0	0	0	0	2,211	0
General governments	13,108	12,485	623	229	0	229	12	7	5	11	0	11	0	2,545	208
Credit institutions	38,299	37,801	498	10	0	10	19	19	1	1	0	1	0	11,750	0
Other financial corporations	158,456	154,156	4,305	926	1	757	68	41	27	68	0	107	35	85,303	113
Non-financial corporations	172,894	159,898	12,980	6,612	26	6,401	439	214	225	2,135	0	2,183	197	86,225	2,361
of which: SMEs	27,799	24,801	2,997	1,192	5	1,187	82	28	54	563	0	563	16	18,900	341
Households	200,624	183,756	16,868	4,602	29	4,573	671	272	399	1,471	1	1,470	15	138,804	2,102
Total Loans and advances	586,053	550,766	35,275	12,379	56	11,970	1,209	553	656	3,686	2	3,771	247	326,838	4,785
Debt securities															
Central banks	817	817	0	0	0	0	0	0	0	0	0	0	0	0	0
General governments	54,246	53,101	26	0	0	0	5	4	0	0	0	0	0	0	0
Credit institutions	5,701	5,696	4	0	0	0	0	0	0	0	0	0	0	0	0
Other financial corporations	5,602	5,488	114	47	0	17	2	1	1	12	0	0	0	172	0
Non-financial corporations	4,169	3,875	1,414	360	0	358	13	12	1	21	0	22	0	68	61
Total Debt securities	70,535	68,977	1,557	407	0	375	20	18	3	33	0	22	0	240	61
Off-balance sheet exposures															
Central banks	52	44	8	0	0	0	0	0	0	0	0	0	0	16	0
General governments	3,256	3,074	182	7	0	7	2	1	1	0	0	0	0	140	7
Credit institutions	6,122	6,097	25	0	0	0	1	1	0	0	0	0	0	221	0
Other financial corporations	37,078	36,619	460	81	0	81	13	12	2	0	0	0	0	4,234	1
Non-financial corporations	181,407	173,996	7,133	2,605	8	2,602	178	117	62	193	0	193	0	18,663	382
Households	31,525	30,355	1,170	35	0	35	29	18	10	5	0	7	0	7,055	12
Total Off-balance sheet exposures	259,440	250,185	8,978	2,729	8	2,726	224	148	74	199	0	200	0	30,328	402
Total	916,028	869,929	45,810	15,515	64	15,071	1,453	719	733	3,918	2	3,994	247	357,406	5,248

Jun 30, 2020

	Gross carrying amount/nominal amount						Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions								
	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				Collaterals and financial guarantees received on	
in € m.	Total	of which: stage 1	of which: stage 2	Total	of which: stage 2	of which: stage 3	Total	of which: stage 1	of which: stage 2	Total	of which: stage 2	of which: stage 3	Accumulated partial write-off	performing exposures	non-performing exposures
Loans and advances															
Central banks	3,687	3,474	213	0	0	0	0	0	0	0	0	0	0	3,482	0
General governments	16,657	15,289	1,368	267	8	255	10	4	6	13	0	13	0	2,164	233
Credit institutions	50,374	46,218	4,156	3	0	3	21	19	3	0	0	0	0	11,742	0
Other financial corporations	174,077	163,224	10,853	1,366	3	1,363	131	87	44	228	0	197	4	85,576	113
Non-financial corporations	189,881	174,041	15,840	6,351	34	6,306	572	267	309	1,948	1	1,944	108	91,333	2,326
of which: SMEs	26,807	24,075	2,642	971	8	956	91	30	61	557	0	555	10	17,603	285
Households	197,562	181,223	16,339	4,384	56	4,328	717	295	423	1,334	3	1,331	14	150,195	2,195
Total Loans and advances	632,239	583,470	48,769	12,371	101	12,255	1,451	671	784	3,524	3	3,485	126	344,493	4,865
Debt securities															
Central banks	1,298	1,247	51	0	0	0	0	0	0	0	0	0	0	0	0
General governments	44,437	44,106	331	0	0	0	9	8	0	0	0	0	0	0	0
Credit institutions	8,309	8,211	97	0	0	0	1	1	0	0	0	0	0	0	0
Other financial corporations	6,221	6,212	10	58	0	58	4	2	2	17	0	17	0	213	0
Non-financial corporations	4,791	3,945	846	393	0	393	16	2	14	2	0	2	0	68	64
Total Debt securities	65,056	63,721	1,335	451	0	451	30	14	16	19	0	19	0	281	64
Off-balance sheet exposures															
Central banks	50	34	16	0	0	0	0	0	0	0	0	0	0	27	0
General governments	2,791	1,483	1,309	0	0	0	2	1	1	0	0	0	0	131	0
Credit institutions	4,764	3,462	1,302	27	0	27	2	1	1	0	0	0	0	144	0
Other financial corporations	38,870	37,005	1,866	21	0	21	30	14	5	5	0	5	0	4,615	1
Non-financial corporations	170,098	162,523	7,108	1,518	9	1,508	170	103	67	161	0	161	0	17,279	81
Households	31,975	30,551	1,424	50	0	50	28	6	12	9	0	14	0	3,923	1
Total Off-balance sheet exposures	248,549	235,057	13,024	1,615	9	1,605	232	125	86	174	0	180	0	26,119	83
Total	945,844	882,248	63,129	14,437	110	14,311	1,713	810	886	3,717	3	3,683	126	370,893	5,013

Minimum loss coverage for Non Performing Exposure

Minimum loss coverage for Non Performing Exposure under Pillar 1

CRR based minimum loss coverage for non-performing exposures requirements Regulation (EU) 2019/630 amending the CRR (Regulation (EU) No 575/2013) was published in the Official Journal of the EU on April 25, 2019. This regulation established a prudential treatment for NPEs arising from loans originated from April 26, 2019 onwards ("CRR - NPE Flow") and represents a Pillar 1 measure which is legally binding and applies to all banks established in the EU.

The CRR regulation on minimum loss coverage for non-performing exposure does not focus on NPEs arising from loans originated before April 26, 2019 ("CRR - NPE Stock").

We expect first impacts on our CET 1 ratio from the CRR based minimum loss coverage regulation in the middle of 2021, as the regulation applies to newly originated assets after the application date (April 25, 2019) and foresee a two year grace period before the defined minimum loss coverage requirements applies. This grace period has not yet passed.

Minimum loss coverage for Non Performing Exposure under Pillar 2

Non Performing Exposures arising from clients defaulting after April 1, 2018

In March 2018 ECB published its "Addendum to the ECB Guidance to banks on non-performing loans: supervisory expectations for prudential provisioning of non-performing exposures". The guidance focus on NPEs arising from clients defaulting after April 1, 2018 ("ECB – NPE Flow"). Like for the CRR based NPE regulation (CRR – NPE Flow) a time dependent minimum loss coverage is required. The ECB guidance represents a Pillar 2 measure and its application is subject to a supervisory dialog between the bank and the ECB in context of the annual SREP process.

The ECB based NPE guidance ("ECB – NPE Flow") and the CRR based NPE regulation (CRR – NPE Flow) differ in the following three key aspects:

– Timing of application: Exposures defaulting after April 1, 2018 are in scope of the ECB based guidance (ECB – NPE Flow), but are only in scope of the CRR based NPE regulation (CRR – NPE Flow) if loans are originated after April 26, 2019.

– Treatment of loans in the Trading Book / Traded Assets: CRR based NPE regulation (CRR – NPE Flow) excludes all loans in the regulatory Trading Book whereas the ECB based NPE guidance (ECB – NPE Flow) excludes Traded Assets in accordance with the accounting classifications.

– Treatment of Forbearance Measuring CRR based NPE regulation (CRR – NPE Flow) considers a one year freeze period of minimum loss coverage for exposures where a forbearance measure has been granted. This freeze period for loans with forbearance measure does not exist under the ECB based NPE guidance (ECB – NPE Flow).

As long as the aforementioned differences exist, Deutsche Bank will report in the following table all NPE exposures under the ECB based NPE guidance (ECB – NPE Flow), which are not covered in the CRR based NPE regulation (CRR – NPE Flow).

The following table provides an overview on Deutsche Bank's ECB NPE Flow as of December 31, 2020, not covered under CRR based NPE regulation (CRR NPE Flow):

ECB NPE Flow

	Dec 31, 2020			
	Time passed since exposures classified as non-performing			
in € m.	up to 2yrs	>2 and <=9yrs	>9yrs	Total
Exposure value	6,974	1,419	0	8,393
Total minimum coverage requirement	0	333	0	333
Total provisions and adjustments or deductions (uncapped)	1,502	545	0	2,047
Total provisions and adjustments or deductions (capped)	0	250	0	250
Applicable amount of insufficient coverage	0	83	0	83

Non Performing Exposures arising from clients defaulting before 1 April 2018

ECB announced in a press release on July 11, 2018 that legacy stock of NPEs would be addressed by discussing bank-specific supervisory expectations for the provisioning of NPEs.

In August 2019 ECB published its "Communication on supervisory coverage expectations for NPEs" where introducing a minimum loss coverage expectation for NPEs arising from clients defaulting before April 1, 2018 (ECB – NPE Stock).

In a first step, banks were allocated to three comparable groups on the basis of the bank's net NPL ratios as of end-2017 and in a second step an assessment of capacity regarding the potential impact was carried out for each individual bank with a horizon of end-2026.

Deutsche Bank has been assigned to Group 1 which requires a full applicability of 100 % minimum loss coverage by year end 2024 for secured loans respectively by year end 2023 for unsecured loans.

The following table provides an overview on Deutsche Bank's ECB - NPE Stock as of December 31, 2020.

ECB - NPE Stock

				Dec 31, 2020
	Time passed since exposures classified as non-performing			
in € m.	up to 2yrs	>2 and <=9yrs	>9yrs	Total
Exposure value	0	7,613	6,902	14,514
Total minimum coverage requirement	0	4,496	4,817	9,313
Total provisions and adjustments or deductions (uncapped)	0	5,284	6,494	11,777
Total provisions and adjustments or deductions (capped)	0	4,034	4,622	8,656
Applicable amount of insufficient coverage	0	463	195	657

The shortfall between the minimum loss coverage requirements for non-performing exposure for EDB – NPE Flow and ECB - NPE Stock and the risk reserves recorded in line with IFRS 9 for defaulted (Stage 3) assets amounted to € 740 million as of December 31, 2020 and was deducted from CET 1. This additional CET 1 charge can be considered as additional loss reserve and let to a € 499 million RWA relief.

Exposures subject to measures applied in response to the COVID-19 pandemic

COVID-19 template 1 provides details on loans and advances subject to EBA-compliant moratoria (legislative and non-legislative). The template provides a breakdown of the gross carrying amount and the related loss allowances by the status of the exposure (performing and non-performing). In addition, exposures for which a grace period of capital and interest was granted and exposures with forbearance measures are reported. For performing exposures, 'instruments with significant increase in credit risk since initial recognition but not credit-impaired (Stage 2)'; and for non-performing exposures, those that are 'unlikely to pay that are not past-due or past-due less than or equal to 90 days' are reported. Public guarantee received in the context of the COVID-19 pandemic; the inflows to non-performing exposures and the economic loss resulting from the application of these measures round off the table.

COVID-19 template 1: Information on loans and advances subject to legislative and non-legislative moratoria[1]

																Dec 31, 2020
		b	c	d	e	f	g	a	i	j	k	l	m	n	h	o
		Gross carrying amount							Accumulated impairment, accumulated negative changes in fair value due to credit risk							
		Performing			Non-performing				Performing			Non-performing				
	in € m.	Total	Of which: exposures with forbearance measures	Of which: Instruments with significant increase in credit risk since initial recognition but not credit-impaired (Stage 2)	Total	Of which: exposures with forbearance measures	Of which: Unlikely to pay that are not past-due or past-due <= 90 days	Total	Total	Of which: exposures with forbearance measures	Of which: Instruments with significant increase in credit risk since initial recognition but not credit-impaired (Stage 2)	Total	Of which: exposures with forbearance measures	Of which: Unlikely to pay that are not past-due or past-due <= 90 days	Total	Gross carrying amount Inflows to non-performing exposures
1	Loans and advances subject to moratorium	618	0	110	28	0	4	646	(5)	0	(3)	(6)	0	(1)	(11)	4
2	of which: Households	205	0	58	23	0	4	228	(3)	0	(2)	(5)	0	(1)	(8)	4
3	of which: Collateralized by residential immovable property	179	0	52	21	0	3	200	(2)	0	(2)	(4)	0	0	(6)	3
4	of which: Non-financial corporations	411	0	52	5	0	0	416	(2)	0	(1)	(1)	0	0	(3)	0
5	of which: Small and Medium-sized Enterprises	330	0	30	4	0	0	334	(1)	0	0	(1)	0	0	(2)	0
6	of which: Collateralized by commercial immovable property	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0

[1] Template 1 includes only loans and advances subject to not expired legislative and non-legislative moratoria (excluding extensions of Italian moratoria).

Jun 30, 2020

		b	c	d	e	f	g	a	i	j	k	l	m	n	h	o
		Gross carrying amount							Accumulated impairment, accumulated negative changes in fair value due to credit risk							
		Performing			Non-performing				Performing			Non-performing				
	in € m.	Total	Of which: exposures with forbearance measures	Of which: Instruments with significant increase in credit risk since initial recognition but not credit-impaired (Stage 2)	Total	Of which: exposures with forbearance measures	Of which: Unlikely to pay that are not past-due or past-due <= 90 days	Total	Total	Of which: exposures with forbearance measures	Of which: Instruments with significant increase in credit risk since initial recognition but not credit-impaired (Stage 2)	Total	Of which: exposures with forbearance measures	Of which: Unlikely to pay that are not past-due or past-due <= 90 days	Total	Gross carrying amount Inflows to non-performing exposures
1	Loans and advances subject to moratorium	3,813	0	513	45	0	14	3,858	(27)	0	(17)	(11)	0	(3)	(37)	0
2	of which: Households	1,102	0	190	32	0	12	1,133	(12)	0	(9)	(7)	0	(3)	(19)	0
3	of which: Collateralized by residential immovable property	801	0	127	25	0	7	826	(3)	0	(3)	(4)	0	(1)	(8)	0
4	of which: Non-financial corporations	2,648	0	315	13	0	2	2,661	(15)	0	(8)	(3)	0	(1)	(19)	0
5	of which: Small and Medium-sized Enterprises	1,101	0	251	7	0	0	1,109	(8)	0	(6)	(2)	0	(0)	(10)	0
6	of which: Collateralized by commercial immovable property	38	0	15	0	0	0	38	(0)	0	(0)	(0)	0	0	(0)	0

[1] Template 1 includes only loans and advances subject to not expired legislative and non-legislative moratoria.

For further details to the type of eligible moratoria, the different sectors and industries in which the eligible moratoria are applied, and any economic losses realized and how these losses are calculated please refer to chapter "Legislative and non-legislative moratoria and public guarantee schemes in light of COVID-19 pandemic" on page 77 of Deutsche Bank's Annual Report 2020.

COVID-19 template 2 provides details on EBA-compliant moratoria (legislative and non-legislative) for loans and advances that meet the requirements described in paragraph 10 of the EBA Guidelines on moratoria. The template provides information on the number of obligors and gross carrying amount of loans and advances subject to different statuses of EBA-compliant moratoria (requested/granted). In addition, the template contains a breakdown by the residual maturity of EBA-compliant moratoria and information on the gross carrying amount of legislative moratoria as per the definition of the EBA Guidelines on moratoria.

COVID-19 template 2: 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
		Number of obligors (in 1,000s)	Gross carrying amount							
						Residual maturity of moratoria				
	in € m. (unless stated otherweise)		Total	Of which: legislative moratoria	Of which: expired	<= 3 months	> 3 and <= 6 months	> 6 and <= 9 months	> 9 and <= 12 months	> 1 yr
1	Loans and advances for which moratorium was offered	105	9,701	–	–	–	–	–		–
2	Loans and advances subject to moratorium (granted)	102	8,649	7,378	8,003	491	122	3	27	3
3	of which: Households	–	5,813	4,856	5,585	107	91	2	25	3
4	of which: Collateralized by residential immovable property	–	4,495	3,921	4,295	82	88	2	25	3
5	of which: Non-financial corporations	–	2,783	2,502	2,368	382	31	1	1	–
6	of which: Small and Medium-sized Enterprises	–	1,220	1,055	887	331	1	1	1	–
7	of which: Collateralized by commercial immovable property	–	155	151	153	1	–	–	–	–

Jun 30, 2020

		a	b	c	d	e	f	g	h	i
		Number of obligors (in 1,000s)	Gross carrying amount							
						Residual maturity of moratoria				
	in € m. (unless stated otherweise)		Total	Of which: legislative moratoria	Of which: expired	<= 3 months	> 3 and <= 6 months	> 6 and <= 9 months	> 9 and <= 12 months	> 1 yr
1	Loans and advances for which moratorium was offered	105	9,702	–	–	–	–	–		–
2	Loans and advances subject to moratorium (granted)	103	8,754	7,860	4,896	3,142	685	6	25	0
3	of which: Households	–	5,499	4,660	4,366	789	324	6	14	0
4	of which: Collateralized by residential immovable property	–	4,056	3,496	3,230	608	203	0	14	–
5	of which: Non-financial corporations	–	3,172	3,117	511	2,350	300	0	11	–
6	of which: Small and Medium-sized Enterprises	–	1,374	1,365	265	855	253	0	0	–
7	of which: Collateralized by commercial immovable property	–	158	157	120	37	1	–	–	–

For further details to the length of moratoria applied and the revision in the length (e.g. extension) of the moratoria on loan repayments please refer to chapter ““Legislative and non-legislative moratoria and public guarantee schemes in light of COVID-19 pandemic” on page 77 of Deutsche Bank’s Annual Report 2020.

COVID-19 template 3 provides details on newly originated loans and advances as referred to in paragraph 15 of EBA GL 2020 07 that are subject to public guarantee schemes that Member States introduced in response to the COVID-19 pandemic. In the case of refinancing of previous debt with a new loan or of repackaging of several debts into a new loan, the new loan recognized in the financial statements is reported in this template provided that it is covered by a public guarantee scheme related to the COVID-19 pandemic. The template provides a breakdown of the gross carrying amount, the forbearance measures and the amount of public guarantees related to loans and advances and the inflows to non-performing exposure.

COVID-19 template 3: Information on newly originated loans and advances provided under newly applicable public guarantee schemes introduced in response to COVID-19 pandemic

					Dec 31, 2020
		a	b	c	d
		Gross carrying amount		Maximum amount of the guarantee that can be considered	Gross carrying amount
	in € m.	Total	of which: forborne	Public guarantees received	Inflows to non-performing exposures
1	Newly originated loans and advances subject to public guarantee schemes	3,546	11	3,095	9
2	of which: Households	30	–	–	0
3	of which: Collateralized by residential immovable property	0	–	–	0
4	of which: Non-financial corporations	3,435	11	2,996	9
5	of which: Small and Medium-sized Enterprises	1,732	–	–	0
6	of which: Collateralized by commercial immovable property	0	–	–	0

					Jun 30, 2020
		a	b	c	d
		Gross carrying amount		Maximum amount of the guarantee that can be considered	Gross carrying amount
	in € m.	Total	of which: forborne	Public guarantees received	Inflows to non-performing exposures
1	Newly originated loans and advances subject to public guarantee schemes	1,171	3	990	0
2	of which: Households	18	–	–	0
3	of which: Collateralized by residential immovable property	0	–	–	0
4	of which: Non-financial corporations	1,148	3	970	0
5	of which: Small and Medium-sized Enterprises	667	–	–	0
6	of which: Collateralized by commercial immovable property	0	–	–	0

For further details to the size, length and the sectoral coverage of the public guarantees as well as the performing, forbearance and non-performing status of these newly originated loans please refer to chapter ““Legislative and non-legislative moratoria and public guarantee schemes in light of COVID-19 pandemic” on page 77 of Deutsche Bank’s Annual Report 2020.

Article 442 (i) CRR - Development of credit risk adjustments and defaulted loans and debt securities

Table EU CR2-A provides information on the development of the Group’s stock of specific credit risk adjustments held against loans and debt securities subject to the credit risk framework that are defaulted or impaired in the second half of 2020 compared to the first half of 2020. Amounts are based on IFRS accounting values according to the regulatory scope of consolidation.

EU CR2-A – Changes in the stock of general and specific credit risk adjustments

		Dec 31, 2020		Jun 30, 2020	
		a	b	a	b
	in € m.	Accumulated specific credit risk adjustment	Accumulated general credit risk adjustment	Accumulated specific credit risk adjustment	Accumulated general credit risk adjustment
1	Opening balance	**3,504**	**0**	3,019	0
2	Increases due to amounts set aside for estimated loan losses during the period	1,052	0	1,162	0
3	Decreases due to amounts reversed for estimated loan losses during the period	(312)	0	(428)	0
4	Decreases due to amounts taken against accumulated credit risk adjustments	(502)	0	(280)	0
5	Transfers between credit risk adjustments	(5)	0	54	0
6	Impact of exchange rate differences	(34)	0	(12)	0
7	Business combinations, including acquisitions and disposals of subsidiaries	0	0	0	0
8	Other adjustments	(19)	0	(11)	0
9	Closing balance	**3,683**	**0**	3,504	0
10	Recoveries on credit risk adjustments recorded directly to the statement of profit or loss	(35)	0	(23)	0
11	Specific credit risk adjustments recorded directly to the statement of profit or loss	0	0	0	0

Accumulated specific credit risk adjustments held against defaulted or impaired loans and debt securities increased by € 179 million or 5 % mainly driven by Private Bank.

Table EU CR2-B provides information on the development of the Group’s defaulted or impaired loans and debt securities subject to the credit risk framework for the second half of 2020 compared to the first half of 2020. Amounts are based on IFRS accounting values according to the regulatory scope of consolidation.

EU CR2-B – Changes in the stock of defaulted and impaired loans and debt securities

		Dec 31, 2020	Jun 30, 2020
		a	a
	in € m.	Gross carrying value defaulted exposures	Gross carrying value defaulted exposures
1	Opening balance	**13,157**	10,202
2	Loans and debt securities that have defaulted or impaired since the last reporting period	2,724	4,346
3	Returned to non-defaulted status	(1,689)	(1,070)
4	Amounts written off	(502)	(280)
5	Other changes	(236)	(42)
6	Closing balance	**13,454**	13,157

…

Defaulted or impaired loans and debt securities subject to the credit risk framework remained roughly stable with a slight increase of € 298 million or 2 %.

For IFRS-based asset quality information please refer to the section “Asset quality” on page 79 of our Annual Report 2020.

General qualitative information on credit risk mitigation

Introduction

Risk-weighted assets and regulatory capital requirements can be managed actively by credit risk mitigation techniques. As a prerequisite for recognition in regulatory calculations, we must adhere to certain minimum requirements as stipulated in the CRR regarding collateral management, monitoring processes and legal enforceability.

The range of collateral being eligible for regulatory recognition is dependent predominantly on the regulatory capital calculation method used for a specific risk position. The principle is that a higher degree of sophistication with regard to the underlying methodology generally leads to a wider range of admissible collateral and options to recognize protection via guarantees and credit derivatives. However, also the minimum requirements to be adhered to and the mechanism available to reflect the risk mitigation benefits are predominantly a function of the regulatory calculation method applied.

The advanced IRBA generally accepts all types of financial collateral, as well as real estate, collateral assignments and other physical collateral. In our application of the advanced IRBA, there is basically no limitation to the range of accepted collateral as long as we can demonstrate to the competent authorities that reliable estimates of the collateral values can be generated and that basic requirements are fulfilled.

The same principle holds true for taking benefits from guarantee and credit derivative arrangements. Within the advanced IRBA, again there are generally no limitations with regard to the range of eligible collateral providers as long as some basic minimum requirements are met. However, collateral providers' credit quality and other relevant factors are incorporated through our internal models.

In our advanced IRBA calculations financial and other collateral is generally considered through an adjustment to the applicable LGD as the input parameter for determining the risk weight. For recognizing protection from guarantees and credit derivatives, generally a PD substitution approach is applied, i.e., within the advanced IRBA risk-weight calculation the PD of the borrower is replaced by the protection seller's or guarantor's PD. However, for certain guaranteed exposures and certain protection providers the so-called double default treatment is applicable. The double default effect implies that for a guaranteed exposure a loss only occurs if the originator and the guarantor fail to meet their obligations at the same time.

The foundation IRBA sets stricter limitations with regard to the eligibility of credit risk mitigation compared to the advanced IRBA but allows for consideration of financial collateral, guarantees and credit derivatives as well as other foundation IRBA-eligible collateral like mortgages and security assignments.

The financial collateral recognized in the foundation IRBA essentially comprises cash, bonds and other securities related to repo lending.

In the standardized approach, collateral recognition is limited to eligible financial collateral, such as cash, gold bullion, certain debt securities, equities and CIUs, in many cases only with their volatility-adjusted collateral value. In its general structure, the standardized approach provides a preferred (lower) risk-weight for "claims secured by real estate property" while real estate asset is not considered as an explicit collateral item under the standardized approach. Further limitations must be considered with regard to eligible guarantee and credit derivative providers.

In order to reflect risk mitigation techniques in the calculation of capital requirements we apply the financial collateral comprehensive method since the higher sophistication of that method allows a broader range of eligible collateral. Within this approach, financial collateral is reflected through a reduction in the exposure value of the respective risk position, while protection taken in the form of guarantees and credit derivatives is considered by means of a substitution, i.e., the borrower's risk weight is replaced by the risk weight of the protection provider.

Article 453 (a) CRR - Use of on- and off-balance sheet netting

Please refer to the Annual Report 2020 section "Managing and mitigation of credit risk" on page 88.

Article 453 (b) CRR - Collateral evaluation and management

Please refer to the Annual Report 2020 section "Managing and mitigation of credit risk" on page 88.

Article 453 (c) CRR - Main types of collateral

Please refer to the Annual Report 2020 section "Managing and mitigation of credit risk" on page 88.

Article 453 (d) CRR - Main types of guarantor and credit derivative counterparties

Please refer to the Annual Report 2020 section "Managing and mitigation of credit risk" on page 88.

Article 453 (e) CRR - Risk concentrations within credit risk mitigation

Please refer to the Annual Report 2020 section "Managing and mitigation of credit risk" subsection "Concentrations within credit risk mitigation" on page 91.

General quantitative information on credit risk mitigation

Article 453 (f-g) CRR - Overview of credit risk mitigation techniques

The table EU CR3 below shows a breakdown of unsecured and secured credit risk exposures and credit risk exposures secured by various credit risk mitigants for all loans and debt securities including the carrying amounts of the total population which are in default. Exposures unsecured (column a) represent the carrying amount of credit risk exposures (net of credit risk adjustments) that do not benefit from a credit risk mitigation (CRM) technique, regardless of whether this technique is recognized in the CRR. Exposures secured (column b) represent the carrying amount of exposures that have at least one CRM mechanism (collateral, financial guarantees, credit derivatives) associated with them. Exposure secured by various credit risk mitigants (column c-e) are the carrying amount of exposures (net of credit risk adjustments) partly or totally secured by collateral, financial guarantees and credit derivatives, whereby only the secured portion of the overall exposure is presented. The allocation of the carrying amount of multisecured exposures to their different CRM mechanisms is made by order of priority, starting with the CRM mechanism expected to be called first in the event of a loss, and within the limits of the carrying amount primarily observed of the secured exposures. Moreover, no overcollateralization is considered.

EU CR3 – CRM techniques – Overview

						Dec 31, 2020
		a	b	c	d	e
	in € m.	Exposures unsecured: Carrying amount	Exposures secured: Carrying amount	Exposures secured by collateral	Exposures secured by financial guarantees	Exposures secured by credit derivatives
1	Total Loans	115,493	304,758	230,417	32,349	0
2	Total Debt securities	68,978	338	313	0	0
3	Total exposures	184,471	305,096	230,730	32,349	0
4	of which: defaulted	4,350	5,421	4,087	668	0

…

						Jun 30, 2020
		a	b	c	d	e
	in € m.	Exposures unsecured: Carrying amount	Exposures secured: Carrying amount	Exposures secured by collateral	Exposures secured by financial guarantees	Exposures secured by credit derivatives
1	Total Loans	132,935	298,287	247,618	31,094	0
2	Total Debt securities	62,796	377	346	0	0
3	Total exposures	195,731	298,665	247,964	31,094	0
4	of which: defaulted	4,485	5,168	4,157	616	0

Total exposure as December 31, 2020 decreased in comparison to June 30, 2020, mainly in loans at amortized cost. This was mainly attributable to increased repayment driven by strong market conditions. The decreases were partially offset by an increase in debt securities mainly driven by sovereign bond purchases as part of managing our strategic liquidity reserve.

The table CRM techniques by exposure class below shows a breakdown of unsecured and secured credit risk exposures and credit risk exposures secured by various credit risk mitigants broken down by exposure class. Exposures unsecured (column a) represent the carrying amount of credit risk exposures (net of credit risk adjustments) that do not benefit from a credit risk mitigation (CRM) technique, regardless of whether this technique is recognized in the CRR. Exposures secured (column b) represent the carrying amount of exposures that have at least one CRM mechanism (collateral, financial guarantees, credit derivatives) associated with them. Exposure secured by various credit risk mitigants (column c-e) are the carrying amount of exposures (net of credit risk adjustments) partly or totally secured by collateral, financial guarantees and credit derivatives, whereby only the secured portion of the overall exposure is presented. The breakdown into the exposure classes follows those as defined for the IRBA (i.e. combining the advanced and foundation IRB) as well as the standardized approach. In the IRB approach, the line item “Central governments and central banks” includes exposures to regional governments or local authorities, public sector entities, multilateral development banks and international organizations. The exposure class “Other items” within the standardized approach includes all exposures not covered in the other categories.

The table CRM techniques by exposure class shows a breakdown of unsecured and secured credit risk exposures and credit risk exposures secured by various credit risk mitigants broken down by exposure class whereas table EU CR3 shows a breakdown of unsecured and secured credit risk exposures and credit risk exposures secured by various credit risk mitigants for all loans and debt securities including the carrying amounts of the total population in default.

CRM techniques by exposure class

					Dec 31, 2020
	a	b	c	d	e
in € m.	Exposures unsecured: Carrying amount	Exposures secured: Carrying amount	Exposures secured by collateral	Exposures secured by financial guarantees	Exposures secured by credit derivatives
Advanced IRBA					
Central governments and central banks	106,413	2,976	26	2,319	0
Institutions	18,649	1,899	1,251	394	0
Corporates	243,079	150,273	90,185	31,481	0
of which:					
SMEs	11,505	11,934	6,050	3,362	0
Specialized lending	7,913	33,304	28,298	961	0
Other	223,661	105,036	55,838	27,157	0
Retail	60,341	170,254	132,484	2,984	0
of which:					
Secured by real estate property SMEs	940	8,064	6,624	189	0
Secured by real estate property non-SMEs	13,575	155,350	123,561	265	0
Qualifying revolving	15,455	43	22	0	0
Other retail SMEs	3,178	2,985	371	1,940	0
Other retail non-SMEs	27,193	3,811	1,907	590	0
Equity	2,636	0	0	0	0
Other non-credit obligation asset	12,176	0	0	0	0
Total advanced IRBA	443,294	325,402	223,947	37,177	0
Foundation IRBA					
Central governments and central banks	0	0	0	0	0
Institutions	3	0	0	0	0
Corporates	7,438	3,558	104	1,995	0
of which:					
SMEs	135	48	0	42	0
Specialized lending	328	1,176	0	0	0
Other	6,974	2,334	104	1,953	0
Total foundation IRBA	7,441	3,559	104	1,996	0
Standardized approach					
Central governments or central banks	121,064	1	1	0	0
Regional governments or local authorities	6,267	29	22	0	0
Public sector entities	2,158	0	0	0	0
Multilateral development banks	1,380	0	0	0	0
International organizations	785	0	0	0	0
Institutions	1,479	2	0	1	0
Corporates	10,828	5,654	3,842	220	0
Retail	2,474	822	621	142	0
Secured by mortgages on immovable property	108	4,327	3,662	13	0
Exposures in default[1]	491	508	0	0	0
Items associated with particularly high risk	12	142	88	36	0
Covered bonds	0	0	0	0	0
Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0
Collective investments undertakings (CIU)	0	0	0	0	0
Equity exposures	0	0	0	0	0
Other items	2	0	0	0	0
Total standardized approach	146,558	10,977	8,237	412	0
Total	597,293	339,937	232,287	39,585	0

[1] In line with EBA guidance (Q&A 2017_3481) we present the total of defaulted exposure, but also include assignments into their respective exposure classes. In order to avoid double counting of exposures, the Total standardized approach figures don't take into account figures disclosed under row Exposure in default.

					Jun 30, 2020
	a	b	c	d	e
in € m.	Exposures unsecured: Carrying amount	Exposures secured: Carrying amount	Exposures secured by collateral	Exposures secured by financial guarantees	Exposures secured by credit derivatives
Advanced IRBA					
Central governments and central banks	102,464	3,570	37	2,795	0
Institutions	19,608	1,716	1,206	308	0
Corporates	241,995	160,552	97,869	33,549	0
of which:					
SMEs	10,815	13,337	7,904	2,868	0
Specialized lending	8,407	38,113	33,498	904	0
Other	222,772	109,103	56,467	29,776	0
Retail	68,598	160,900	144,763	2,595	0
of which:					
Secured by real estate property SMEs	1,028	7,974	6,620	175	0
Secured by real estate property non-SMEs	19,605	147,023	135,683	565	0
Qualifying revolving	15,598	49	27	0	0
Other retail SMEs	3,297	2,586	385	1,497	0
Other retail non-SMEs	29,070	3,268	2,049	358	0
Equity	2,431	0	0	0	0
Other non-credit obligation asset	9,211	0	0	0	0
Total advanced IRBA	444,307	326,737	243,875	39,247	0
Foundation IRBA					
Central governments and central banks	0	0	0	0	0
Institutions	0	0	0	0	0
Corporates	5,872	1,576	1,021	555	0
of which:					
SMEs	176	111	105	6	0
Specialized lending	624	916	916	0	0
Other	5,071	549	0	549	0
Total foundation IRBA	5,872	1,576	1,021	555	0
Standardized approach					
Central governments or central banks	112,154	1	1	0	0
Regional governments or local authorities	6,663	26	21	0	0
Public sector entities	3,797	0	0	0	0
Multilateral development banks	1,456	0	0	0	0
International organizations	795	0	0	0	0
Institutions	1,369	0	0	0	0
Corporates	9,685	5,915	3,908	95	0
Retail	2,955	635	579	37	0
Secured by mortgages on immovable property	45	4,196	3,826	17	0
Exposures in default[1]	629	406	366	7	0
Items associated with particularly high risk	11	192	259	5	0
Covered bonds	0	0	0	0	0
Claims on institutions and corporates with a short-term credit assessment	36	0	0	0	0
Collective investments undertakings (CIU)	0	0	0	0	0
Equity exposures	49	0	0	0	0
Other items	1	0	0	0	0
Total standardized approach	139,016	10,966	8,593	155	0
Total	589,195	339,280	253,489	39,957	0

[1] In line with EBA guidance (Q&A 2017_3481) we present the total of defaulted exposure, but also include assignments into their respective exposure classes. In order to avoid double counting of exposures, the Total standardized approach figures don't take into account figures disclosed under row Exposure in default.

Total exposure as of December 31, 2020 increased in comparison to June 30, 2020. The overall increase in central government and central bank across IRBA and Standardized approach was primarily driven by funds received from the third TLTRO refinancing program of the ECB, the sale of selected hold-to-collect assets and a decrease in securities purchased under resale agreements and securities loaned across all applicable balance sheet categories. The other movements in retail, multilateral development banks and international organizations were driven by loans at amortized cost and debt securities, due to the reasons explained in the above table EU CR3.

Credit risk and credit risk mitigation in the standardized approach

Qualitative information on the use of the standardized approach

We treat a subset of our credit risk exposures within the standardized approach. The standardized approach measures credit risk either pursuant to fixed risk weights, which are regulatory predefined or determined through the application of external ratings.

We assign certain credit exposures permanently to the standardized approach in accordance with Article 150 CRR. These are predominantly exposures to the Federal Republic of Germany and other German public sector entities as well as exposures to central governments of other European Member States that meet the required conditions. These exposures make up the majority of the exposures carried in the standardized approach and receive predominantly a risk weight of zero percent. For internal purposes, however, these exposures are subject to an internal credit assessment and fully integrated in the risk management and economic capital processes.

In line with Article 150 CRR and Section 10 SolvV, we assign further exposures permanently to the standardized approach. This population comprises several small-sized portfolios, which are considered to be immaterial on a stand-alone basis for inclusion in the IRBA.

Article 444 (a-b) CRR - External ratings in the standardized approach

In order to calculate the regulatory capital requirements under the standardized approach, we use eligible external ratings from Standard & Poor’s, Moody’s, Fitch Ratings and in some cases from DBRS. Ratings are applied to all relevant exposure classes in the standardized approach. If more than one rating is available for a specific counterparty, the selection criteria as set out in Article 138 CRR are applied in order to determine the relevant risk weight for the capital calculation.

Article 444 (c) CRR - Usage of issue ratings

Given the low volume of exposures covered under the standardized approach and the high percentage of (externally rated) central government exposures therein, we principally do not consider impacts from inferring issue ratings from issuer ratings.

Article 444 (d) CRR - Mapping of external rating to credit quality steps

This information does not need to be disclosed separately as Deutsche Bank Group complies with the standard association published by EBA.

Please refer to section “Article 452 (b)(i) CRR - Mapping of internal rating scales to external ratings” in this Pillar 3 Report on page 97 for a mapping of internal ratings and probability of defaults.

Quantitative information on the use of the standardized approach

Article 444 (e) CRR - Standardized approach exposure by risk weight before and after credit mitigation

The table below shows our credit risk exposure before and post credit conversion factors and credit risk mitigation obtained in the form of eligible financial collateral, guarantees and credit derivatives based on the exposure at default values (EAD) in the standardized approach as well as related RWA and average risk weights broken down by regulatory exposure classes and a split in on- and off-balance sheet exposures.

EU CR4 – Standardized approach – credit risk exposure and credit risk mitigation (CRM) effects

							Dec 31, 2020
		a	b	c	d	e	f
	in € m. (unless stated otherwise)	Exposures before CCF and CRM		Exposures post-CCF and CRM		RWA and average RW	
	Exposure classes	On-balance sheet amount	Off-balance sheet amount	On-balance sheet amount	Off-balance sheet amount	RWA	Average RW
1	Central governments or central banks	121,123	30	121,186	4	0	0%
2	Regional government or local authorities	4,928	1,383	4,929	59	10	0.21%
3	Public sector entities	2,092	63	2,135	23	25	1.15%
4	Multilateral development banks	1,380	0	1,380	0	0	0%
5	International organizations	785	0	785	0	0	0%
6	Institutions	1,651	301	1,652	81	112	6.45%
7	Corporates	12,292	3,867	9,704	837	10,202	96.78%
8	Retail	2,370	1,437	2,051	55	1,509	71.64%
9	Secured by mortgages on immovable property	3,342	0	3,232	0	1,197	37.03%
10	Exposures in default	746	66	729	30	984	129.72%
11	Items associated with particularly high risk	156	4	156	1	235	150.00%
12	Covered bonds	0	0	0	0	0	N/M
13	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	N/M
14	Collective investments undertakings (CIU)	0	0	0	0	0	N/M
15	Equity exposures	0	0	0	0	0	N/M
16	Other items	30	2,846	30	2,846	2,875	99.95%
17	Total	150,895	9,998	147,970	3,937	17,149	11.29%

							Jun 30, 2020
		a	b	c	d	e	f
	in € m. (unless stated otherwise)	Exposures before CCF and CRM		Exposures post-CCF and CRM		RWA and average RW	
	Exposure classes	On-balance sheet amount	Off-balance sheet amount	On-balance sheet amount	Off-balance sheet amount	RWA	Average RW
1	Central governments or central banks	112,168	33	112,195	2	0	0%
2	Regional government or local authorities	5,642	1,424	5,643	86	24	0.41%
3	Public sector entities	3,646	35	3,650	17	29	0.79%
4	Multilateral development banks	1,458	0	1,458	0	0	0%
5	International organizations	795	0	795	0	0	0%
6	Institutions	1,389	306	1,394	61	208	14.29%
7	Corporates	10,557	2,893	8,388	529	8,672	97.25%
8	Retail	2,278	1,497	1,996	55	1,532	74.70%
9	Secured by mortgages on immovable property	3,507	0	3,399	0	1,274	37.49%
10	Exposures in default	910	34	896	14	1,242	136.49%
11	Items associated with particularly high risk	205	3	115	1	175	150.00%
12	Covered bonds	0	0	0	0	0	N/M
13	Claims on institutions and corporates with a short-term credit assessment	37	0	37	0	37	100.00%
14	Collective investments undertakings (CIU)	0	0	0	0	0	N/M
15	Equity exposures	49	6	49	6	55	100.00%
16	Other items	58	1,849	58	1,849	1,906	99.96%
17	Total	142,698	8,079	140,073	2,620	15,153	10.62%

Our RWA for credit risk (excluding CCR) in the standardized approach were at € 17.1 billion as of December 31, 2020, compared to € 15.2 billion as of June 30, 2020. The increase of € 2.0 billion was primarily driven by the corporate portfolios as well as the exposure class Other items.

In the following tables the exposure at default values (EAD) per regulatory exposure class are assigned to their standardized risk weights. Deducted or unrated items are split out separately. The exposures are shown after the shift to the exposure class of the protection seller, if applicable.

EU CR5 – Standardized approach

	in € m.						Dec 31, 2020
							Risk Weight
	Exposure classes	0%	2%	4%	10%	20%	35%
1	Central governments or central banks	121,189	0	0	0	0	0
2	Regional governments or local authorities	4,947	0	0	0	38	0
3	Public sector entities	2,068	0	0	0	68	0
4	Multilateral development banks	1,380	0	0	0	0	0
5	International organizations	785	0	0	0	0	0
6	Institutions	1,418	50	0	0	171	0
7	Corporates	46	0	0	0	216	0
8	Retail	0	0	0	0	0	178
9	Secured by mortgages on immovable property	0	0	0	0	0	2,676
10	Exposures in default	0	0	0	0	0	0
11	Items associated with particularly high risk	0	0	0	0	0	0
12	Covered bonds	0	0	0	0	0	0
13	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	0
14	Collective investments undertakings (CIU)	0	0	0	0	0	0
15	Equity exposures	0	0	0	0	0	0
16	Other items	0	0	0	0	2	0
17	Total	131,834	50	0	0	495	2,854

	in € m.						Dec 31, 2020
							Risk Weight
	Exposure classes	50%	70%	75%	100%	150%	250%
1	Central governments or central banks	0	0	0	0	0	0
2	Regional governments or local authorities	0	0	0	3	0	0
3	Public sector entities	22	0	0	0	0	0
4	Multilateral development banks	0	0	0	0	0	0
5	International organizations	0	0	0	0	0	0
6	Institutions	34	0	0	60	0	0
7	Corporates	40	0	0	10,210	27	0
8	Retail	0	0	1,929	0	0	0
9	Secured by mortgages on immovable property	556	0	0	0	0	0
10	Exposures in default	0	0	0	308	451	0
11	Items associated with particularly high risk	0	0	0	0	157	0
12	Covered bonds	0	0	0	0	0	0
13	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	0
14	Collective investments undertakings (CIU)	0	0	0	0	0	0
15	Equity exposures	0	0	0	0	0	0
16	Other items	0	0	0	2,875	0	0
17	Total	652	0	1,929	13,455	634	0

	in € m.						Dec 31, 2020
		Risk Weight					
	Exposure classes	370%	1250%	Others	Deducted	Total	Of which: unrated
1	Central governments or central banks	0	0	0	0	121,190	121,190
2	Regional governments or local authorities	0	0	0	0	4,988	4,982
3	Public sector entities	0	0	0	0	2,159	2,159
4	Multilateral development banks	0	0	0	0	1,380	1,380
5	International organizations	0	0	0	0	785	785
6	Institutions	0	0	0	0	1,733	1,660
7	Corporates	0	2	0	0	10,541	10,313
8	Retail	0	0	0	0	2,107	2,107
9	Secured by mortgages on immovable property	0	0	0	0	3,232	3,215
10	Exposures in default	0	0	0	0	759	759
11	Items associated with particularly high risk	0	0	0	0	157	157
12	Covered bonds	0	0	0	0	0	0
13	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	0
14	Collective investments undertakings (CIU)	0	0	0	0	0	0
15	Equity exposures	0	0	0	0	0	0
16	Other items	0	0	0	0	2,877	2,877
17	Total	0	2	0	0	151,907	151,583

							Jun 30, 2020
	in € m.						Risk Weight
	Exposure classes	0%	2%	4%	10%	20%	35%
1	Central governments or central banks	112,196	0	0	0	0	0
2	Regional governments or local authorities	5,620	0	0	0	108	0
3	Public sector entities	3,522	0	0	0	146	0
4	Multilateral development banks	1,458	0	0	0	0	0
5	International organizations	795	0	0	0	0	0
6	Institutions	1,009	50	0	0	213	0
7	Corporates	114	0	0	0	140	0
8	Retail	0	0	0	0	0	0
9	Secured by mortgages on immovable property	0	0	0	0	0	2,780
10	Exposures in default	0	0	0	0	0	0
11	Items associated with particularly high risk	0	0	0	0	0	0
12	Covered bonds	0	0	0	0	0	0
13	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	0
14	Collective investments undertakings (CIU)	0	0	0	0	0	0
15	Equity exposures	0	0	0	0	0	0
16	Other items	0	0	0	0	1	0
17	Total	124,714	50	0	0	607	2,780

							Jun 30, 2020
	in € m.						Risk Weight
	Exposure classes	50%	70%	75%	100%	150%	250%
1	Central governments or central banks	0	0	0	0	0	0
2	Regional governments or local authorities	0	0	0	2	0	0
3	Public sector entities	0	0	0	0	0	0
4	Multilateral development banks	0	0	0	0	0	0
5	International organizations	0	0	0	0	0	0
6	Institutions	36	0	0	146	0	0
7	Corporates	28	0	0	8,610	24	0
8	Retail	0	0	2,051	0	0	0
9	Secured by mortgages on immovable property	619	0	0	0	0	0
10	Exposures in default	0	0	0	77	833	0
11	Items associated with particularly high risk	0	0	0	0	116	0
12	Covered bonds	0	0	0	0	0	0
13	Claims on institutions and corporates with a short-term credit assessment	0	0	0	37	0	0
14	Collective investments undertakings (CIU)	0	0	0	0	0	0
15	Equity exposures	0	0	0	55	0	0
16	Other items	0	0	0	1,905	0	0
17	Total	684	0	2,051	10,833	973	0

							Jun 30, 2020
	in € m.			Risk Weight			
	Exposure classes	370%	1250%	Others	Deducted	Total	Of which: unrated
1	Central governments or central banks	0	0	0	0	112,197	112,197
2	Regional governments or local authorities	0	0	0	0	5,730	5,661
3	Public sector entities	0	0	0	0	3,668	3,653
4	Multilateral development banks	0	0	0	0	1,458	1,458
5	International organizations	0	0	0	0	795	795
6	Institutions	0	0	0	0	1,455	1,421
7	Corporates	0	1	0	0	8,917	8,758
8	Retail	0	0	0	0	2,051	2,156
9	Secured by mortgages on immovable property	0	0	0	0	3,399	3,386
10	Exposures in default	0	0	0	0	910	910
11	Items associated with particularly high risk	0	0	0	0	116	116
12	Covered bonds	0	0	0	0	0	0
13	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	37	37
14	Collective investments undertakings (CIU)	0	0	0	0	0	0
15	Equity exposures	0	0	0	0	55	55
16	Other items	0	0	0	0	1,906	1,766
17	Total	0	1	0	0	142,693	142,369

Credit risk exposure and credit risk mitigation in the internal-rating-based approach

Qualitative information on the use of the IRB approach

Article 452 (a) CRR - Approval status for IRB approaches

For the majority of our credit portfolios, we are applying the advanced IRBA to calculate the regulatory capital requirements according to the CRR/CRD 4 framework, based on respective approvals received from BaFin and ECB. The regulatory approvals obtained as a result of the advanced IRBA audit processes for our regulatory credit exposures allow the usage of currently 66 internally developed rating systems for regulatory capital calculation purposes, 8 of these covering exposures in former Postbank. Thereof, 37 rating systems were authorized in December 2007. Overall they cover all of our material exposures in the advanced IRBA eligible exposure classes “Central governments and central banks”, “Institutions”, “Corporates”, and “Retail”.

As an IRBA institution, we are required to treat specific equity positions and other non-credit obligation assets generally within the IRBA. For these exposure types typically regulatory defined IRBA risk weights are applied.

Our exposures reported under foundation IRBA include parts of former Postbank’s corporate portfolios, which partially receive regulatory risk weights using the so-called ‘supervisory slotting criteria’ approach. Further details of the Foundation Approach are provided in the section “Foundation Internal Ratings Based Approach”.

At Group level, we assign a few portfolios to the standardized approach. Details of the standardized approach and the standardized approach exposures are discussed in the section “Credit risk and credit risk mitigation in the standardized approach” on page 93 within this report.

We are in regular exchange with ECB on model enhancements, changes in the IRB model landscape and other model related changes that are monitored jointly with ECB based on a model map.

The table below shows the Group-related EAD covered by the standardized, advanced and foundation IRB and split them out into the major regulatory exposure classes.

EAD within the group covered by the standardized, FIRB and AIRB approaches by exposure class

				Dec 31, 2020				Dec 31, 2019
in %	Advanced IRBA	Foundation IRBA	Standardized Approach	Total	Advanced IRBA	Foundation IRBA	Standardized Approach	Total
Sovereign related exposure	14	0	15	30	16	0	11	27
Institutions	5	0	1	6	5	0	1	6
Corporates	33	1	1	36	37	1	1	39
Retail	26	0	1	26	25	0	1	26
Other items	2	0	0	2	1	0	0	2
Total	**80**	**1**	**19**	**100**	84	1	15	100

Article 452 (b)(i) CRR - Mapping of internal rating scales to external ratings

The table below sets out the mapping of internal ratings to obligor default probabilities following the internal rating process as outlined in the section “Article 452 (c) - Internal rating-based approaches” on page 98 in this report as well as chapter “Credit risk management and asset quality”, section “Measuring credit risk” in our Annual Report 2020 on page 70. All internal ratings and scorings are based on a uniform master scale, which assigns each rating or scoring result to the default probability determined for that class.

Internal Ratings and Probability of Defaults

Internal rating	PD range in %
iAAA	> 0.00 ≤ 0.01
iAA+	> 0.01 ≤ 0.02
iAA	> 0.02 ≤ 0.03
iAA–	> 0.03 ≤ 0.04
iA+	> 0.04 ≤ 0.05
iA	> 0.05 ≤ 0.07
iA–	> 0.07 ≤ 0.11
iBBB+	> 0.11 ≤ 0.18
iBBB	> 0.18 ≤ 0.30
iBBB–	> 0.30 ≤ 0.50
iBB+	> 0.50 ≤ 0.83
iBB	> 0.83 ≤ 1.37
iBB–	> 1.37 ≤ 2.27
iB+	> 2.27 ≤ 3.75
iB	> 3.75 ≤ 6.19
iB–	> 6.19 ≤ 10.22
iCCC+	> 10.22 ≤ 16.87
iCCC	> 16.87 ≤ 27.84
iCCC–	> 27.84 ≤ 99.99
Default	100.00

Article 452 (b)(ii) CRR - Use of internal ratings

Please refer to the section “Article 452 (c) - Internal rating-based approaches” below on page 98.

Article 452 (b)(iii) CRR - Management and recognition of credit risk mitigation

Please refer to section “Article 453 (f-g) CRR - Overview of credit risk mitigation techniques” within this report on page 90 as well as to the Annual Report 2020, section “Managing and mitigation of credit risk” on pages 88 to 93.

Article 452 (b)(iv) CRR - Controls around rating systems

Credit Risk Advanced IRBA – Model Validation

As an important element of our risk management framework we regularly validate our credit risk models and according credit risk parameters.

According to our standards, and in line with the CRR-defined minimum requirements, the credit risk parameters PD, LGD and EAD are validated annually. The validation process is coordinated and supervised by Deutsche Bank’s Model Risk Management function. Credit Risk parameter validations consist of quantitative analyses of internal historical data and are enriched by qualitative assessments in case data for validation is not statistically sufficient for reliable validation results. A recalibration of specific parameter settings is triggered based on validation results if required.

For quantitative details of our validation results please refer to section “Article 452 (h-i) CRR - Model validation results and expected versus actual losses” of this Pillar 3 Report on the pages 116.

Article 452 (c) CRR - Internal rating-based approaches

Advanced Internal Ratings Based Approach

The advanced IRBA is the most sophisticated approach available under the regulatory framework for credit risk and allows us to make use of our internal rating methodologies as well as internal estimates of specific other risk parameters. These methods and parameters represent long-used key components of the internal risk measurement and management process supporting the credit approval process, the economic capital and expected loss calculation and the internal monitoring and reporting of credit risk. The relevant parameters include the probability of default (“PD”), the loss given default (“LGD”) and the maturity (“M”) driving the regulatory risk-weight and the credit conversion factor (“CCF”) as part of the regulatory exposure at default (“EAD”) estimation. For most of our internal rating systems more than seven years of historical information is available to assess these parameters. Our internal rating methodologies aim at point-in-time rather than a through-the-cycle rating.

The probability of default for customers is derived from our internal rating systems. We assign a probability of default to each relevant counterparty credit exposure as a function of a transparent and consistent 21-grade master rating scale for all of our exposure (excluding parts of former Postbank).

A prerequisite for the development of rating methodologies and the determination of risk parameters is a proper definition, identification and recording of the default event of a customer. We apply a default definition in accordance with the requirements of Article 178 CRR as confirmed by the BaFin and ECB as part of the IRBA approval process. With the introduction of IFRS9, Deutsche Bank has aligned its definition of “credit impaired” under IFRS 9 to the default definition as per Art. 178 of the Capital Requirements Regulation (CRR) for regulatory purposes. As a consequence, Stage 3 Financial Assets consist of two types of defaulted financial assets: firstly financial assets, where the Group expects an impairment loss reflected in an allowance for credit losses and secondly financial assets, where the group does not expect an impairment loss (e.g., due to high quality collateral or sufficient expected future cash flows following thorough due diligence).

The borrower ratings assigned are derived on the grounds of internally developed rating models which specify consistent and distinct customer-relevant criteria and assign a rating grade based on a specific set of criteria as given for a certain customer. The set of criteria is generated from information sets relevant for the respective customer segments like general customer behavior, financial and external data. The methods in use range from statistical scoring models to expert-based models taking into account the relevant available quantitative and qualitative information. Expert-based models are usually applied for counterparts in the exposure classes “Central governments and central banks”, “Institutions” and “Corporates” with the exception of “Corporates” segments for which sufficient data basis is available for statistical scoring models. For the latter as well as for the retail segment statistical scoring or hybrid models combining both approaches are commonly used. Quantitative rating methodologies are developed based on applicable statistical modeling techniques, such as logistic regression. In line with Article 174 CRR, these models are complemented by human judgment and oversight to review model-based assignments and are intended to ensure that the models are used appropriately. When we assign our internal risk ratings, it allows us to compare them with external risk ratings assigned to our counterparties by the major international rating agencies, where possible, as our internal rating scale has been designed to principally correspond to the external rating scales from rating agencies.

Ratings for central governments and central banks take into account economic, political and sociodemographic indicators, e.g. the political dynamics in a country. The model incorporates relevant aspects covered in the fields of empirical country risk analysis and early warning crisis models to arrive at an overall risk evaluation.

The majority of ratings for corporate and institutions combine quantitative analysis of financial information with qualitative assessments of, inter alia, industry trends, market position and management experience. Financial analysis has a specific focus on cash flow generation and the counterparty’s capability to service its debts, also in comparison to peers. We supplement the analysis of financials by an internal forecast of the counterparty’s financial profile where deemed to be necessary. For purchased corporate receivables the corporate rating approach is applied.

Ratings for SME clients are based on automated sub-ratings for e.g. financial aspects and conduct of bank account. Specialized lending is managed by specific credit risk management teams, e.g. for real estate, ship finance or leveraged transactions. Following the individual characteristic of the underlying credit transactions we have developed bespoke scorecards where appropriate to derive credit ratings.

In our retail business, creditworthiness checks and counterparty ratings are generally derived by utilizing an automated decision engine. The decision engine incorporates quantitative aspects (i.e., financial figures), behavioral aspects, credit bureau information (such as SCHUFA in Germany) and general customer data. These input factors are used by the decision engine to determine the creditworthiness of the borrower and, after consideration of collateral, the expected loss. The established rating procedures we have implemented in our retail business are based on multivariate statistical methods. For the portfolios in the former Postbank, separate rating tools based on product specific scores are still applied. Alignment projects are in place to harmonize these with group wide applied counterparty centric view.

They are used to support our individual credit decisions for the retail portfolio as well as to continuously monitor it in an automated fashion. In case elevated risks are identified as part to this monitoring process or new regulatory requirements apply, credit ratings are reviewed on an individual basis for these affected counterparties

Although different rating methodologies are applied to the various customer segments in order to properly reflect customer-specific characteristics, they all adhere to the same risk management principles. Credit process policies provide guidance on the classification of customers into the various rating systems.

We apply internally estimated LGD factors as part of the advanced IRBA capital requirement calculation as approved by the BaFin and ECB. LGD is defined as the likely loss intensity in case of a counterparty default. It provides an estimation of the exposure that cannot be recovered in a default event and therefore captures the severity of a loss. Conceptually, LGD estimates are independent of a customer’s probability of default. The LGD models ensure that the main drivers for losses (i.e., different levels and quality of collateralization and customer or product types or seniority of facility) are reflected in specific LGD factors. In our LGD models, except for the former Postbank portfolios, we assign collateral type specific LGD parameters to the collateralized exposure (collateral value after application of haircuts). Moreover, the LGD for uncollateralized exposure cannot be below the LGD assigned to collateralized exposure and regulatory floors (e.g.10 % for residential mortgage loans) are applied. For the former Postbank portfolios, individually modeled LGD parameters are in use.

As part of the application of the advanced IRBA we apply specific CCFs in order to calculate an EAD value. Conceptually the EAD is defined as the expected amount of the credit exposure to a counterparty at the time of its default. For advanced IRBA calculation purposes we apply the general principles as defined in Article 166 CRR to determine the EAD of a transaction. In instances, however, where a transaction involves an unused limit, a percentage share of this unused limit is added to the outstanding amount in order to appropriately reflect the expected outstanding amount in case of a counterparty default. This reflects the assumption that for commitments the utilization at the time of default might be higher than the current utilization. When a transaction involves an additional contingent component (i.e., guarantees) a further percentage share (usage factor) is applied as part of the CCF model in order to estimate the amount of guarantees drawn in case of default. Where allowed under the advanced IRBA, the CCFs are internally estimated. The calibrations of such parameters are based on statistical experience as well as internal historical data and consider customer and product type specifics. As part of the approval process, the BaFin and ECB assessed our CCF models and stated their appropriateness for use in the process of regulatory capital requirement calculations.

The EAD for our derivatives and securities financing transactions (“SFT”) portfolios are primarily calculated based on the IMM approach as described in the section “Counterparty credit risk” of this report on the pages 138 to 139.

Foundation Internal Ratings Based Approach

The foundation IRBA is an approach available under the regulatory framework for credit risk allowing institutions to make use of their internal rating methodologies while using pre-defined regulatory values for all other risk parameters. Parameters subject to internal estimates include the probability of default (“PD”) while the loss given default (“LGD”) and the credit conversion factor (“CCF”) are defined in the regulatory framework.

A probability of default is assigned to each relevant counterparty credit exposure as a function of a transparent and consistent rating master scale. The borrower ratings assigned are derived on the grounds of internally developed rating models which specify consistent and distinct customer-relevant criteria and assign a rating grade based on a specific set of criteria as given for a certain customer following the approaches as outlined for our Advanced IRBA rating systems. Currently, the former Postbank rating systems Factoring and Special Rating are reported under the foundation IRBA. For the latter, regulatory risk weights are applied using the so-called ‘supervisory slotting criteria’ approach as defined by Article 153 CRR.

For the foundation IRBA we apply the same default definition as for Advanced IRBA in accordance with the requirements of Article 178 CRR as confirmed by the BaFin as part of its IRBA approval process.

Assignment to regulatory exposure classes

The advanced and foundation IRBA requires differentiating a bank’s credit portfolio into various regulatory defined exposure classes. We identify the relevant regulatory exposure class for each exposure by taking into account factors like customer-specific characteristics, the rating system used as well as certain materiality thresholds which are regulatory defined.

As an IRBA institution, we are required to treat equity investments, collective investment undertakings (“CIU”) and other non-credit obligation assets generally within the IRBA. For these exposure types typically regulatory-defined IRBA risk weights are applied. For certain CIUs, i.e. the CIUs in the former Postbank-portfolio, a smaller CIU-portfolio at DWS and a real-estate CIU portfolio in the US , we apply a “look through”-approach and derive the risk weighs based on the underlying positions.

We use the simple risk-weight approach according to Article 155 (2) CRR for our investments in equity positions. It distinguishes between exposure in equities which are non-exchange traded but sufficiently diversified, exchange-traded and other non-exchange-traded and then uses the regulatory-defined risk weights of 190 %, 290 % or 370 %, respectively. We also include exposures attracting a risk weight of 250 % according to Article 48 (4) for significant investments in the CET 1 instruments of financial sector entities which are subject to the threshold exemptions as outlined in Article 48 CRR.

Exposures which are assigned to the exposure class “other non-credit obligation assets” receive an IRBA risk weight of 0 % in case of cash positions and a risk weight of 100 % for all other cases.

Quantitative information on the use of the IRB approach

Article 452 (d-g) CRR - Advanced IRB exposure

The following series of tables details the Group's advanced IRB exposure distributed on our internal rating scale, separately for all relevant regulatory exposure classes. They exclude the counterparty credit risk position from derivatives and securities financing transactions which are presented separately in the section "Counterparty credit risk" later in this report.

The tables show the EAD gross as well as the off-balance sheet exposure with their corresponding exposure-weighted credit conversion factors. All undrawn commitment exposure values shown below are assigned to the exposure class of their original counterparty and not to the exposure class of the protection seller.

In addition they provide the EAD net after CRM and CCF, where exposures covered by guarantees or credit derivatives are assigned to the protection seller. As a consequence the EAD net can be higher than the original balance sheet exposure.

The EAD net is presented in conjunction with exposures-weighted average PD, LGD, maturity as well as the RWA and the average risk weight (RW). The effect of double default, as far as applicable to exposures outside of former Postbank, is considered in the average RW. It implies that for a guaranteed exposure a loss only occurs if the primary obligor and the guarantor fail to meet their obligations at the same time. The tables provide the defaulted exposure separately, where we apply a LGD conception already incorporating potential unexpected losses in the loss rate estimate as required by Article 181 (1) (h) CRR.

Further details in the tables are number of obligors, expected loss and provisions.

EU CR6 – AIRB approach – Credit risk exposures by exposure class and PD range

												Dec 31, 2020
in € m.	a	b	c	d	e	f	g	h	i	j	k	l
(unless stated otherwise) Exposure class/ PD scale	EAD gross	Undrawn commitments	Weighted Credit Conversion Factor (CCF) (in %)	EAD net, post CRM and post-CCF	Average PD (in %)	Number of obligors (in 1,000s)	Average LGD (in %)	Average maturity (in years)	RWA	Average RW (in %)	Expected Loss	Value adjustments and Provisions
Central governments and central banks												
0.00 to <0.15	95,279	25	90.06	106,268	0	0.1	50.16	1.2	1,129	1.06	1	–
0.15 to <0.25	4,507	0	0	5,063	0.23	<0.1	50.04	2.2	2,658	52.50	6	–
0.25 to <0.50	2	0	100.00	3	0.39	<0.1	50.00	3.0	2	79.39	0	–
0.50 to <0.75	365	2	99.84	342	0.64	<0.1	50.00	1.4	256	74.99	1	–
0.75 to <2.50	644	192	34.19	219	1.15	<0.1	47.47	0.6	172	78.59	1	–
2.50 to <10.00	2,145	490	39.48	766	6.28	<0.1	47.23	2.7	755	98.54	15	–
10.00 to <100.00	417	261	35.00	28	13.00	<0.1	50.00	1.8	66	239.59	2	–
100.00 (Default)	235	7	35.00	17	100.00	<0.1	55.96	3.2	3	15.50	9	–
Sub-total	103,595	978	38.69	112,704	0.07	0.2	50.13	1.2	5,041	4.47	36	23
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	103,595	978	38.69	112,704	0.07	0.2	50.13	1.2	5,041	4.47	36	23
Institutions												
0.00 to <0.15	11,617	3,633	44.06	16,674	0.05	0.5	48.38	1.2	1,698	10.19	3	–
0.15 to <0.25	489	279	35.64	608	0.23	0.1	31.28	1.9	206	33.84	0	–
0.25 to <0.50	98	173	45.58	162	0.39	0.1	20.42	1.0	42	26.09	0	–
0.50 to <0.75	710	214	60.00	824	0.64	0.1	25.69	1.3	383	46.51	1	–
0.75 to <2.50	637	179	54.59	664	1.23	0.1	13.80	3.1	243	36.65	2	–
2.50 to <10.00	1,225	319	70.92	1,315	3.11	<0.1	7.93	2.4	430	32.68	5	–
10.00 to <100.00	12	143	36.43	56	13.00	<0.1	10.84	1.9	25	44.89	1	–
100.00 (Default)	1,830	0	0	1,828	100.00	<0.1	1.10	4.9	252	13.80	1	–
Sub-total	16,617	4,940	46.22	22,131	8.47	0.8	39.47	1.7	3,280	14.82	14	5
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	16,617	4,940	46.22	22,131	8.47	0.8	39.41	1.7	3,280	14.82	14	5
Corporates												
0.00 to <0.15	64,451	93,650	31.09	93,523	0.08	21.4	31.98	2.1	16,377	17.51	24	–
0.15 to <0.25	17,675	16,000	29.72	22,150	0.23	5.6	29.01	2.4	6,168	27.84	15	–
0.25 to <0.50	18,825	14,138	33.48	22,525	0.39	5.8	26.78	2.2	7,502	33.30	24	–
0.50 to <0.75	15,971	12,351	31.34	18,706	0.65	5.0	22.01	2.4	6,958	37.19	26	–
0.75 to <2.50	28,970	17,691	30.28	30,118	1.47	6.3	22.37	2.6	15,812	52.50	99	–
2.50 to <10.00	26,190	24,844	29.67	30,365	5.46	3.8	17.78	2.5	18,905	62.26	286	–
10.00 to <100.00	5,449	3,748	31.11	5,210	16.50	1.0	16.70	2.3	3,971	76.22	138	–
100.00 (Default)	14,681	2,868	32.68	13,285	100.00	1.8	34.38	2.7	2,684	20.20	4,309	–
Sub-total	192,211	185,290	30.93	235,884	7.03	50.6	27.16	2.3	78,376	33.23	4,922	5,001
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	192,211	185,290	30.93	235,884	7.03	50.6	27.16	2.3	78,376	33.23	4,922	5,001

												Dec 31, 2020
in € m.	a	b	c	d	e	f	g	h	i	j	k	l
(unless stated otherwise) Exposure class/ PD scale	EAD gross	Undrawn commitments	Weighted Credit Conversion Factor (CCF) (in %)	EAD net, post CRM and post-CCF	Average PD (in %)	Number of obligors (in 1,000s)	Average LGD (in %)	Average maturity (in years)	RWA	Average RW (in %)	Expected Loss	Value adjustments and Provisions
of which:												
SMEs												
0.00 to <0.15	4,674	3,707	35.80	5,812	0.10	7.2	31.58	3.3	901	15.50	2	–
0.15 to <0.25	1,802	1,270	36.75	2,530	0.25	2.6	42.88	3.4	960	37.97	3	–
0.25 to <0.50	2,131	1,075	38.22	2,235	0.42	2.8	28.98	2.6	708	31.66	3	–
0.50 to <0.75	1,571	848	36.78	1,612	0.71	2.2	34.49	2.8	770	47.77	4	–
0.75 to <2.50	2,215	1,288	35.47	2,172	1.55	2.7	34.93	2.6	1,399	64.42	12	–
2.50 to <10.00	1,570	876	33.78	1,501	4.95	1.4	29.57	2.8	1,273	84.83	26	–
10.00 to <100.00	506	103	28.79	275	18.68	0.5	27.25	3.6	370	134.47	22	–
100.00 (Default)	1,677	121	51.44	510	100.00	0.3	77.18	2.4	147	28.88	233	–
Sub-total	16,146	9,288	36.19	16,648	3.07	19.8	34.30	3.0	6,529	39.22	304	315
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	16,146	9,288	36.19	16,648	3.08	19.8	34.34	3.0	6,529	39.22	304	315
Specialized Lending												
0.00 to <0.15	4,943	143	35.35	4,905	0.11	0.1	4.80	3.0	190	3.87	0	–
0.15 to <0.25	3,262	198	48.66	3,358	0.23	0.1	8.66	3.5	372	11.07	1	–
0.25 to <0.50	2,948	115	57.48	2,933	0.39	0.1	6.98	3.5	353	12.05	1	–
0.50 to <0.75	3,530	196	76.22	3,642	0.66	0.1	9.19	2.7	727	19.95	2	–
0.75 to <2.50	6,517	474	50.42	6,390	1.49	0.2	10.85	3.2	1,881	29.44	11	–
2.50 to <10.00	12,564	1,597	26.12	12,654	5.95	0.4	6.83	2.0	2,985	23.59	52	–
10.00 to <100.00	2,354	220	25.55	2,379	15.29	0.1	8.36	2.1	1,000	42.02	32	–
100.00 (Default)	3,565	74	37.63	3,156	100.00	0.2	40.10	2.5	445	14.11	1,235	–
Sub-total	39,682	3,017	36.54	39,416	11.20	1.3	10.36	2.7	7,953	20.18	1,334	1,269
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	39,682	3,017	36.54	39,416	11.20	1.3	10.36	2.7	7,953	20.18	1,334	1,269
Other												
0.00 to <0.15	54,834	89,800	30.89	82,806	0.08	14.1	33.62	2.0	15,286	18.46	22	–
0.15 to <0.25	12,611	14,533	28.85	16,262	0.23	2.9	31.05	2.0	4,835	29.73	11	–
0.25 to <0.50	13,746	12,948	32.88	17,357	0.39	2.9	29.84	1.9	6,441	37.11	20	–
0.50 to <0.75	10,871	11,306	30.15	13,453	0.65	2.7	23.99	2.3	5,461	40.59	20	–
0.75 to <2.50	20,238	15,929	29.27	21,555	1.45	3.4	24.53	2.4	12,531	58.13	76	–
2.50 to <10.00	12,056	22,370	29.77	16,210	5.12	2.0	25.22	2.9	14,647	90.36	208	–
10.00 to <100.00	2,589	3,425	31.54	2,556	17.40	0.5	23.32	2.3	2,601	101.77	85	–
100.00 (Default)	9,440	2,673	31.69	9,619	100.00	1.3	31.17	2.8	2,092	21.75	2,842	–
Sub-total	136,384	172,985	30.55	179,820	6.48	29.6	30.18	2.2	63,895	35.53	3,284	3,417
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	136,384	172,985	30.55	179,820	6.53	29.6	30.42	2.2	63,895	35.53	3,284	3,417

Dec 31, 2020

in € m. (unless stated otherwise)	a	b	c	d	e	f	g	h	i	j	k	l
Exposure class/ PD scale	EAD gross	Undrawn commitments	Weighted Credit Conversion Factor (CCF) (in %)	EAD net, post CRM and post-CCF	Average PD (in %)	Number of obligors (in 1,000s)	Average LGD (in %)	Average maturity (in years)	RWA	Average RW (in %)	Expected Loss	Value adjustments and Provisions
Retail												
0.00 to <0.15	32,741	18,376	57.58	44,136	0.11	3,094.0	25.36	15.0	2,047	4.64	12	–
0.15 to <0.25	29,388	4,495	64.26	32,386	0.24	776.5	19.56	21.8	2,800	8.65	15	–
0.25 to <0.50	39,273	4,447	62.67	42,170	0.40	749.7	19.53	23.0	5,448	12.92	33	–
0.50 to <0.75	38,858	3,576	67.11	41,312	0.69	758.4	20.63	22.2	8,305	20.10	59	–
0.75 to <2.50	39,041	3,502	67.12	41,144	0.27	1,372.9	25.46	17.1	15,025	36.52	162	–
2.50 to <10.00	17,905	1,551	77.80	18,641	4.59	782.5	30.31	16.1	11,671	62.61	267	–
10.00 to <100.00	3,752	155	73.68	3,544	20.48	163.3	31.71	16.7	3,897	109.94	242	–
100.00 (Default)	4,817	52	68.36	4,001	100.39	155.0	48.27	9.7	1,094	27.34	1,807	–
Sub-total	205,775	36,155	61.85	227,333	2.77	7,852.3	23.52	19.2	50,287	22.12	2,597	2,841
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	205,775	36,155	61.85	227,333	2.77	7,852.3	23.52	19.2	50,287	22.12	2,597	2,841
of which:												
Secured by real estate property SMEs												
0.00 to <0.15	1,444	161	61.12	1,537	0.12	7.2	12.33	14.9	45	2.94	0	–
0.15 to <0.25	1,602	124	57.12	1,664	0.23	7.6	11.85	15.2	76	4.54	0	–
0.25 to <0.50	1,763	115	56.40	1,816	0.39	8.2	12.42	15.6	128	7.04	1	–
0.50 to <0.75	1,325	74	52.88	1,348	0.65	6.4	12.41	15.5	133	9.83	1	–
0.75 to <2.50	1,558	68	53.02	1,551	1.35	7.6	12.43	16.2	250	16.12	3	–
2.50 to <10.00	664	22	51.77	612	4.32	3.0	13.19	15.4	199	32.54	3	–
10.00 to <100.00	175	2	56.68	75	12.14	0.6	13.90	15.6	40	53.37	2	–
100.00 (Default)	578	0	76.43	112	100.00	0.3	34.93	10.8	40	35.81	33	–
Sub-total	9,109	566	56.86	8,715	0.99	41.0	12.77	15.6	910	10.45	44	56
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	9,109	566	56.86	8,715	0.99	41.0	12.77	15.6	910	10.45	44	56
Secured by real estate property non-SMEs												
0.00 to <0.15	28,239	1,023	74.75	29,001	0.12	271.5	13.86	21.1	1,162	4.01	5	–
0.15 to <0.25	25,701	1,270	78.72	26,696	0.24	193.1	16.11	24.4	2,080	7.79	10	–
0.25 to <0.50	34,768	1,650	78.66	36,057	0.40	247.6	16.91	25.0	4,260	11.81	24	–
0.50 to <0.75	34,066	1,709	79.64	35,414	0.69	236.4	17.60	24.2	6,463	18.25	43	–
0.75 to <2.50	27,296	1,939	82.89	28,864	1.46	198.4	16.44	21.4	7,947	27.53	68	–
2.50 to <10.00	9,445	1,010	92.56	10,353	4.63	80.1	15.09	23.8	5,169	49.93	74	–
10.00 to <100.00	1,964	75	95.56	2,015	21.39	14.8	17.45	24.8	2,017	100.11	75	–
100.00 (Default)	1,469	17	93.40	1,479	100.00	14.3	18.85	21.3	610	41.21	294	–
Sub-total	162,949	8,693	81.13	169,879	1.72	1,256.2	16.24	23.4	29,707	17.49	593	685
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	162,949	8,693	81.13	169,879	1.72	1,256.2	16.24	23.4	29,707	17.49	593	685

												Dec 31, 2020
in € m.	a	b	c	d	e	f	g	h	i	j	k	l
(unless stated otherwise) Exposure class/ PD scale	EAD gross	Undrawn commitments	Weighted Credit Conversion Factor (CCF) (in %)	EAD net, post CRM and post-CCF	Average PD (in %)	Number of obligors (in 1,000s)	Average LGD (in %)	Average maturity (in years)	RWA	Average RW (in %)	Expected Loss	Value adjustments and Provisions
Qualifying Revolving												
0.00 to <0.15	44	11,453	71.14	8,191	0.08	2,536.3	60.00	0.0	308	3.76	4	–
0.15 to <0.25	57	1,480	70.39	1,099	0.24	419.6	58.18	0.0	98	8.93	2	–
0.25 to <0.50	95	887	66.98	689	0.39	302.5	56.44	0.0	89	12.86	2	–
0.50 to <0.75	127	588	63.95	503	0.69	256.6	56.60	0	101	20.06	2	–
0.75 to <2.50	222	471	63.58	520	1.53	292.2	55.63	0	186	35.65	5	–
2.50 to <10.00	159	164	64.19	262	4.77	164.6	56.95	0	210	80.00	7	–
10.00 to <100.00	47	18	66.33	51	17.76	33.9	58.24	0.0	87	170.99	6	–
100.00 (Default)	75	2	67.34	75	100.00	37.7	65.69	0	43	57.46	46	–
Sub-total	826	15,062	70.22	11,390	1.05	4,043.4	59.22	0.0	1,121	9.84	73	74
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	826	15,062	70.22	11,390	1.05	4,043.4	59.22	0.0	1,121	9.84	73	74
Other retail SMEs												
0.00 to <0.15	628	2,675	19.85	1,374	0.11	39.2	43.53	2.4	137	9.98	1	–
0.15 to <0.25	463	867	34.13	830	0.23	31.0	42.98	3.0	135	16.21	1	–
0.25 to <0.50	550	959	26.90	900	0.39	34.0	45.94	2.8	221	24.55	2	–
0.50 to <0.75	523	541	30.07	728	0.66	22.9	49.44	3.1	258	35.44	2	–
0.75 to <2.50	705	487	33.57	679	1.31	24.7	47.99	2.8	350	51.55	7	–
2.50 to <10.00	419	191	37.13	124	3.54	13.8	24.88	0.2	110	89.01	8	–
10.00 to <100.00	182	25	40.08	4	22.75	4.6	196.62	2.7	36	993.98	10	–
100.00 (Default)	644	15	62.79	277	100.02	3.3	84.12	1.8	86	30.91	146	–
Sub-total	4,113	5,759	26.07	4,916	3.89	173.6	46.49	2.6	1,333	27.11	176	232
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	4,113	5,759	26.07	4,916	3.89	173.6	46.49	2.6	1,333	27.11	176	232
Other retail non-SMEs												
0.00 to <0.15	2,386	3,064	33.92	4,031	0.10	437.6	36.56	5.6	394	9.78	2	–
0.15 to <0.25	1,564	756	63.67	2,097	0.24	199.2	40.10	12.9	412	19.65	2	–
0.25 to <0.50	2,098	836	68.40	2,708	0.40	229.9	41.07	13.8	751	27.73	5	–
0.50 to <0.75	2,817	665	69.43	3,319	0.69	298.3	44.63	11.4	1,351	40.70	10	–
0.75 to <2.50	9,259	538	45.50	9,530	1.62	932.7	51.64	6.1	6,293	66.03	80	–
2.50 to <10.00	7,219	163	51.13	7,291	4.56	561.4	52.50	6.2	5,983	82.06	174	–
10.00 to <100.00	1,384	36	56.30	1,400	20.36	118.6	51.79	5.8	1,716	122.58	149	–
100.00 (Default)	2,051	17	48.27	2,056	100.00	107.2	64.87	1.6	315	15.31	1,289	–
Sub-total	28,778	6,076	47.91	32,433	9.15	2,884.9	48.51	7.4	17,215	53.08	1,711	1,794
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	28,778	6,076	47.91	32,433	9.15	2,884.9	48.51	7.4	17,215	53.08	1,711	1,794
All exposure classes												
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Total incl. dilution risk	518,198	227,362	36.21	598,053	4.15	7,903.9	30.56	8.5	136,984	22.91	7,568	7,870

Jun 30, 2020

in € m. (unless stated otherwise) Exposure class/ PD scale	a EAD gross	b Undrawn commitments	c Weighted Credit Conversion Factor (CCF) (in %)	d EAD net, post CRM and post-CCF	e Average PD (in %)	f Number of obligors (in 1,000s)	g Average LGD (in %)	h Average maturity (in years)	i RWA	j Average RW (in %)	k Expected Loss	l Value adjustments and Provisions
Central governments and central banks												
0.00 to <0.15	95,078	111	45.95	104,637	0.00	0.1	50.12	1.1	1,095	1.05	1	–
0.15 to <0.25	3,998	8	99.89	4,373	0.23	<0.1	50.00	2.3	2,330	53.27	5	–
0.25 to <0.50	10	6	100.00	9	0.39	<0.1	49.89	2.7	7	74.60	0	–
0.50 to <0.75	465	19	35.10	300	0.64	<0.1	49.45	1.4	221	73.73	1	–
0.75 to <2.50	306	57	43.73	172	1.25	<0.1	44.03	1.0	155	90.50	1	–
2.50 to <10.00	2,106	285	39.15	432	4.23	<0.1	46.18	2.7	386	89.47	7	–
10.00 to <100.00	368	324	35.19	45	13.00	<0.1	49.83	2.5	113	248.82	3	–
100.00 (Default)	266	0	35.00	20	100.00	<0.1	56.63	3.6	3	17.09	12	–
Sub-total	102,596	811	39.84	109,988	0.06	0.2	50.09	1.2	4,310	3.92	31	21
Dilution risk	12	0	0	12	25.38	0	1.00	1.0	1	5.49	0	0
Sub-total incl. dilution risk	102,609	811	39.84	110,001	0.06	0.2	50.08	1.2	4,311	3.92	31	21
Institutions												
0.00 to <0.15	12,513	3,416	40.90	17,778	0.05	0.5	46.81	1.3	1,759	9.89	3	–
0.15 to <0.25	630	260	32.33	758	0.23	0.1	41.48	1.6	368	48.49	1	–
0.25 to <0.50	96	219	43.11	197	0.39	0.1	32.23	1.0	70	35.60	0	–
0.50 to <0.75	882	217	49.17	949	0.65	0.1	25.90	1.1	434	45.80	2	–
0.75 to <2.50	863	184	59.96	960	1.24	0.1	29.89	2.6	577	60.12	4	–
2.50 to <10.00	1,334	210	54.85	1,323	3.02	<0.1	23.97	2.6	721	54.50	8	–
10.00 to <100.00	16	139	59.68	90	14.06	<0.1	13.05	1.0	52	58.16	2	–
100.00 (Default)	19	0	20.00	19	100.00	<0.1	3.93	4.1	4	22.50	0	–
Sub-total	16,353	4,646	42.86	22,073	0.46	0.8	43.32	1.4	3,986	18.06	20	11
Dilution risk	123	1	14.92	116	24.68	0	1.23	1.0	7	5.81	0	0
Sub-total incl. dilution risk	16,476	4,648	42.85	22,189	0.59	0.8	43.10	1.4	3,992	17.99	20	11
Corporates												
0.00 to <0.15	63,203	113,973	29.64	98,555	0.08	21.9	31.21	2.1	17,060	17.31	24	–
0.15 to <0.25	18,591	15,416	29.84	23,432	0.23	5.7	30.33	2.3	7,072	30.18	16	–
0.25 to <0.50	20,343	14,334	28.54	24,051	0.39	5.8	28.11	2.4	9,101	37.84	27	–
0.50 to <0.75	17,123	11,271	32.85	19,853	0.65	4.9	23.99	2.5	8,057	40.58	31	–
0.75 to <2.50	31,936	16,936	31.32	32,889	1.46	6.6	21.86	2.8	16,073	48.87	102	–
2.50 to <10.00	31,568	17,954	32.64	33,912	5.37	3.8	16.21	2.4	18,675	55.07	283	–
10.00 to <100.00	6,426	3,680	32.34	6,686	16.79	0.9	15.41	2.2	4,823	72.13	170	–
100.00 (Default)	11,896	1,905	28.09	11,915	100.00	1.9	42.01	2.2	2,462	20.66	4,732	–
Sub-total	201,087	195,469	30.22	251,294	6.25	51.5	27.10	2.3	83,323	33.16	5,385	5,306
Dilution risk	2,579	297	32.85	2,683	19.07	50.7	2.72	1.0	270	10.05	7	0
Sub-total incl. dilution risk	203,666	195,765	30.22	253,977	6.38	102.2	26.85	2.3	83,592	32.91	5,392	5,306

												Jun 30, 2020
in € m.	a	b	c	d	e	f	g	h	i	j	k	l
(unless stated otherwise) Exposure class/ PD scale	EAD gross	Undrawn commitments	Weighted Credit Conversion Factor (CCF) (in %)	EAD net, post CRM and post-CCF	Average PD (in %)	Number of obligors (in 1,000s)	Average LGD (in %)	Average maturity (in years)	RWA	Average RW (in %)	Expected Loss	Value adjustments and Provisions
of which:												
SMEs												
0.00 to <0.15	5,015	3,898	35.64	6,335	0.10	7.2	29.54	3.3	993	15.67	2	–
0.15 to <0.25	1,467	964	38.81	1,712	0.26	2.5	35.53	3.3	510	29.79	2	–
0.25 to <0.50	2,096	1,144	40.46	2,313	0.42	2.6	33.46	2.5	793	34.31	3	–
0.50 to <0.75	1,548	704	36.23	1,584	0.71	2.1	40.56	2.7	828	52.25	5	–
0.75 to <2.50	2,502	1,149	34.84	2,371	1.51	2.9	34.89	2.6	1,368	57.68	13	–
2.50 to <10.00	2,003	673	36.64	1,891	4.39	1.4	29.48	3.2	1,354	71.63	27	–
10.00 to <100.00	339	86	34.55	281	22.53	0.3	43.74	2.9	478	170.13	30	–
100.00 (Default)	419	53	38.90	395	100.00	0.3	46.53	2.1	100	25.36	178	–
Sub-total	15,389	8,671	36.66	16,881	3.61	19.5	33.10	3.0	6,424	38.05	259	261
Dilution risk	10	0	0	10	32.25	0	0.84	1.0	0	4.56	0	0
Sub-total incl. dilution risk	15,399	8,671	36.66	16,892	3.62	19.5	33.08	3.0	6,425	38.03	259	261
Specialized Lending												
0.00 to <0.15	4,133	44	26.79	4,040	0.12	0.1	5.12	3.7	228	5.64	0	–
0.15 to <0.25	2,983	445	33.93	3,125	0.23	0.1	6.11	3.9	277	8.87	0	–
0.25 to <0.50	3,454	108	77.77	3,457	0.39	0.1	10.93	3.7	668	19.31	1	–
0.50 to <0.75	3,434	158	89.06	3,534	0.66	0.1	10.68	3.0	835	23.64	3	–
0.75 to <2.50	7,790	380	47.54	7,723	1.48	0.3	10.99	3.2	1,939	25.11	11	–
2.50 to <10.00	15,444	2,237	27.88	15,645	5.93	0.4	6.30	1.8	3,328	21.27	57	–
10.00 to <100.00	3,827	443	22.02	3,879	15.94	0.1	7.77	1.8	1,484	38.25	48	–
100.00 (Default)	2,358	69	41.19	2,338	100.00	0.2	45.04	2.2	352	15.07	1,030	–
Sub-total	43,422	3,884	33.93	43,741	9.25	1.3	9.93	2.7	9,111	20.83	1,151	1,043
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	43,422	3,884	33.93	43,741	9.25	1.3	9.93	2.7	9,111	20.83	1,151	1,043
Other												
0.00 to <0.15	54,054	110,030	29.43	88,180	0.08	14.6	32.53	2.0	15,840	17.96	21	–
0.15 to <0.25	14,141	14,007	29.09	18,595	0.23	3.1	33.92	1.9	6,285	33.80	14	–
0.25 to <0.50	14,794	13,082	27.09	18,281	0.39	3.1	30.69	2.1	7,640	41.79	22	–
0.50 to <0.75	12,141	10,409	31.77	14,735	0.64	2.7	25.40	2.4	6,393	43.39	24	–
0.75 to <2.50	21,644	15,407	30.66	22,795	1.45	3.4	24.18	2.6	12,766	56.01	78	–
2.50 to <10.00	14,121	15,044	33.17	16,376	4.95	2.0	24.14	2.9	13,993	85.45	198	–
10.00 to <100.00	2,260	3,151	33.73	2,526	17.45	0.4	23.99	2.6	2,861	113.27	93	–
100.00 (Default)	9,120	1,783	27.27	9,183	100.00	1.4	41.05	2.2	2,009	21.88	3,524	–
Sub-total	142,276	182,914	29.83	190,672	5.79	30.8	30.51	2.2	67,787	35.55	3,975	4,003
Dilution risk	2,569	297	32.85	2,672	19.02	50.7	2.73	1.0	269	10.07	7	0
Sub-total incl. dilution risk	144,845	183,211	29.84	193,344	5.97	81.4	30.13	2.2	68,056	35.20	3,982	4,003

Jun 30, 2020

in € m. (unless stated otherwise) Exposure class/ PD scale	a EAD gross	b Undrawn commitments	c Weighted Credit Conversion Factor (CCF) (in %)	d EAD net, post CRM and post-CCF	e Average PD (in %)	f Number of obligors (in 1,000s)	g Average LGD (in %)	h Average maturity (in years)	i RWA	j Average RW (in %)	k Expected Loss	l Value adjustments and Provisions
Retail												
0.00 to <0.15	31,236	15,165	67.63	42,981	0.11	3,058.4	25.33	14.9	1,993	4.64	12	–
0.15 to <0.25	28,690	4,168	67.77	31,703	0.24	801.4	19.35	21.5	2,699	8.51	15	–
0.25 to <0.50	38,232	4,027	68.19	41,236	0.40	777.1	19.26	22.6	5,236	12.70	32	–
0.50 to <0.75	37,348	3,676	68.89	40,043	0.69	759.4	20.64	22.0	8,006	19.99	57	–
0.75 to <2.50	37,585	4,109	69.21	40,334	1.50	1,345.1	26.01	16.8	14,821	36.75	161	–
2.50 to <10.00	18,155	1,887	77.07	19,212	4.64	802.6	30.84	15.8	11,924	62.06	277	–
10.00 to <100.00	4,016	199	68.53	3,960	20.94	173.4	30.82	16.2	4,150	104.80	258	–
100.00 (Default)	4,380	50	59.87	4,396	100.00	157.6	43.29	8.9	1,082	24.62	1,836	–
Sub-total	199,642	33,281	68.58	223,864	3.25	7,874.9	23.57	18.9	49,911	22.30	2,647	2,856
Dilution risk	762	4,330	6.09	1,025	0.09	0	75.00	1.0	228	22.19	1	0
Sub-total incl. dilution risk	200,404	37,611	61.39	224,889	3.24	7,874.9	23.81	18.8	50,139	22.29	2,648	2,856
of which:												
Secured by real estate property SMEs												
0.00 to <0.15	1,400	164	58.69	1,494	0.12	7.3	12.06	14.4	43	2.86	0	–
0.15 to <0.25	1,604	116	57.70	1,663	0.23	7.7	11.85	15.5	76	4.57	0	–
0.25 to <0.50	1,721	124	58.01	1,784	0.39	8.2	12.58	15.3	128	7.16	1	–
0.50 to <0.75	1,363	73	53.52	1,391	0.65	6.7	12.41	15.5	137	9.85	1	–
0.75 to <2.50	1,578	73	58.28	1,593	1.37	7.7	12.57	16.2	260	16.31	3	–
2.50 to <10.00	657	25	54.94	641	4.52	3.4	12.63	14.8	214	33.39	4	–
10.00 to <100.00	122	3	74.17	118	18.87	0.7	12.33	13.9	65	55.14	3	–
100.00 (Default)	114	0	48.46	113	100.00	0.4	32.33	11.5	41	36.02	36	–
Sub-total	8,558	578	57.57	8,799	2.37	42.1	12.58	15.3	964	10.95	48	57
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	8,558	578	57.57	8,799	2.37	42.1	12.58	15.3	964	10.95	48	57
Secured by real estate property non-SMEs												
0.00 to <0.15	27,581	907	71.11	28,224	0.12	270.5	13.92	21.0	1,141	4.04	5	–
0.15 to <0.25	25,112	1,147	76.75	25,989	0.24	199.1	15.80	24.1	1,986	7.64	10	–
0.25 to <0.50	33,889	1,650	75.99	35,134	0.40	256.1	16.48	24.6	4,047	11.52	23	–
0.50 to <0.75	32,561	1,930	77.56	34,044	0.69	232.7	17.39	24.1	6,138	18.03	41	–
0.75 to <2.50	25,792	2,284	83.09	27,662	1.48	190.6	16.44	21.4	7,620	27.55	65	–
2.50 to <10.00	9,395	1,120	92.68	10,407	4.68	81.0	14.91	23.7	5,156	49.54	74	–
10.00 to <100.00	2,195	83	92.92	2,254	21.27	17.1	16.59	23.9	2,145	95.16	78	–
100.00 (Default)	1,595	16	94.73	1,606	100.00	14.5	17.98	21.1	606	37.76	289	–
Sub-total	158,121	9,138	79.94	165,320	2.09	1,261.7	16.03	23.2	28,839	17.44	585	678
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	158,121	9,138	79.94	165,320	2.09	1,261.7	16.03	23.2	28,839	17.44	585	678

												Jun 30, 2020
in € m.	a	b	c	d	e	f	g	h	i	j	k	l
(unless stated otherwise) Exposure class/ PD scale	EAD gross	Undrawn commitments	Weighted Credit Conversion Factor (CCF) (in %)	EAD net, post CRM and post-CCF	Average PD (in %)	Number of obligors (in 1,000s)	Average LGD (in %)	Average maturity (in years)	RWA	Average RW (in %)	Expected Loss	Value adjustments and Provisions
Qualifying Revolving												
0.00 to <0.15	51	11,435	71.05	8,175	0.08	2,526.4	60.00	0.0	312	3.81	4	–
0.15 to <0.25	65	1,539	70.52	1,150	0.24	432.1	58.57	0.0	104	9.00	2	–
0.25 to <0.50	109	923	67.15	729	0.39	313.0	56.62	0.0	94	12.91	2	–
0.50 to <0.75	139	609	64.01	529	0.69	266.3	56.87	0.0	107	20.20	2	–
0.75 to <2.50	240	493	63.44	553	1.53	307.0	55.48	0.0	196	35.48	5	–
2.50 to <10.00	168	170	63.54	276	4.79	173.2	56.66	0.0	220	79.81	8	–
10.00 to <100.00	46	19	65.50	58	20.23	35.9	56.02	0.0	98	167.72	6	–
100.00 (Default)	67	1	62.38	68	100.00	36.9	60.53	0.0	5	7.80	41	–
Sub-total	886	15,188	70.14	11,539	1.02	4,090.9	59.19	0.0	1,136	9.84	70	69
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	886	15,188	70.14	11,539	1.02	4,090.9	59.19	0.0	1,136	9.84	70	69
Other retail SMEs												
0.00 to <0.15	338	815	48.11	1,208	0.11	40.3	42.60	2.6	120	9.91	1	–
0.15 to <0.25	370	559	46.98	780	0.23	32.5	41.15	2.9	124	15.90	1	–
0.25 to <0.50	431	526	45.29	896	0.39	37.9	45.63	2.7	223	24.86	2	–
0.50 to <0.75	455	449	41.93	796	0.65	24.1	50.62	2.7	289	36.27	3	–
0.75 to <2.50	877	631	39.77	1,079	1.36	24.1	52.55	2.5	552	51.17	9	–
2.50 to <10.00	675	342	43.25	485	4.54	15.3	53.63	2.2	336	69.27	14	–
10.00 to <100.00	234	57	42.70	99	22.23	5.8	57.15	1.7	125	125.51	17	–
100.00 (Default)	262	12	39.65	260	100.00	3.6	56.25	2.0	70	26.80	146	–
Sub-total	3,642	3,391	44.51	5,604	5.90	183.5	47.78	2.6	1,838	32.80	191	230
Dilution risk	378	3,084	6.71	585	0.12	0	75.00	1.0	146	25.02	1	0
Sub-total incl. dilution risk	4,019	6,474	26.50	6,189	5.35	183.5	50.36	2.4	1,985	32.07	191	230
Other retail non-SMEs												
0.00 to <0.15	1,867	1,844	54.13	3,880	0.10	415.2	35.07	5.9	378	9.73	2	–
0.15 to <0.25	1,540	807	65.60	2,121	0.24	205.6	39.51	14.1	410	19.32	2	–
0.25 to <0.50	2,081	804	69.95	2,691	0.40	237.0	41.02	14.2	744	27.65	5	–
0.50 to <0.75	2,830	615	68.01	3,283	0.69	293.8	44.76	11.1	1,336	40.68	10	–
0.75 to <2.50	9,098	629	54.11	9,446	1.62	903.3	51.55	6.2	6,193	65.56	79	–
2.50 to <10.00	7,260	230	63.74	7,403	4.61	574.6	52.35	6.4	5,997	81.01	178	–
10.00 to <100.00	1,419	37	54.86	1,429	20.54	124.3	51.95	5.9	1,717	120.11	154	–
100.00 (Default)	2,342	21	44.15	2,348	100.00	109.8	59.19	1.5	360	15.34	1,325	–
Sub-total	28,435	4,987	60.65	32,602	9.75	2,863.6	48.00	7.5	17,134	52.56	1,754	1,822
Dilution risk	384	1,246	4.56	441	0.06	0	75.00	1.0	81	18.44	0	0
Sub-total incl. dilution risk	28,819	6,233	49.44	33,042	9.62	2,863.6	48.36	7.4	17,216	52.10	1,754	1,822
All exposure classes												
Dilution risk	3,476	4,628	7.81	3,836	14.11	50.7	21.99	1.0	505	13.15	8	0
Total incl. dilution risk	523,155	238,835	35.41	611,056	3.88	7,978.1	30.50	8.1	142,035	23.24	8,091	8,194

Article 452 (d-g) CRR - Foundation IRB exposure

The following series of tables details the Group's foundation IRB exposure distributed on our internal rating scale, separately for all relevant regulatory exposure classes. They exclude the counterparty credit risk position from derivatives and securities financing transactions which are presented separately in the section "Counterparty credit risk" in this report from page 138 to 152.

The tables show the EAD gross as well as the off-balance sheet exposure. All undrawn commitment exposure values shown below are assigned to the exposure class of their original counterparty and not to the exposure class of the protection seller.

In addition they provide the EAD net after CRM, where exposures covered by guarantees or credit derivatives is assigned to the protection seller. As a consequence the EAD net can be higher than the original balance sheet exposure.

The EAD net is presented in conjunction with exposures-weighted average PD, RWA and the average risk weight (RW). In addition it provides the average LGD and average maturity, which is regulatory pre-defined in the foundation IRB. Further details in the tables are number of obligors, expected loss and provisions.

EU CR6 – FIRB approach – Credit risk exposures by exposure class and PD range

in € m. (unless stated otherwise)												Dec 31, 2020
	a	b	c	d	e	f	g	h	i	j	k	l
Exposure class/ PD scale	EAD gross	Undrawn commitments	Weighted Credit Conversion Factor (CCF) (in %)	EAD net, post CRM and post-CCF	Average PD (in %)	Number of obligors (in 1,000s)	Average LGD (in %)	Average maturity (in years)	RWA	Average RW (in %)	Expected Loss	Value adjustments and Provisions
Central governments and central banks												
0.00 to <0.15	0	0	0	24	0	<0.1	45.00	5.9	0	0	0	–
0.15 to <0.25	0	0	0	0	0	<0.1	0	0	0	0	0	–
0.25 to <0.50	0	0	0	0	0	0	0	0	0	0	0	–
0.50 to <0.75	0	0	0	0	0	0	0	0	0	0	0	–
0.75 to <2.50	0	0	0	0	0	0	0	0	0	0	0	–
2.50 to <10.00	0	0	0	0	0	0	0	0	0	0	0	–
10.00 to <100.00	0	0	0	0	0	<0.1	0	0	0	0	0	–
100.00 (Default)	0	0	0	0	0	0	0	0	0	0	0	–
Sub-total	0	0	0	24	0	<0.1	45.00	5.9	0	0	0	0
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	0	0	0	24	0	<0.1	45.00	5.9	0	0	0	0
Institutions												
0.00 to <0.15	2	11	0	2	0.03	<0.1	97.39	1.0	1	33.28	0	–
0.15 to <0.25	0	3	0	0	0.23	<0.1	16.44	1.0	0	18.37	0	–
0.25 to <0.50	0	0	0	0	0.38	<0.1	42.69	1.0	0	61.52	0	–
0.50 to <0.75	0	0	0	0	0	<0.1	0	0	0	0	0	–
0.75 to <2.50	0	0	0	0	0	0	0	0	0	0	0	–
2.50 to <10.00	0	0	0	0	0	0	0	0	0	0	0	–
10.00 to <100.00	2	0	0	2	20.00	<0.1	45.00	0.0	4	286.68	0	–
100.00 (Default)	0	0	0	0	0	0	0	0	0	0	0	–
Sub-total	4	14	0	3	8.69	<0.1	73.40	0.6	5	143.40	0	0
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	4	14	0	3	8.69	<0.1	73.40	0.6	5	143.40	0	0
Corporates												
0.00 to <0.15	2,219	3,322	5.29	2,781	0.11	1.7	22.80	2.0	480	17.26	1	–
0.15 to <0.25	902	1,208	1.58	845	0.24	2.3	26.88	2.9	250	29.63	1	–
0.25 to <0.50	1,994	1,516	9.70	2,023	0.39	3.7	39.08	3.8	1,167	57.69	5	–
0.50 to <0.75	582	1,108	0.71	497	0.70	2.4	29.14	3.1	263	52.97	1	–
0.75 to <2.50	721	852	8.67	728	1.35	1.1	35.29	2.6	579	79.56	4	–
2.50 to <10.00	233	507	1.27	204	4.89	0.4	30.21	4.4	188	92.29	3	–
10.00 to <100.00	120	689	0.68	102	19.26	0.6	31.27	2.3	173	169.92	6	–
100.00 (Default)	155	66	0.59	136	100.00	0.2	47.77	2.3	0	0	63	–
Sub-total	6,925	9,268	4.69	7,315	2.55	12.4	30.22	2.8	3,101	42.39	83	81
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	6,925	9,268	4.69	7,315	2.55	12.4	30.22	2.8	3,101	42.39	83	81

in € m. (unless stated otherwise)												Dec 31, 2020
	a	b	c	d	e	f	g	h	i	j	k	l
Exposure class/ PD scale	EAD gross	Undrawn commitments	Weighted Credit Conversion Factor (CCF) (in %)	EAD net, post CRM and post-CCF	Average PD (in %)	Number of obligors (in 1,000s)	Average LGD (in %)	Average maturity (in years)	RWA	Average RW (in %)	Expected Loss	Value adjustments and Provisions
of which:												
SMEs												
0.00 to <0.15	6	18	15.46	24	0.09	<0.1	30.08	2.3	3	14.17	0	–
0.15 to <0.25	11	37	3.00	11	0.26	0.1	38.30	2.1	4	33.22	0	–
0.25 to <0.50	12	47	0	6	0.40	0.1	30.66	0.9	2	29.10	0	–
0.50 to <0.75	14	41	3.11	11	0.73	0.1	37.77	2.1	6	50.82	0	–
0.75 to <2.50	14	16	0	11	1.27	0.1	24.03	1.0	4	39.24	0	–
2.50 to <10.00	20	26	6.42	20	5.28	<0.1	33.08	2.2	17	83.97	0	–
10.00 to <100.00	6	8	0	2	5.83	<0.1	16.66	0.7	1	56.87	0	–
100.00 (Default)	3	7	0	3	100.00	<0.1	84.52	1.3	0	0	2	–
Sub-total	85	199	3.43	89	4.90	0.5	33.47	1.9	37	41.74	3	1
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	85	199	3.43	89	4.90	0.5	33.47	1.9	37	41.74	3	1
Specialized Lending												
0.00 to <0.15	0	0	0	0	0	0	0	0	0	0	0	–
0.15 to <0.25	0	0	0	0	0	0	0	0	0	0	0	–
0.25 to <0.50	1,116	171	74.50	1,244	0.38	0.5	45.00	4.2	841	67.63	4	–
0.50 to <0.75	0	0	0	0	0	0	0	0	0	0	0	–
0.75 to <2.50	107	63	72.07	152	1.23	0.1	45.00	2.9	121	79.19	1	–
2.50 to <10.00	19	0	75.00	20	3.78	<0.1	45.00	4.8	23	115.00	1	–
10.00 to <100.00	12	0	75.00	12	20.00	<0.1	45.00	5.0	30	250.00	1	–
100.00 (Default)	44	0	0	27	100.00	<0.1	56.18	5.2	0	0	13	–
Sub-total	1,298	236	73.85	1,455	2.16	0.6	45.17	4.1	1,015	69.75	20	12
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	1,298	236	73.85	1,455	2.16	0.6	45.17	4.1	1,015	69.75	20	12
Other												
0.00 to <0.15	2,212	3,304	5.23	2,756	0.11	1.7	22.74	2.0	477	17.29	1	–
0.15 to <0.25	891	1,170	1.53	834	0.24	2.2	26.73	3.0	247	29.59	1	–
0.25 to <0.50	866	1,298	1.49	773	0.40	3.1	29.62	3.1	324	41.92	1	–
0.50 to <0.75	568	1,067	0.62	486	0.70	2.3	28.94	3.1	258	53.02	1	–
0.75 to <2.50	600	772	3.64	565	1.38	1.0	32.88	2.5	454	80.44	3	–
2.50 to <10.00	193	481	0.94	164	4.98	0.3	28.08	4.6	149	90.58	2	–
10.00 to <100.00	103	680	0.64	88	19.49	0.5	29.75	2.0	142	161.73	5	–
100.00 (Default)	107	59	0.66	106	100.00	0.2	45.07	1.7	0	0	47	–
Sub-total	5,541	8,833	2.88	5,771	2.61	11.4	26.42	2.5	2,049	35.51	60	67
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	5,541	8,833	2.88	5,771	2.61	11.4	26.42	2.5	2,049	35.51	60	67
All exposure classes												
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Total incl. dilution risk	6,929	9,281	4.69	7,343	2.54	12.5	30.29	2.8	3,106	42.30	84	81

in € m. (unless stated otherwise)												Jun 30, 2020
	a	b	c	d	e	f	g	h	i	j	k	l
Exposure class/ PD scale	EAD gross	Undrawn commitments	Weighted Credit Conversion Factor (CCF) (in %)	EAD net, post CRM and post-CCF	Average PD (in %)	Number of obligors (in 1,000s)	Average LGD (in %)	Average maturity (in years)	RWA	Average RW (in %)	Expected Loss	Value adjustments and Provisions
Central governments and central banks												
0.00 to <0.15	0	0	0	34	0	<0.1	45.00	5.8	0	0	0	–
0.15 to <0.25	0	0	0	10	0.23	<0.1	12.33	1.0	1	13.75	0	–
0.25 to <0.50	0	0	0	0	0	0	0	0	0	0	0	–
0.50 to <0.75	0	0	0	0	0	0	0	0	0	0	0	–
0.75 to <2.50	0	0	0	0	0	0	0	0	0	0	0	–
2.50 to <10.00	0	0	0	0	0	0	0	0	0	0	0	–
10.00 to <100.00	0	0	0	0	0	0	0	0	0	0	0	–
100.00 (Default)	0	0	0	0	0	0	0	0	0	0	0	–
Sub-total	0	0	0	44	0.05	<0.1	37.68	4.7	1	3.08	0	0
Dilution risk	10	3	0	10	0.03	0	75.00	1.0	1	13.39	0	0
Sub-total incl. dilution risk	10	3	0	54	0.05	<0.1	44.51	4.0	3	4.97	0	0
Institutions												
0.00 to <0.15	0	0	0	2	0.03	<0.1	86.92	1.0	1	30.20	0	–
0.15 to <0.25	0	0	0	0	0.23	<0.1	13.57	1.0	0	15.91	0	–
0.25 to <0.50	0	0	0	0	0.38	<0.1	42.69	1.0	0	61.52	0	–
0.50 to <0.75	0	0	0	0	0	<0.1	0	0	0	0	0	–
0.75 to <2.50	0	0	0	0	0	0	0	0	0	0	0	–
2.50 to <10.00	0	0	0	0	0	0	0	0	0	0	0	–
10.00 to <100.00	0	0	0	0	20.00	<0.1	45.00	0.0	1	252.53	0	–
100.00 (Default)	0	0	0	0	0	0	0	0	0	0	0	–
Sub-total	0	0	0	2	3.28	<0.1	77.48	0.8	2	67.15	0	0
Dilution risk	2	11	0	2	0.04	0	75.00	1.0	0	16.52	0	0
Sub-total incl. dilution risk	3	11	0	5	1.69	<0.1	76.26	0.9	2	42.30	0	0
Corporates												
0.00 to <0.15	658	95	75.00	2,188	0.10	1.5	28.43	1.7	481	21.99	1	–
0.15 to <0.25	537	536	19.29	964	0.23	2.0	31.17	2.0	348	36.08	1	–
0.25 to <0.50	1,506	233	71.04	2,296	0.38	3.4	38.51	3.1	1,306	56.88	6	–
0.50 to <0.75	110	29	21.20	423	0.67	2.0	31.28	1.5	248	58.69	1	–
0.75 to <2.50	362	114	73.52	591	1.28	1.5	39.95	2.2	525	88.83	4	–
2.50 to <10.00	52	1	75.00	121	4.47	0.2	28.65	2.2	126	104.16	3	–
10.00 to <100.00	37	8	35.67	53	16.28	0.1	39.95	2.6	113	212.55	4	–
100.00 (Default)	113	3	75.00	125	100.00	0.2	44.93	2.0	0	0.03	55	–
Sub-total	3,374	1,019	42.78	6,760	2.41	10.9	33.83	2.3	3,147	46.55	74	72
Dilution risk	2,983	4,926	0.02	2,984	0.20	9.7	75.00	1.0	790	26.46	4	0
Sub-total incl. dilution risk	6,357	5,945	7.35	9,744	1.73	20.6	46.44	1.9	3,936	40.39	78	72

in € m. (unless stated otherwise)												Jun 30, 2020
	a	b	c	d	e	f	g	h	i	j	k	l
Exposure class/ PD scale	EAD gross	Undrawn commitments	Weighted Credit Conversion Factor (CCF) (in %)	EAD net, post CRM and post-CCF	Average PD (in %)	Number of obligors (in 1,000s)	Average LGD (in %)	Average maturity (in years)	RWA	Average RW (in %)	Expected Loss	Value adjustments and Provisions
of which:												
SMEs												
0.00 to <0.15	0	0	0	10	0.05	<0.1	39.77	1.0	1	15.25	0	–
0.15 to <0.25	7	3	75.00	13	0.23	0.1	44.85	3.4	5	39.59	0	–
0.25 to <0.50	10	3	35.03	16	0.38	0.1	42.01	1.9	8	51.83	0	–
0.50 to <0.75	2	2	75.00	8	0.69	0.1	43.59	2.5	6	70.55	0	–
0.75 to <2.50	3	0	0	5	1.37	0.1	38.56	1.0	3	66.15	0	–
2.50 to <10.00	7	0	75.00	12	4.60	<0.1	35.58	2.2	12	105.71	0	–
10.00 to <100.00	7	1	75.00	7	20.00	<0.1	45.00	2.0	15	197.80	1	–
100.00 (Default)	3	0	0	3	100.00	<0.1	45.00	1.4	0	0	2	–
Sub-total	41	9	63.33	74	7.58	0.3	41.59	2.1	51	68.80	2	4
Dilution risk	30	64	0	30	0.48	8.7	75.00	1.0	12	41.59	0	0
Sub-total incl. dilution risk	70	73	7.96	104	5.55	9.0	51.14	1.8	63	61.02	3	4
Specialized Lending												
0.00 to <0.15	0	0	0	0	0	0	0	0	0	0	0	–
0.15 to <0.25	0	0	0	0	0	0	0	0	0	0	0	–
0.25 to <0.50	1,126	213	71.51	1,279	0.38	0.5	45.00	4.2	856	66.98	4	–
0.50 to <0.75	0	0	0	0	0	0	0	0	0	0	0	–
0.75 to <2.50	148	91	73.16	215	1.23	0.1	45.00	2.6	166	77.38	1	–
2.50 to <10.00	25	0	75.00	26	3.78	<0.1	45.00	4.8	29	115.00	1	–
10.00 to <100.00	13	1	75.00	14	20.00	<0.1	45.00	5.0	34	250.00	1	–
100.00 (Default)	36	0	0	36	100.00	<0.1	45.00	4.6	0	0	18	–
Sub-total	1,348	306	72.01	1,568	3.00	0.6	45.00	4.0	1,086	69.25	25	14
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	1,348	306	72.01	1,568	3.00	0.6	45.00	4.0	1,086	69.25	25	14
Other												
0.00 to <0.15	657	95	75.00	2,178	0.10	1.5	28.38	1.7	480	22.02	1	–
0.15 to <0.25	530	533	18.94	951	0.23	1.9	30.98	2.0	343	36.04	1	–
0.25 to <0.50	369	17	70.83	1,002	0.38	2.9	30.18	1.8	441	44.06	1	–
0.50 to <0.75	108	27	16.88	415	0.67	1.9	31.03	1.4	242	58.45	1	–
0.75 to <2.50	211	22	75.00	371	1.30	1.4	37.04	2.0	355	95.77	3	–
2.50 to <10.00	19	1	75.00	84	4.67	0.1	22.69	1.4	84	100.63	2	–
10.00 to <100.00	17	7	25.07	32	13.84	0.1	36.64	1.7	64	200.09	2	–
100.00 (Default)	74	3	75.00	86	100.00	0.2	44.89	1.0	0	0.04	36	–
Sub-total	1,985	704	29.80	5,118	2.15	10.0	30.30	1.8	2,010	39.27	46	53
Dilution risk	2,954	4,862	0.02	2,954	0.20	1.0	75.00	1.0	777	26.31	4	0
Sub-total incl. dilution risk	4,939	5,566	3.78	8,072	1.44	10.9	46.66	1.5	2,787	34.52	50	53
All exposure classes												
Dilution risk	2,995	4,940	0.02	2,996	0.20	9.7	75.00	1.0	791	26.41	4	0
Total incl. dilution risk	6,370	5,959	7.33	9,803	1.72	20.6	46.44	1.9	3,941	40.20	78	72

Article 453 (g) CRR - Total IRB exposure covered by credit derivatives

The table below presents our IRB exposure – split into A-IRB and F-IRB – which is covered by credit derivatives. It shows the RWA by the relevant exposures classes prior and after the usage of CRM techniques in the form of credit derivatives where the exposure is then assigned to the exposure class of the protection seller. As a consequence the RWA after credit risk mitigation in a specific exposure class can be higher than before its recognition.

EU CR7 – IRB approach – Effect on the RWAs of credit derivatives used as CRM techniques

		Dec 31, 2020		Jun 30, 2020	
		a	b	a	b
	in € m.	pre-credit derivatives RWA	Actual RWA	pre-credit derivatives RWA	Actual RWA
7	Exposures under AIRB				
8	Central governments and central banks	16,801	16,801	15,618	15,801
9	Institutions	3,231	3,280	3,920	4,004
9a	Corporates	79,396	78,376	84,685	83,489
	of which:				
10	SMEs	6,529	6,529	6,424	6,425
11	Specialized lending	7,953	7,953	9,112	9,111
12	Other	64,914	63,895	69,149	67,953
12a	Retail	50,287	50,287	50,139	50,139
	of which:				
13	Secured by real estate property SMEs	910	910	964	964
14	Secured by real estate property non-SMEs	29,707	29,707	28,839	28,839
15	Qualifying revolving	1,121	1,121	1,136	1,136
16	Other retail SMEs	1,333	1,333	1,985	1,985
17	Other retail non-SMEs	17,215	17,215	17,216	17,216
18	Equity	9,668	9,668	9,122	9,122
19	Other non-credit obligation asset	8,069	8,069	6,115	6,115
19a	Sub-total AIRB	**167,451**	**166,481**	169,599	168,670
1	Exposures under FIRB				
2	Central governments and central banks	0	0	3	3
3	Institutions	5	5	4	2
3a	Corporates	3,101	3,101	4,011	3,936
	of which:				
4	SMEs	37	37	63	63
5	Specialized lending	1,015	1,015	1,086	1,086
6	Other	2,049	2,049	2,861	2,787
6a	Sub-total FIRB	**3,106**	**3,106**	4,017	3,941
20	Total	**170,557**	**169,587**	173,616	172,611

Our RWA in the IRB approach were at € 169.6 billion as of December 31, 2020, compared to € 172.6 billion as of June 30, 2020. The overall decrease of € 3.0 billion is mainly driven by the decommissioning of our dilution risk model and a decrease in the exposure class for corporates.

Article 438 (d) CRR - Development of credit risk RWA

The following table provides an analysis of key drivers for RWA movements observed for credit risk, excluding counterparty credit risk, to the extent covered in IRB approaches in the current and previous reporting period. It also shows the corresponding movements in capital requirements, derived from RWA with an 8 % capital ratio.

EU CR8 – RWA flow statement of credit risk exposures under the IRB approach

		Three months ended Dec 31, 2020		Three months ended Sep 30, 2020	
		a	b	a	b
	in € m.	RWA	Capital requirements	RWA	Capital requirements
1	Credit risk RWA opening balance	**152,032**	**12,163**	152,090	12,167
2	Book size	(2,786)	(223)	2,383	191
3	Book quality	(638)	(51)	299	24
4	Model updates	(1,281)	(102)	0	0
5	Methodology and policy	2,691	215	0	0
6	Acquisitions and disposals	(327)	(26)	(685)	(55)
7	Foreign exchange movements	(1,532)	(123)	(2,055)	(164)
8	Other	0	0	0	0
9	Credit risk RWA closing balance	**148,159**	**11,853**	152,032	12,163

Organic changes in our portfolio size and composition are considered in the category “book size”. The category “book quality” mainly represents the effects from portfolio rating migrations, loss given default, model parameter recalibrations as well as collateral coverage and netting activities. “Model updates” include model refinements and advanced model roll out. RWA movements resulting from externally, regulatory-driven changes, e.g. applying new regulations, are considered in the “methodology and policy” section. “Acquisition and disposals” show significant exposure movements which can be clearly assigned to new businesses or disposal-related activities. Changes that cannot be attributed to the above categories are reflected in the category “other”.

The decrease in RWA for credit risk exposures under the IRB approach of 2.5 % or € 3.9 billion since September 30, 2020 is primarily observed across all categories including decrease stemming from FX related credit risk RWA movements, partially offset by an increase in “methodology and policy”. The category “book size” reflects a decreased client demand versus the prior quarter. Within “model updates” mainly the decommissioning of our dilution risk model supports the decrease. The category “book quality” reflects a RWA decline stemming from parameter recalibrations. Furthermore, the decrease in the category “acquisition and disposals” is primarily within the Private Bank business. This was partly offset by increase in the category “methodology and policy” which shows the changed treatment of equity investments and regulatory prudent valuation of software assets.

Article 452 (h-i) CRR - Model validation results and expected versus actual losses

Advanced IRBA – Model validation results

The validation reviews conducted in 2020 for advanced IRBA rating systems (including IRBA rating systems used in DB Private Bank for ex-Postbank portfolios) triggered recalibrations as shown in the table below. None of the triggered recalibrations individually nor the impact of all recalibrations in the aggregate impacted or indicated to impact our regulatory capital requirements in a progressive way.

Validation results for risk parameters used in our advanced IRBA

						2020
	PD		LGD		EAD	
	Count	EAD in %	Count	EAD in %	Count	EAD in %
Appropriate	82	84.7	110	86.2	70	90.9
Overly conservative	8	10.6	22	10.5	14	8.4
Progressive	20	4.8	23	3.3	5	0.8
Total	110	100.0	155	100.0	89	100.0
Of which already recalibrated and introduced in 2020						
Overly conservative	0	0.0	0	0.0	0	0.0
Progressive	0	0.0	0	0.0	0	0.0
Total	0	0.0	0	0.0	0	0.0

						2019
		PD		LGD		EAD
	Count	EAD in %	Count	EAD in %	Count	EAD in %
Appropriate	86	81.7	134	88.1	71	79.8
Overly conservative	10	13.6	29	9.9	15	19.4
Progressive	18	4.8	20	2.0	7	0.8
Total	114	100.0	183	100.0	93	100.0
Of which already recalibrated and introduced in 2019						
Overly conservative	0	0.0	20	3.0	2	15.0
Progressive	0	0.0	7	0.6	3	0.1
Total	0	0.0	27	3.7	5	15.1

Individual risk parameter settings are classified as appropriate if no recalibration was triggered by the validation and thus the application of the current parameter setting is continued since still sufficiently conservative. A parameter classifies as overly conservative or progressive if the validation triggers a recalibration analysis leading to a potential downward or upward change of the current setting, respectively. The breakdown for PD, LGD and EAD is presented by number of parameters as well as by the relative EAD attached to the respective parameter as of December 31, 2020 and December 31, 2019.

The validations during 2020 largely confirmed our parameter settings. Negatively validated PD parameters with high materiality (i.e. accounting for more than 5 % of EAD) were caused by one rating system. For this rating system (contributing 6.6 % of EAD) the PD parameter was classified as overly conservative. The overhaul has already been performed with planned implementation in 2021. Validations furthermore classified one LGD parameter with high materiality (contributing 5.7 % of EAD) as overly conservative. All other negatively validated parameters are only applied to smaller portfolios with according lower materiality. Overall, for the majority of risk parameters where a recalibration was triggered during 2020 validation, the implementation of amended parameters is already ongoing. The go-live of recalibrated parameters is aligned with the EBA IRBA Repair Programme and the according credit model overhauls to reflect new regulatory requirements with a planned completion of corresponding implementation by end of 2021.

The below table EU CR9 aims at providing backtesting information for probabilities of default (“PD”). It compares the PD used in the advanced IRB capital calculations with the effective obligors’ default rates presented on a five year average by regulatory exposure classes. It has to be noted that the below table reflects credit risk as well as counterparty credit risk information simultaneously in line with our internal rating model validation practice where ratings are validated on a counterparty level across all exposure types. Moreover, some limitations have to be considered when comparing the below backtesting results with the above presented PD model validation results: Whilst in line with our internal procedures model validation is conducted on the level of the rating model and the model validation results provided above reflect this practice, for the below presentation by regulatory exposure classes the underlying ratings models have been assigned subsequently to the relevant regulatory exposure class. This different way of aggregation applied for the below backtesting information may result in some bias for the below backtesting results in contrast to the above model validation results.

EU CR9 IRB backtesting of PD per exposure class for Advanced IRBA

								Dec 31, 2020
a/b	c	d	e		f	g	h	i
				Number of obligors				
Exposure class/ PD Range	External rating equivalent	Weighted average PD (in %)	Arithmetic average PD by obligors (in %)	End of previous year (in 1,000s)	End of the year (in 1,000s)	Defaulted obligors in the year	of which new obligors in the year	Average historical annual default rate (in %)
Central governments and central banks								
0.00 to <0.15	AAA to BBB+	0.00	0.03	0.3	0.2	0	0	0.00
0.15 to <0.25	BBB+ to BBB	0.23	0.23	<0.1	<0.1	0	0	0.00
0.25 to <0.50	BBB to BBB-	0.39	0.39	<0.1	<0.1	0	0	0.76
0.50 to <0.75	BBB- to BB+	0.64	0.64	<0.1	<0.1	0	0	0.89
0.75 to <2.50	BB+ to BB-	1.14	1.53	<0.1	<0.1	2	0	2.27
2.50 to <10.00	BB- to B-	6.28	5.31	<0.1	<0.1	3	0	2.42
10.00 to <100.00	B- to CCC-	13.00	14.50	<0.1	<0.1	0	0	14.42
100.00 (Default)	CCC- to D	100.00	100.00	<0.1	<0.1	0	0	0.00
Sub-total	N/M	0.07	4.02	0.4	0.4	5	0	0.81
Institutions								
0.00 to <0.15	AAA to BBB+	0.05	0.07	0.7	0.6	0	0	0.00
0.15 to <0.25	BBB+ to BBB	0.23	0.23	0.1	0.1	0	0	0.00
0.25 to <0.50	BBB to BBB-	0.39	0.39	0.1	0.1	0	0	0.19
0.50 to <0.75	BBB- to BB+	0.64	0.65	0.1	0.1	0	0	0.00
0.75 to <2.50	BB+ to BB-	1.23	1.39	0.1	0.1	1	0	0.50
2.50 to <10.00	BB- to B-	3.11	4.31	<0.1	<0.1	1	0	2.54
10.00 to <100.00	B- to CCC-	13.00	13.96	<0.1	<0.1	0	0	3.17
100.00 (Default)	CCC- to D	100.00	N/M	0	<0.1	1	0	0.00
Sub-total	N/M	8.09	1.44	1.1	1.1	3	0	0.28
Corporates								
0.00 to <0.15	AAA to BBB+	0.08	0.08	27.4	24.9	32	0	0.05
0.15 to <0.25	BBB+ to BBB	0.23	0.25	6.2	6.1	15	1	0.13
0.25 to <0.50	BBB to BBB-	0.39	0.44	5.8	5.7	23	0	0.30
0.50 to <0.75	BBB- to BB+	0.66	0.72	5.0	5.0	50	0	0.53
0.75 to <2.50	BB+ to BB-	1.47	1.52	6.7	6.4	134	8	1.16
2.50 to <10.00	BB- to B-	5.44	4.97	3.5	3.6	146	6	2.71
10.00 to <100.00	B- to CCC-	16.49	20.46	0.9	0.7	112	5	10.66
100.00 (Default)	CCC- to D	100.00	100.00	0.1	0.1	18	6	7.67
Sub-total	N/M	6.63	4.20	55.6	52.7	530	26	0.60
of which:								
SMEs								
0.00 to <0.15	AAA to BBB+	0.09	0.10	0.2	1.5	0	0	0.00
0.15 to <0.25	BBB+ to BBB	0.22	0.21	0.5	0.8	0	0	0.30
0.25 to <0.50	BBB to BBB-	0.39	0.38	0.4	0.5	0	0	0.18
0.50 to <0.75	BBB- to BB+	0.66	0.68	0.3	0.3	6	0	0.68
0.75 to <2.50	BB+ to BB-	1.49	1.47	0.5	0.4	17	0	2.67
2.50 to <10.00	BB- to B-	5.95	5.09	0.3	0.2	10	0	4.67
10.00 to <100.00	B- to CCC-	15.31	16.33	0.2	0.1	23	1	17.88
100.00 (Default)	CCC- to D	100.00	100.00	<0.1	<0.1	3	0	0.00
Sub-total	N/M	10.74	9.39	2.5	3.9	59	1	2.18
Specialized lending								
0.00 to <0.15	AAA to BBB+	0.10	0.11	5.7	6.3	20	0	0.15
0.15 to <0.25	BBB+ to BBB	0.22	0.29	1.8	2.1	11	0	0.22
0.25 to <0.50	BBB to BBB-	0.41	0.51	1.9	2.1	17	0	0.42
0.50 to <0.75	BBB- to BB+	0.70	0.83	1.7	1.7	26	0	0.80
0.75 to <2.50	BB+ to BB-	1.53	1.74	2.1	2.1	63	1	1.64
2.50 to <10.00	BB- to B-	4.84	5.15	1.0	1.0	69	1	3.82
10.00 to <100.00	B- to CCC-	18.68	22.25	0.2	0.1	35	0	11.90
100.00 (Default)	CCC- to D	100.00	100.00	<0.1	<0.1	1	1	29.17
Sub-total	N/M	2.51	2.90	14.4	15.5	242	3	1.06

								Dec 31, 2020
a/b	c	d	e		f	g	h	i
				Number of obligors				
Exposure class/ PD Range	External rating equivalent	Weighted average PD (in %)	Arithmetic average PD by obligors (in %)	End of previous year (in 1,000s)	End of the year (in 1,000s)	Defaulted obligors in the year	of which new obligors in the year	Average historical annual default rate (in %)
Other								
0.00 to <0.15	AAA to BBB+	0.08	0.07	21.6	17.1	12	0	0.03
0.15 to <0.25	BBB+ to BBB	0.23	0.23	3.8	3.2	4	1	0.07
0.25 to <0.50	BBB to BBB-	0.39	0.39	3.5	3.1	6	0	0.23
0.50 to <0.75	BBB- to BB+	0.65	0.65	3.0	3.0	18	0	0.39
0.75 to <2.50	BB+ to BB-	1.45	1.37	4.1	3.8	54	7	0.84
2.50 to <10.00	BB- to B-	5.11	4.81	2.1	2.4	67	5	2.08
10.00 to <100.00	B- to CCC-	17.35	19.60	0.4	0.5	54	4	9.93
100.00 (Default)	CCC- to D	100.00	100.00	0.1	0.1	14	5	0.37
Sub-total	N/M	6.22	4.45	38.7	33.3	229	22	0.41
Retail								
0.00 to <0.15	AAA to BBB+	0.11	0.09	2,644.0	1,347.7	768	8	0.03
0.15 to <0.25	BBB+ to BBB	0.22	0.22	1,238.8	581.6	1,042	36	0.10
0.25 to <0.50	BBB to BBB-	0.39	0.39	838.6	585.7	1,848	95	0.21
0.50 to <0.75	BBB- to BB+	0.69	0.69	824.3	638.8	3,140	281	0.36
0.75 to <2.50	BB+ to BB-	0.66	1.53	1,407.8	1,240.3	13,655	1,192	0.90
2.50 to <10.00	BB- to B-	4.65	4.71	848.9	709.2	28,243	2,157	2.94
10.00 to <100.00	B- to CCC-	20.01	21.05	174.7	140.5	35,472	2,009	18.68
100.00 (Default)	CCC- to D	100.27	100.00	74.4	79.5	12,068	285	11.37
Sub-total	N/M	2.77	5.36	8,051.5	5,323.3	96,236	6,063	1.34
of which:								
Secured by real estate property								
0.00 to <0.15	AAA to BBB+	0.11	0.10	190.1	183.3	195	3	0.06
0.15 to <0.25	BBB+ to BBB	0.22	0.22	243.5	237.0	315	9	0.09
0.25 to <0.50	BBB to BBB-	0.39	0.39	258.8	250.4	543	6	0.15
0.50 to <0.75	BBB- to BB+	0.69	0.69	238.4	238.0	706	17	0.22
0.75 to <2.50	BB+ to BB-	1.43	1.50	198.6	198.2	1,036	21	0.40
2.50 to <10.00	BB- to B-	4.59	4.66	85.5	78.4	1,490	16	1.31
10.00 to <100.00	B- to CCC-	20.41	20.46	16.5	13.4	2,365	77	12.87
100.00 (Default)	CCC- to D	100.00	100.00	9.4	9.4	4,182	28	8.12
Sub-total	N/M	1.65	3.06	1,240.8	1,208.2	10,832	177	0.57
Qualifying revolving								
0.00 to <0.15	AAA to BBB+	0.10	0.09	2,198.8	9.4	49	0	0.02
0.15 to <0.25	BBB+ to BBB	0.22	0.21	756.0	16.3	52	1	0.12
0.25 to <0.50	BBB to BBB-	0.39	0.38	327.7	14.8	57	15	0.26
0.50 to <0.75	BBB- to BB+	0.69	0.69	292.0	15.4	95	83	0.40
0.75 to <2.50	BB+ to BB-	1.84	1.53	338.2	15.0	289	246	1.00
2.50 to <10.00	BB- to B-	3.55	4.85	192.2	10.5	366	294	3.58
10.00 to <100.00	B- to CCC-	19.18	22.77	41.5	4.8	254	80	15.32
100.00 (Default)	CCC- to D	100.00	100.00	22.3	22.3	2,401	59	0.00
Sub-total	N/M	1.02	18.33	4,168.7	108.5	3,563	778	0.74
Other								
0.00 to <0.15	AAA to BBB+	0.10	0.10	270.0	43.9	46	10	0.07
0.15 to <0.25	BBB+ to BBB	0.19	0.22	222.5	89.2	144	42	0.14
0.25 to <0.50	BBB to BBB-	0.39	0.40	238.0	87.5	278	100	0.25
0.50 to <0.75	BBB- to BB+	0.69	0.69	296.6	124.9	705	220	0.46
0.75 to <2.50	BB+ to BB-	1.68	1.55	905.7	239.5	3,468	3,195	1.03
2.50 to <10.00	BB- to B-	4.68	4.65	555.3	181.4	7,312	2,812	3.22
10.00 to <100.00	B- to CCC-	19.52	20.66	115.9	70.0	11,261	1,751	21.06
100.00 (Default)	CCC- to D	100.00	100.00	42.6	47.7	5,484	196	12.24
Sub-total	N/M	7.41	6.60	2,646.7	884.0	28,698	8,326	2.09

								Dec 31, 2019
a/b	c	d	e	f		g	h	i
				Number of obligors				
Exposure class/ PD Range	External rating equivalent	Weighted average PD (in %)	Arithmetic average PD by obligors (in %)	End of previous year (in 1,000s)	End of the year (in 1,000s)	Defaulted obligors in the year	of which new obligors in the year	Average historical annual default rate (in %)
Central governments and central banks								
0.00 to <0.15	AAA to BBB+	0.01	0.03	0.3	0.3	0	0	0.00
0.15 to <0.25	BBB+ to BBB	0.23	0.23	<0.1	<0.1	0	0	0.00
0.25 to <0.50	BBB to BBB-	0.39	0.39	<0.1	<0.1	0	0	0.76
0.50 to <0.75	BBB- to BB+	0.64	0.64	<0.1	<0.1	0	0	0.89
0.75 to <2.50	BB+ to BB-	1.63	1.43	<0.1	<0.1	0	0	1.03
2.50 to <10.00	BB- to B-	4.29	5.06	<0.1	<0.1	0	0	0.00
10.00 to <100.00	B- to CCC-	13.00	13.00	<0.1	<0.1	1	0	17.55
100.00 (Default)	CCC- to D	100.00	100.00	<0.1	<0.1	0	0	N/M
Sub-total	N/M	0.08	2.29	0.4	0.4	1	0	0.54
Institutions								
0.00 to <0.15	AAA to BBB+	0.05	0.07	0.7	0.7	0	0	0.00
0.15 to <0.25	BBB+ to BBB	0.23	0.23	0.1	0.1	0	0	0.00
0.25 to <0.50	BBB to BBB-	0.39	0.39	0.1	0.1	0	0	0.00
0.50 to <0.75	BBB- to BB+	0.64	0.65	0.1	0.1	0	0	0.00
0.75 to <2.50	BB+ to BB-	1.43	1.39	0.1	0.1	1	0	0.40
2.50 to <10.00	BB- to B-	3.47	4.89	<0.1	<0.1	0	0	1.70
10.00 to <100.00	B- to CCC-	13.29	15.50	<0.1	<0.1	0	0	2.87
100.00 (Default)	CCC- to D	100.00	N/M	0	0	0	0	0.00
Sub-total	N/M	0.39	1.45	1.1	1.0	1	0	0.20
Corporates								
0.00 to <0.15	AAA to BBB+	0.07	0.08	27.4	25.9	6	0	0.03
0.15 to <0.25	BBB+ to BBB	0.23	0.25	6.1	6.1	14	1	0.11
0.25 to <0.50	BBB to BBB-	0.39	0.44	5.9	5.7	12	3	0.25
0.50 to <0.75	BBB- to BB+	0.65	0.72	5.0	5.0	28	3	0.38
0.75 to <2.50	BB+ to BB-	1.44	1.52	6.7	6.5	485	402	0.90
2.50 to <10.00	BB- to B-	4.85	4.97	3.5	3.4	132	6	2.59
10.00 to <100.00	B- to CCC-	17.64	20.33	0.9	0.7	71	0	9.31
100.00 (Default)	CCC- to D	100.00	100.00	0.1	0.1	6	5	42.86
Sub-total	N/M	4.56	4.11	55.5	53.4	754	420	0.50
of which:								
SMEs								
0.00 to <0.15	AAA to BBB+	0.10	0.11	5.6	6.1	1	0	0.08
0.15 to <0.25	BBB+ to BBB	0.25	0.29	2.0	2.3	3	0	0.17
0.25 to <0.50	BBB to BBB-	0.42	0.50	2.1	2.3	3	0	0.34
0.50 to <0.75	BBB- to BB+	0.70	0.83	1.8	1.8	10	0	0.57
0.75 to <2.50	BB+ to BB-	1.47	1.77	2.2	2.4	30	0	1.33
2.50 to <10.00	BB- to B-	4.57	5.39	1.0	1.1	57	0	3.31
10.00 to <100.00	B- to CCC-	20.90	22.68	0.2	0.2	23	0	8.32
100.00 (Default)	CCC- to D	100.00	100.00	<0.1	<0.1	1	0	75.00
Sub-total	N/M	3.05	2.50	15.0	16.2	128	0	0.95
Specialized lending								
0.00 to <0.15	AAA to BBB+	0.09	0.09	0.1	1.5	0	0	0.00
0.15 to <0.25	BBB+ to BBB	0.22	0.22	0.1	0.3	0	0	0.33
0.25 to <0.50	BBB to BBB-	0.39	0.39	0.1	0.3	0	0	0.00
0.50 to <0.75	BBB- to BB+	0.65	0.66	0.1	0.2	0	0	0.00
0.75 to <2.50	BB+ to BB-	1.48	1.49	0.3	0.2	0	0	1.71
2.50 to <10.00	BB- to B-	5.31	5.06	0.3	0.1	4	0	5.28
10.00 to <100.00	B- to CCC-	16.58	17.60	0.2	<0.1	1	0	17.86
100.00 (Default)	CCC- to D	100.00	100.00	<0.1	<0.1	0	0	N/M
Sub-total	N/M	9.49	14.25	1.2	2.5	5	0	2.40

Dec 31, 2019

a/b	c	d	e	f		g	h	i
				Number of obligors				
Exposure class/ PD Range	External rating equivalent	Weighted average PD (in %)	Arithmetic average PD by obligors (in %)	End of previous year (in 1,000s)	End of the year (in 1,000s)	Defaulted obligors in the year	of which new obligors in the year	Average historical annual default rate (in %)
Other								
0.00 to <0.15	AAA to BBB+	0.07	0.06	21.6	18.2	5	0	0.03
0.15 to <0.25	BBB+ to BBB	0.23	0.23	4.0	3.5	11	1	0.10
0.25 to <0.50	BBB to BBB-	0.39	0.39	3.7	3.2	9	3	0.23
0.50 to <0.75	BBB- to BB+	0.64	0.65	3.1	3.0	18	3	0.33
0.75 to <2.50	BB+ to BB-	1.43	1.36	4.2	3.9	455	402	0.79
2.50 to <10.00	BB- to B-	4.55	4.67	2.1	2.2	71	6	2.28
10.00 to <100.00	B- to CCC-	19.62	19.99	0.4	0.5	47	0	9.77
100.00 (Default)	CCC- to D	100.00	100.00	0.1	0.1	5	5	11.11
Sub-total	N/M	3.89	4.52	39.3	34.7	621	420	0.41
Retail								
0.00 to <0.15	AAA to BBB+	0.10	0.09	1,362.8	1,327.3	632	9	0.04
0.15 to <0.25	BBB+ to BBB	0.22	0.23	626.9	592.8	883	37	0.11
0.25 to <0.50	BBB to BBB-	0.39	0.41	603.0	595.0	1,520	99	0.20
0.50 to <0.75	BBB- to BB+	0.69	0.69	624.4	624.1	2,633	253	0.36
0.75 to <2.50	BB+ to BB-	1.23	1.57	1,178.5	1,206.3	14,034	3,438	0.95
2.50 to <10.00	BB- to B-	4.51	4.39	669.1	734.5	26,178	2,660	2.97
10.00 to <100.00	B- to CCC-	20.81	20.98	149.0	144.5	31,719	531	18.64
100.00 (Default)	CCC- to D	100.00	100.00	82.2	71.4	4,133	88	20.01
Sub-total	N/M	2.88	4.58	5,296.0	5,295.9	81,732	7,115	1.26
of which:								
Secured by real estate property								
0.00 to <0.15	AAA to BBB+	0.11	0.10	196.6	185.7	141	1	0.06
0.15 to <0.25	BBB+ to BBB	0.22	0.22	248.6	243.5	253	1	0.09
0.25 to <0.50	BBB to BBB-	0.40	0.40	258.1	255.7	471	2	0.17
0.50 to <0.75	BBB- to BB+	0.69	0.69	236.4	231.8	635	9	0.24
0.75 to <2.50	BB+ to BB-	1.93	1.50	199.7	192.0	910	15	0.41
2.50 to <10.00	BB- to B-	4.70	4.63	90.2	82.9	1,379	2	1.46
10.00 to <100.00	B- to CCC-	20.95	21.06	17.2	14.8	2,317	1	13.25
100.00 (Default)	CCC- to D	100.00	100.00	9.3	9.4	576	4	13.33
Sub-total	N/M	1.76	2.20	1,256.1	1,215.6	6,682	35	0.54
Qualifying revolving								
0.00 to <0.15	AAA to BBB+	0.08	0.08	881.2	875.6	322	0	0.03
0.15 to <0.25	BBB+ to BBB	0.23	0.25	126.9	121.6	304	1	0.14
0.25 to <0.50	BBB to BBB-	0.37	0.42	107.1	103.0	490	15	0.27
0.50 to <0.75	BBB- to BB+	0.64	0.70	102.5	102.6	665	81	0.44
0.75 to <2.50	BB+ to BB-	1.45	1.49	133.9	134.0	2,180	248	1.31
2.50 to <10.00	BB- to B-	4.74	4.85	83.9	85.0	4,333	290	3.64
10.00 to <100.00	B- to CCC-	22.44	21.03	13.5	14.3	3,003	69	17.58
100.00 (Default)	CCC- to D	100.00	100.00	23.9	19.4	258	13	0.00
Sub-total	N/M	1.03	3.20	1,472.9	1,455.5	11,555	717	0.66
Other								
0.00 to <0.15	AAA to BBB+	0.09	0.09	285.0	266.1	176	8	0.06
0.15 to <0.25	BBB+ to BBB	0.18	0.23	251.7	227.8	355	35	0.12
0.25 to <0.50	BBB to BBB-	0.40	0.41	237.7	236.2	596	82	0.21
0.50 to <0.75	BBB- to BB+	0.68	0.69	285.4	289.7	1,401	163	0.42
0.75 to <2.50	BB+ to BB-	1.58	1.59	844.8	880.3	10,966	3,175	1.04
2.50 to <10.00	BB- to B-	4.18	4.26	495.1	566.6	20,471	2,368	3.18
10.00 to <100.00	B- to CCC-	20.55	21.13	118.2	115.4	26,399	461	19.85
100.00 (Default)	CCC- to D	100.00	100.00	49.1	42.6	3,567	71	21.19
Sub-total	N/M	7.52	6.18	2,567.0	2,624.8	63,931	6,363	1.99

Foundation IRBA – Model validation results

The below table summarizes the outcome of the model validations for the risk parameter PD solely used in our foundation IRBA applied at DB Private Bank for ex Postbank portfolio. Validation results of PD parameters also used in the advanced IRBA were already shown in the overview of advanced IRBA parameters but may also be used for foundation IRBA exposures as e.g. factoring. If individual risk parameter settings are classified as appropriate, no recalibration was triggered by the validation. The breakdown is presented by number as well as by the relative EAD attached to the respective parameter as of December 31, 2020 and as of December 31, 2019.

Validation results of risk parameters used in our Foundation IRBA at former Postbank portfolio

				PD
		2020		2019
	Count	EAD in %	Count	EAD in %
Appropriate	1	100.0	1	100.0
Overly conservative	0	0.0	0	0.0
Progressive	0	0.0	0	0.0
Total	**1**	**100.0**	1	100.0
Of which already recalibrated and introduced		in 2020		in 2019
Overly conservative	0	0.0	0	0.0
Progressive	0	0.0	0	0.0
Total	**0**	**0.0**	0	0.0

The performed analyses classify the PD parameter setting for the foundation IRBA relevant rating system as appropriate.

The below table EU CR9 aims at providing backtesting information for probabilities of default (“PD”) in comparing the PD used in the foundation IRB capital calculations with the effective obligors’ default rates presented on a five year average by regulatory exposure classes. The conceptual design as well as the structural limitations to be considered are the same as described above for the advanced IRB backtesting table.

EU CR9 IRB backtesting of PD per exposure class for Foundation IRBA

Dec 31, 2020

a/b	c	d	e		f	g	h	i
			Arithmetic	Number of obligors				Average
Exposure class/ PD Range	External rating equivalent	Weighted average PD (in %)	average PD by obligors (in %)	End of previous year (in 1,000s)	End of the year (in 1,000s)	Defaulted obligors in the year	of which new obligors in the year	historical annual default rate (in %)
Central governments and central banks								
0.00 to <0.15	AAA to BBB+	0.00	0.00	0	0	0	0	0.00
0.15 to <0.25	BBB+ to BBB	0.00	0.00	0	0	0	0	0.00
0.25 to <0.50	BBB to BBB-	0.00	0.00	0	0	0	0	0.00
0.50 to <0.75	BBB- to BB+	0.00	0.00	0	0	0	0	0.00
0.75 to <2.50	BB+ to BB-	0.00	0.00	0	0	0	0	0.00
2.50 to <10.00	BB- to B-	0.00	0.00	0	0	0	0	0.00
10.00 to <100.00	B- to CCC-	0.00	0.00	0	0	0	0	0.00
100.00 (Default)	CCC- to D	0.00	0.00	0	0	0	0	0.00
Sub-total	N/M	0.00	0.00	0	0	0	0	0.00
Institutions								
0.00 to <0.15	AAA to BBB+	0.00	0.00	0	0	0	0	0.00
0.15 to <0.25	BBB+ to BBB	0.00	0.00	0	0	0	0	0.00
0.25 to <0.50	BBB to BBB-	0.00	0.00	0	0	0	0	0.00
0.50 to <0.75	BBB- to BB+	0.00	0.00	0	0	0	0	0.00
0.75 to <2.50	BB+ to BB-	0.00	0.00	0	0	0	0	0.00
2.50 to <10.00	BB- to B-	0.00	0.00	0	0	0	0	0.00
10.00 to <100.00	B- to CCC-	0.00	0.00	0	0	0	0	0.00
100.00 (Default)	CCC- to D	0.00	0.00	0	0	0	0	0.00
Sub-total	N/M	0.00	0.00	0	0	0	0	0.00
Corporates								
0.00 to <0.15	AAA to BBB+	0.10	0.10	6.7	5.7	4	0	0.30
0.15 to <0.25	BBB+ to BBB	0.19	0.21	2.0	1.9	7	1	0.33
0.25 to <0.50	BBB to BBB-	0.35	0.38	2.5	2.0	8	1	0.18
0.50 to <0.75	BBB- to BB+	0.58	0.69	1.5	1.6	4	0	0.11
0.75 to <2.50	BB+ to BB-	1.09	1.36	0.6	0.8	5	0	0.80
2.50 to <10.00	BB- to B-	3.77	4.68	0.1	0.1	0	0	2.69
10.00 to <100.00	B- to CCC-	13.67	18.26	0.1	0.5	2	0	1.29
100.00 (Default)	CCC- to D	100.00	100.00	0.1	0.1	24	7	0.00
Sub-total	N/M	2.32	2.11	13.5	12.8	54	9	0.28
of which:								
SMEs								
0.00 to <0.15	AAA to BBB+	0.11	0.10	<0.1	<0.1	0	0	0.00
0.15 to <0.25	BBB+ to BBB	0.19	0.21	<0.1	<0.1	0	0	0.00
0.25 to <0.50	BBB to BBB-	0.34	0.38	<0.1	<0.1	0	0	0.00
0.50 to <0.75	BBB- to BB+	0.67	0.69	<0.1	<0.1	1	0	1.20
0.75 to <2.50	BB+ to BB-	1.23	1.53	<0.1	<0.1	1	0	3.12
2.50 to <10.00	BB- to B-	3.17	4.10	<0.1	<0.1	0	0	8.21
10.00 to <100.00	B- to CCC-	15.64	17.95	<0.1	<0.1	1	0	1.11
100.00 (Default)	CCC- to D	100.00	100.00	<0.1	<0.1	2	2	0.00
Sub-total	N/M	30.49	9.23	0.2	0.2	5	2	1.45
Specialized lending								
0.00 to <0.15	AAA to BBB+	0.00	0.00	0	0	0	0	0.00
0.15 to <0.25	BBB+ to BBB	0.00	0.00	0	0	0	0	0.00
0.25 to <0.50	BBB to BBB-	0.00	0.00	0	0	0	0	0.00
0.50 to <0.75	BBB- to BB+	0.00	0.00	0	0	0	0	0.00
0.75 to <2.50	BB+ to BB-	0.00	0.00	0	0	0	0	0.00
2.50 to <10.00	BB- to B-	0.00	0.00	0	0	0	0	0.00
10.00 to <100.00	B- to CCC-	0.00	0.00	0	0	0	0	0.00
100.00 (Default)	CCC- to D	0.00	0.00	0	0	0	0	0.00
Sub-total	N/M	0.00	0.00	0	0	0	0	0.00
Other								
0.00 to <0.15	AAA to BBB+	0.10	0.10	6.7	5.7	4	0	0.30
0.15 to <0.25	BBB+ to BBB	0.19	0.21	1.9	1.9	7	1	0.33
0.25 to <0.50	BBB to BBB-	0.35	0.38	2.4	2.0	8	1	0.19
0.50 to <0.75	BBB- to BB+	0.58	0.69	1.4	1.6	3	0	0.08
0.75 to <2.50	BB+ to BB-	1.09	1.36	0.6	0.7	4	0	0.66
2.50 to <10.00	BB- to B-	3.77	4.74	0.1	0.1	0	0	1.89
10.00 to <100.00	B- to CCC-	13.08	18.18	0.1	0.4	1	0	1.27
100.00 (Default)	CCC- to D	100.00	100.00	0.1	0.1	22	5	0.00
Sub-total	N/M	1.65	1.85	13.4	12.6	49	7	0.26

								Dec 31, 2019
a/b	c	d	e	f		g	h	i
				Number of obligors				
Exposure class/ PD Range	External rating equivalent	Weighted average PD (in %)	Arithmetic average PD by obligors (in %)	End of previous year (in 1,000s)	End of the year (in 1,000s)	Defaulted obligors in the year	of which new obligors in the year	Average historical annual default rate (in %)
Central governments and central banks								
0.00 to <0.15	AAA to BBB+	0.00	0.00	<0.1	<0.1	0	0	0.00
0.15 to <0.25	BBB+ to BBB	0.00	0.00	0	0	0	0	0.00
0.25 to <0.50	BBB to BBB-	0.00	0.00	0	0	0	0	0.00
0.50 to <0.75	BBB- to BB+	0.00	0.00	0	0	0	0	0.00
0.75 to <2.50	BB+ to BB-	0.00	0.00	0	0	0	0	0.00
2.50 to <10.00	BB- to B-	0.00	0.00	0	0	0	0	0.00
10.00 to <100.00	B- to CCC-	0.00	0.00	0	0	0	0	0.00
100.00 (Default)	CCC- to D	0.00	0.00	0	0	0	0	0.00
Sub-total	N/M	**0.00**	**0.00**	**<0.1**	**<0.1**	**0**	**0**	**0.00**
Institutions								
0.00 to <0.15	AAA to BBB+	0.08	0.07	<0.1	<0.1	0	0	0.00
0.15 to <0.25	BBB+ to BBB	0.21	0.19	<0.1	<0.1	0	0	0.00
0.25 to <0.50	BBB to BBB-	0.38	0.38	<0.1	0	0	0	0.00
0.50 to <0.75	BBB- to BB+	0.69	0.69	<0.1	<0.1	0	0	0.00
0.75 to <2.50	BB+ to BB-	0.00	0.00	0	0	0	0	0.00
2.50 to <10.00	BB- to B-	0.00	0.00	0	0	0	0	0.00
10.00 to <100.00	B- to CCC-	20.00	20.00	<0.1	0	0	0	0.00
100.00 (Default)	CCC- to D	0.00	0.00	0	0	0	0	0.00
Sub-total	N/M	**19.13**	**1.53**	**<0.1**	**<0.1**	**0**	**0**	**0.00**
Corporates								
0.00 to <0.15	AAA to BBB+	0.09	0.05	4.3	6.7	12	1	0.33
0.15 to <0.25	BBB+ to BBB	0.20	0.21	2.1	2.0	8	2	0.25
0.25 to <0.50	BBB to BBB-	0.33	0.37	2.7	2.5	8	1	0.13
0.50 to <0.75	BBB- to BB+	0.61	0.68	1.2	1.5	3	2	0.09
0.75 to <2.50	BB+ to BB-	1.25	1.24	0.7	0.6	10	4	0.45
2.50 to <10.00	BB- to B-	4.88	5.21	0.1	0.1	3	2	2.41
10.00 to <100.00	B- to CCC-	16.62	17.36	0.1	0.1	1	0	0.92
100.00 (Default)	CCC- to D	100.00	100.00	0.1	0.1	0	0	0.00
Sub-total	N/M	**1.81**	**1.37**	**11.2**	**13.5**	**45**	**12**	**0.22**
of which:								
SMEs								
0.00 to <0.15	AAA to BBB+	0.00	0.00	0	<0.1	0	0	0.00
0.15 to <0.25	BBB+ to BBB	0.21	0.21	0.1	<0.1	0	0	0.00
0.25 to <0.50	BBB to BBB-	0.38	0.38	<0.1	<0.1	0	0	0.38
0.50 to <0.75	BBB- to BB+	0.69	0.69	<0.1	<0.1	0	0	0.43
0.75 to <2.50	BB+ to BB-	1.26	1.40	<0.1	<0.1	1	0	2.32
2.50 to <10.00	BB- to B-	3.85	4.65	<0.1	<0.1	1	0	8.57
10.00 to <100.00	B- to CCC-	19.82	18.97	<0.1	<0.1	0	0	0.87
100.00 (Default)	CCC- to D	100.00	100.00	<0.1	<0.1	0	0	0.00
Sub-total	N/M	**5.39**	**7.63**	**0.2**	**0.2**	**2**	**0**	**1.01**
Specialized lending								
0.00 to <0.15	AAA to BBB+	0.00	0.00	0	0	0	0	0.00
0.15 to <0.25	BBB+ to BBB	0.00	0.00	0	0	0	0	0.00
0.25 to <0.50	BBB to BBB-	0.00	0.00	0	0	0	0	0.00
0.50 to <0.75	BBB- to BB+	0.00	0.00	0	0	0	0	0.00
0.75 to <2.50	BB+ to BB-	0.00	0.00	0	0	0	0	0.00
2.50 to <10.00	BB- to B-	0.00	0.00	0	0	0	0	0.00
10.00 to <100.00	B- to CCC-	0.00	0.00	0	0	0	0	0.00
100.00 (Default)	CCC- to D	0.00	0.00	0	0	0	0	0.00
Sub-total	N/M	**0.00**	**0.00**	**0**	**0**	**0**	**0**	**0.00**
Other								
0.00 to <0.15	AAA to BBB+	0.09	0.05	4.3	6.7	12	1	0.33
0.15 to <0.25	BBB+ to BBB	0.20	0.21	2.0	1.9	8	2	0.26
0.25 to <0.50	BBB to BBB-	0.33	0.37	2.7	2.4	8	1	0.12
0.50 to <0.75	BBB- to BB+	0.61	0.68	1.2	1.4	3	2	0.08
0.75 to <2.50	BB+ to BB-	1.25	1.24	0.7	0.6	9	4	0.28
2.50 to <10.00	BB- to B-	4.88	5.23	0.1	0.1	3	2	1.30
10.00 to <100.00	B- to CCC-	16.61	17.34	0.1	0.1	1	0	0.81
100.00 (Default)	CCC- to D	100.00	100.00	0.1	0.1	0	0	0.00
Sub-total	N/M	**1.79**	**1.27**	**11.1**	**13.4**	**44**	**12**	**0.19**

Comparison of expected loss estimates with actual losses

In addition to the model validation results above, the comparison of regulatory expected loss (“EL”) estimates with actual losses recorded also provides some insight into the predictive power of our parameter estimations and, therefore, EL calculations.

The EL used in this comparison is the forecast credit loss from counterparty defaults of our exposures over a one year period and is computed as the product of PD, LGD and EAD for performing exposures as of December 31 of the preceding year. The actual loss measure is defined by us as new provisions on newly impaired exposures recorded in our financial statements through profit and loss during the respective reported years.

While we believe that this approach provides some insight, the comparison has limitations as the two measures are not directly comparable. In particular, the parameter LGD underlying the EL calculation represents the loss expectation until finalization of the workout period while the actual loss as defined above represents the accounting information recorded for one particular financial year. Furthermore, EL is a measure of expected credit losses for a snapshot of our credit exposure at a certain balance sheet date while the actual loss is recorded for a fluctuating credit portfolio over the course of a financial year, i.e., including losses in relation to new loans entered into during the year.

According to the methodology described above, the following table provides a comparison of EL estimates for loans, commitments and contingent liabilities as of year-end 2019 through 2015, with actual losses recorded for the financial years 2020 through 2016, by regulatory exposure class for advanced IRBA exposures.

Comparison of expected loss estimates for loans, commitments and contingent liabilities with actual losses recorded by regulatory exposure class for advanced IRBA exposures

	Dec 31, 2019	2020	Dec 31, 2018	2019	Dec 31, 2017	2018	Dec 31, 2016	2017	Dec 31, 2015	2016
in € m.	Expected loss	Actual loss	Expected loss[1]	Actual loss	Expected loss	Actual loss	Expected loss	Actual loss	Expected loss	Actual loss
Central governments and central banks	23	9	27	0	22	0	3	4	2	3
Institutions	17	1	17	0	13	0	16	0	12	0
Corporates	583	1,170	572	488	526	493	512	198	369	697
Retail exposures secured by real estate property	273	141	269	118	282	143	285	98	305	177
Qualifying revolving retail exposures	32	21	31	21	34	26	14	15	13	4
Other retail exposures	435	586	414	546	383	403	405	349	339	704
Total expected loss and actual loss in the advanced IRBA	**1,363**	**1,927**	1,331	1,173	1,260	1,065	1,236	665	1,041	1,584

[1] Expected loss numbers have been restated for Dec 31, 2017

In 2020, the actual loss exceeded the expected loss largely driven by corporate exposures reflecting the impact of the COVID-19 pandemic.

The actual loss in 2019 was lower than the expected loss mainly driven by Corporates exposures.

In 2018 the actual loss was lower than the expected loss mainly driven by Retail exposures.

Actual loss in 2017 was lower than expected, driven by Corporates as well as Retail exposures, mainly reflecting the strong reduction in actual loss compared to prior year in the respective exposure classes, as further discussed below.

The actual loss in 2016 exceeded the expected loss by € 543 million or 52 % mainly driven by exposures in Corporates as well as in Other Retail, where we faced higher than expected increases in actual loss, as discussed below.

The following table provides a year-to-year comparison of the actual loss by regulatory exposure class.

Year-to-year comparison of the actual loss by IRBA exposure class

in € m.	2020	2019	2018	2017	2016
Central governments and central banks	9	0	0	4	3
Institutions	1	0	0	0	0
Corporates	1,170	488	493	198	697
Retail exposures secured by real estate property	141	118	143	98	177
Qualifying revolving retail exposures	21	21	26	15	4
Other retail exposures	586	546	403	349	704
Total actual loss by IRBA in the advanced IRBA	**1,927**	1,173	1,065	665	1,584

Actual loss increased by € 754 million or 64 % in fiscal year 2020, mainly relating to corporate exposures and reflecting the impact of the COVID-19 pandemic.

The increase in actual loss in fiscal year 2019 was driven by Other retail exposures, largely reflecting higher charges in PCB International compared to prior year.

The increase in actual loss in fiscal year 2018 was driven by Corporates within CIB.

The strong reduction in actual loss in fiscal year 2017 was driven by both, CIB and PCB. The decline in CIB resulted from lower actual losses amongst others against shipping companies, while the reduction in PCB was mainly caused by our retail portfolios in Italy and Spain.

In 2016 the actual loss increased by € 684 million or 76 % driven by our corporate and other retail portfolios. The increase in corporates was caused by higher actual losses for shipping- and metals & mining companies recorded in CIB, while the increase in other retail was caused by higher charges for our retail portfolios in Italy and Spain among others related to the sale of non-performing loans.

Article 452 (j) CRR - IRB exposure by country where Deutsche Bank operates

Advanced IRBA

The table below shows our Advanced IRBA exposure for credit risk distributed based on the corresponding exposure classes for each relevant geographical location. As geographical location we show countries where the Group maintains a branch or subsidiary. Exposure which does not meet these criteria is shown in “Other”, which also comprises exposure to international organizations. Exposures are assigned to the specific geographical location based on the country of domicile of the respective counterparty. The EAD net is presented in conjunction with exposures-weighted average LGD and PD in percentage. It excludes the following exposure classes: securitization positions in the regulatory banking book, specific equity positions and non-credit obligation assets.

EAD net, average LGD and average PD of Advanced IRBA credit exposures by geographical location

									Dec 31, 2020
in € m. (unless stated otherwise)	Central govern-ments and central banks	Institutions	Corporates	Retail secured by real estate SME	Retail secured by real estate non-SME	Retail qualifying revolving	Retail other SME	Retail other non-SME	Total
Argentina									
EAD net	22	1	99	0	1	1	1	2	127
Average LGD in %	50.00	12.30	43.05	N/M	16.74	43.56	42.69	28.24	38.26
Average PD in %	13.00	12.86	31.05	N/M	0.62	0.49	0.25	0.90	38.07
Australia									
EAD net	1,254	469	2,736	1	6	1	1	1	4,469
Average LGD in %	39.14	41.35	21.57	24.94	18.51	43.78	42.49	21.98	28.58
Average PD in %	0.01	0.04	30.75	0.14	2.22	1.75	0.81	3.79	18.84
Austria									
EAD net	70	22	650	4	38	7	3	9	804
Average LGD in %	50.00	48.10	29.03	8.43	15.34	56.18	41.19	32.80	30.98
Average PD in %	0.00	0.14	0.58	1.91	1.51	1.41	0.71	9.72	0.67
Belgium									
EAD net	536	859	1,578	1	27	4	4	7	3,015
Average LGD in %	50.41	41.25	29.39	11.99	17.16	54.82	45.95	30.91	36.45
Average PD in %	0.00	0.04	10.24	0.86	4.32	1.44	0.42	4.43	5.42
Brazil									
EAD net	111	352	725	0	3	1	1	1	1,195
Average LGD in %	50.00	28.09	35.08	N/M	14.76	37.06	35.95	40.09	34.35
Average PD in %	0.64	0.75	5.26	N/M	1.08	1.25	0.20	13.89	3.49
Canada									
EAD net	175	909	1,517	0	4	1	2	1	2,608
Average LGD in %	34.68	29.14	41.82	N/M	21.41	43.00	35.42	41.34	36.88
Average PD in %	0.04	0.04	0.76	N/M	1.68	0.38	0.39	4.06	0.46
Chile									
EAD net	0	0	179	0	2	0	1	1	183
Average LGD in %	N/M	50.00	38.70	N/M	42.35	40.53	41.97	10.41	38.59
Average PD in %	N/M	0.03	2.74	N/M	0.25	1.87	0.48	1.13	2.69
China									
EAD net	2,145	2,047	4,327	0	33	2	2	2	8,559
Average LGD in %	50.00	39.60	52.30	N/M	18.23	40.79	39.90	37.63	48.55
Average PD in %	0.00	0.10	4.30	N/M	0.53	1.23	0.64	2.00	2.20
Colombia									
EAD net	0	0	163	0	1	0	1	2	167
Average LGD in %	N/M	N/M	32.76	20.25	13.93	38.74	42.49	48.35	32.84
Average PD in %	N/M	N/M	5.77	0.23	0.91	4.19	0.31	2.93	5.66
Czech Republic									
EAD net	0	17	63	0	5	1	2	3	91
Average LGD in %	N/M	38.62	47.31	N/M	19.01	57.47	40.44	53.85	44.40
Average PD in %	N/M	0.07	0.73	N/M	0.40	3.27	0.61	26.48	1.49
France									
EAD net	237	1,659	5,095	1	59	9	11	60	7,131
Average LGD in %	50.65	42.32	29.03	6.13	16.81	52.90	41.91	19.77	32.70
Average PD in %	0.00	0.06	1.90	0.44	2.55	0.99	0.50	5.58	1.44
Germany									
EAD net	8,596	957	44,735	8,458	153,662	11,252	3,051	21,662	252,373
Average LGD in %	79.00	33.73	34.97	12.12	16.45	59.26	36.00	43.92	26.26
Average PD in %	0.95	4.29	2.95	1.41	1.81	1.04	2.08	6.64	2.36
Greece									
EAD net	0	12	326	0	4	1	0	3	346
Average LGD in %	N/M	9.88	19.49	10.27	20.38	43.60	42.69	25.92	19.31
Average PD in %	N/M	13.00	27.36	0.39	0.62	2.29	0.33	7.55	26.31
Hong Kong									
EAD net	453	563	2,684	0	8	0	0	1	3,709
Average LGD in %	50.00	42.70	31.89	N/M	15.56	36.54	52.11	20.04	35.70
Average PD in %	0.00	0.06	5.44	N/M	0.86	0.39	0.65	1.08	3.95
Hungary									
EAD net	0	91	117	0	3	1	1	3	216
Average LGD in %	N/M	49.87	45.29	N/M	18.57	56.02	41.88	57.52	47.07
Average PD in %	N/M	0.15	0.19	N/M	3.79	8.64	0.68	34.38	0.69
India									
EAD net	3,185	448	5,774	0	18	3	2	46	9,476
Average LGD in %	49.96	25.98	34.72	N/M	28.64	37.91	42.24	48.12	39.48
Average PD in %	0.23	0.58	15.82	N/M	1.16	3.23	0.88	1.89	9.76
Indonesia									
EAD net	733	0	981	0	1	0	0	1	1,716

									Dec 31, 2020
in € m. (unless stated otherwise)	Central govern-ments and central banks	Institutions	Corporates	Retail secured by real estate SME	Retail secured by real estate non-SME	Retail qualifying revolving	Retail other SME	Retail other non-SME	Total
Average LGD in %	50.00	N/M	38.22	N/M	8.35	39.25	42.69	51.14	43.24
Average PD in %	0.23	N/M	3.08	N/M	18.04	1.63	0.36	11.29	1.88
Ireland									
EAD net	132	85	5,613	0	18	0	1	182	6,030
Average LGD in %	50.00	29.78	43.69	N/M	17.06	40.58	39.15	63.84	44.16
Average PD in %	0.00	0.36	34.54	N/M	7.42	2.13	0.67	99.43	35.17
Israel									
EAD net	0	0	121	0	11	0	1	0	134
Average LGD in %	N/M	N/M	35.95	26.57	24.04	35.29	42.61	52.83	35.02
Average PD in %	N/M	N/M	1.84	0.14	4.20	0.86	0.69	14.51	2.06
Italy (incl. San Marino)									
EAD net	509	259	7,602	150	6,292	46	1,274	7,717	23,849
Average LGD in %	50.43	16.77	39.44	37.94	12.99	67.98	59.33	58.53	39.73
Average PD in %	0.23	2.47	5.94	33.23	4.70	6.02	9.43	10.72	7.37
Japan									
EAD net	8,332	157	1,629	0	5	1	0	0	10,125
Average LGD in %	50.03	26.10	26.86	N/M	12.75	40.07	36.21	45.39	45.91
Average PD in %	0.00	0.05	2.80	N/M	0.30	0.48	0.47	7.13	0.45
Jersey									
EAD net	0	0	1,203	0	0	0	0	0	1,203
Average LGD in %	N/M	N/M	26.66	N/M	13.30	N/M	N/M	37.21	26.65
Average PD in %	N/M	N/M	7.51	N/M	0.09	N/M	N/M	0.06	7.51
Luxembourg									
EAD net	0	323	8,322	8	52	1	0	264	8,970
Average LGD in %	N/M	46.14	18.58	13.55	22.24	50.71	33.60	49.60	20.51
Average PD in %	N/M	0.05	2.76	0.54	3.66	0.83	0.38	0.12	2.59
Malaysia									
EAD net	960	0	483	0	2	0	0	0	1,445
Average LGD in %	50.00	N/M	51.30	N/M	16.43	44.09	41.32	25.74	50.39
Average PD in %	0.07	N/M	0.41	N/M	0.50	0.29	0.78	2.19	0.18
Mauritius									
EAD net	0	0	245	0	1	0	0	0	246
Average LGD in %	N/M	N/M	18.25	N/M	29.23	41.24	N/M	41.46	18.31
Average PD in %	N/M	N/M	9.62	N/M	0.42	1.13	N/M	3.01	9.58
Mexico									
EAD net	91	107	630	0	5	1	1	3	837
Average LGD in %	50.00	56.81	41.97	N/M	12.56	35.29	41.50	15.29	44.47
Average PD in %	0.14	0.12	4.04	N/M	0.79	3.66	0.31	1.41	3.08
Netherlands									
EAD net	1,423	348	10,867	2	86	4	5	7	12,742
Average LGD in %	50.12	18.34	27.80	14.85	15.90	51.08	41.09	38.34	29.97
Average PD in %	0.04	0.51	3.79	0.54	2.48	1.78	0.69	6.74	3.27
Pakistan									
EAD net	44	0	47	0	4	1	0	4	100
Average LGD in %	50.00	N/M	24.27	N/M	21.37	37.37	42.69	48.17	36.67
Average PD in %	7.95	N/M	10.36	N/M	0.45	2.72	0.38	1.59	8.51
Philippines									
EAD net	164	0	506	0	0	0	0	0	671
Average LGD in %	50.00	N/M	40.17	N/M	15.32	50.98	44.74	63.86	42.57
Average PD in %	0.14	N/M	0.24	N/M	0.35	1.36	0.53	36.97	0.23
Poland									
EAD net	0	1	614	1	1,956	2	7	20	2,602
Average LGD in %	N/M	39.50	40.14	27.42	28.07	56.84	39.68	60.66	31.23
Average PD in %	N/M	0.14	1.81	0.22	4.20	10.84	0.65	32.28	3.84
Portugal									
EAD net	0	7	401	0	5	1	1	4	419
Average LGD in %	N/M	28.49	21.16	25.29	23.34	51.49	41.62	41.87	21.62
Average PD in %	N/M	5.70	0.54	0.14	3.03	1.57	0.60	2.83	0.68
Romania									
EAD net	2	44	10	0	1	0	2	3	63
Average LGD in %	15.03	48.15	47.27	N/M	11.56	51.07	42.44	55.56	46.48
Average PD in %	77.86	0.93	0.74	N/M	1.16	10.58	0.58	40.97	5.71
Russian Federation									
EAD net	610	0	397	0	23	1	2	8	1,041
Average LGD in %	50.00	N/M	45.51	N/M	20.45	35.02	42.66	16.85	47.35
Average PD in %	0.23	N/M	0.70	N/M	4.18	1.67	0.47	1.07	0.50
Saudi Arabia									

Dec 31, 2020

in € m. (unless stated otherwise)	Central govern-ments and central banks	Institutions	Corporates	Retail secured by real estate SME	Retail secured by real estate non-SME	Retail qualifying revolving	Retail other SME	Retail other non-SME	Total
EAD net	58	825	653	0	2	0	0	2	1,541
Average LGD in %	50.00	31.44	31.72	N/M	22.19	38.37	42.69	50.08	32.27
Average PD in %	0.07	0.09	4.82	N/M	32.45	2.85	0.55	0.41	2.14
Singapore									
EAD net	2,739	187	5,177	0	12	1	0	2	8,119
Average LGD in %	50.00	29.93	20.81	N/M	15.64	40.17	41.54	21.48	30.86
Average PD in %	0.00	0.04	3.01	N/M	1.05	0.22	0.50	1.27	1.92
South Africa									
EAD net	115	114	54	0	4	1	1	2	290
Average LGD in %	50.00	54.68	39.58	20.52	18.59	36.52	42.64	46.55	49.38
Average PD in %	0.64	0.64	2.32	0.23	2.92	1.94	1.02	0.46	0.99
South Korea									
EAD net	2,387	1	1,252	0	2	0	1	0	3,644
Average LGD in %	52.22	50.00	38.16	N/M	18.64	44.45	42.64	47.46	47.37
Average PD in %	0.00	0.07	1.35	N/M	0.64	1.37	0.75	4.10	0.46
Spain									
EAD net	1,435	246	8,591	79	7,006	4	487	2,042	19,890
Average LGD in %	57.61	39.81	37.25	11.35	11.11	51.95	66.88	60.64	32.65
Average PD in %	0.34	0.14	27.78	11.56	3.44	2.00	18.38	21.85	16.03
Sri Lanka									
EAD net	89	0	127	0	0	0	0	0	216
Average LGD in %	50.00	N/M	44.33	N/M	N/M	45.24	N/M	48.17	46.66
Average PD in %	7.95	N/M	1.33	N/M	N/M	3.24	N/M	2.43	4.05
Sweden									
EAD net	25	144	1,345	0	22	1	2	1	1,541
Average LGD in %	50.00	34.17	26.00	N/M	18.78	50.96	41.92	50.67	27.11
Average PD in %	0.00	0.07	1.45	N/M	1.98	0.28	0.46	9.49	1.31
Switzerland									
EAD net	3,606	353	10,046	4	180	14	5	25	14,233
Average LGD in %	49.99	35.50	25.12	8.60	14.82	50.17	37.92	27.06	31.58
Average PD in %	0.00	0.08	8.76	1.11	2.48	0.79	0.76	7.78	6.23
Taiwan									
EAD net	377	0	385	0	1	0	0	8	772
Average LGD in %	50.00	N/M	23.48	7.37	22.61	48.26	42.69	49.69	36.72
Average PD in %	0.00	N/M	0.26	0.14	0.88	0.27	0.89	0.16	0.13
Thailand									
EAD net	574	0	753	0	1	1	0	1	1,330
Average LGD in %	50.00	N/M	41.91	N/M	24.67	53.28	42.69	29.77	45.38
Average PD in %	0.09	N/M	0.51	N/M	0.35	0.99	0.37	5.08	0.33
Turkey									
EAD net	179	1,602	369	0	4	1	1	4	2,160
Average LGD in %	50.00	8.45	47.76	N/M	18.73	39.99	41.67	43.90	18.74
Average PD in %	1.07	2.42	9.29	N/M	2.33	1.50	11.04	6.57	3.49
Ukraine									
EAD net	233	0	30	0	4	0	0	2	269
Average LGD in %	50.00	N/M	45.40	N/M	13.77	36.53	42.69	63.19	49.05
Average PD in %	7.95	N/M	14.38	N/M	0.62	2.37	0.23	0.00	8.51
United Arab Emirates									
EAD net	161	0	1,257	2	12	1	1	4	1,437
Average LGD in %	50.00	N/M	27.99	9.43	19.80	40.35	36.91	22.20	30.35
Average PD in %	0.00	N/M	0.60	0.37	3.38	0.73	0.52	3.66	0.56
United Kingdom									
EAD net	474	2,477	8,825	1	80	4	8	78	11,946
Average LGD in %	50.00	79.63	29.99	11.22	16.36	41.73	39.13	24.21	40.95
Average PD in %	0.00	6.14	10.14	0.51	4.40	1.24	0.49	72.87	9.27
United States of America									
EAD net	73,530	5,984	70,010	1	55	5	17	193	149,796
Average LGD in %	49.99	37.68	18.69	8.90	26.08	47.45	40.81	48.75	34.86
Average PD in %	0.00	26.82	6.52	0.72	2.76	0.55	0.40	0.39	4.12
Vietnam									
EAD net	92	0	427	0	2	0	0	1	521
Average LGD in %	50.00	N/M	41.70	N/M	25.90	40.95	42.69	41.60	43.11
Average PD in %	0.64	N/M	1.08	N/M	3.91	1.87	1.23	1.77	1.01
Other									
EAD net	1,552	460	16,142	1	156	13	15	52	18,390
Average LGD in %	46.94	31.48	16.49	23.51	17.21	41.01	43.47	42.55	18.21

									Dec 31, 2020
in € m. (unless stated otherwise)	Central govern-ments and central banks	Institutions	Corporates	Retail secured by real estate SME	Retail secured by real estate non-SME	Retail qualifying revolving	Retail other SME	Retail other non-SME	Total
Average PD in %	3.87	2.83	4.39	0.67	1.89	2.85	3.28	4.36	4.31
of which:									
International Organizations									
EAD net	858	0	1	0	0	0	0	0	859
Average LGD in %	50.53	77.00	50.13	N/M	N/M	N/M	N/M	N/M	50.53
Average PD in %	0.01	0.03	1.07	N/M	N/M	N/M	N/M	N/M	0.01
Total	117,409	22,131	235,884	8,715	169,879	11,390	4,916	32,433	602,757

[1] Includes exposures subject to deferred tax assets that rely on future profitability and arise from temporary differences which are subject to the threshold exemptions as outlined in Article 48 CRR.

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in € m. (unless stated otherwise)	Central govern-ments and central banks	Institutions	Corporates	Retail secured by real estate SME	Retail secured by real estate non-SME	Retail qualifying revolving	Retail other SME	Retail other non-SME	Total
Argentina									
EAD net	23	4	208	0	1	2[2]	1	4	244
Average LGD in %	50.00	14.21	42.59	N/M	18.10	46.37	44.05	26.36	42.88
Average PD in %	0.08	0.09	0.26	N/M	0.16	0.00	0.24	0.01	0.24
Australia									
EAD net	619	589	2,055	1	7	1	1	2	3,276
Average LGD in %	34.36	45.50	17.64	25.87	18.42	27.15	42.69	17.62	26.07
Average PD in %	0.02	0.27	13.67	0.14	2.05	0.45	0.84	1.59	8.73
Austria									
EAD net	51	99	725	4	41	7	4	14	945
Average LGD in %	49.96	19.51	35.89	12.70	15.09	11.84	41.94	22.22	69.65
Average PD in %	0.00	0.08	1.52	1.24	1.09	0.68	0.51	5.50	6.55
Belgium									
EAD net	807	991	1,578	0	31	4	4	7	3,421
Average LGD in %	51.03	42.02	30.71	14.11	18.28	13.94	42.72	31.42	65.42
Average PD in %	0.00	0.05	10.18	0.27	4.76	0.99	0.38	7.00	7.78
Brazil									
EAD net	192	583	678	0	3	1	1	2	1,460
Average LGD in %	50.00	27.36	46.34	N/M	23.35	28.20	42.54	48.39	39.24
Average PD in %	0.64	0.93	5.13	N/M	1.36	0.82	0.47	2.74	2.96
Canada									
EAD net	17	1,227	1,531	0	4	1	3	1	2,783
Average LGD in %	30.00	27.77	33.95	N/M	23.67	24.72	42.60	37.15	31.41
Average PD in %	0.04	0.04	2.42	N/M	0.82	1.05	2.08	5.86	1.41
Chile									
EAD net	0	0	364	0	0	0	1	1	367
Average LGD in %	N/M	50.00	42.77	N/M	12.42	30.45	47.90	11.71	42.82
Average PD in %	N/M	0.00	0.01	N/M	0.42	0.35	0.38	0.05	0.02
China									
EAD net	2,165	1,739	4,484	0	24	2	3	2	8,418
Average LGD in %	50.19	30.09	51.50	N/M	21.45	27.42	42.75	41.45	46.70
Average PD in %	0.00	0.15	0.60	N/M	0.58	1.04	0.47	1.53	0.37
Colombia									
EAD net	0	0	93	0	1	0	1	2	97
Average LGD in %	N/M	N/M	35.49	26.57	11.50	31.93	42.37	48.22	35.46
Average PD in %	N/M	N/M	0.07	0.00	0.01	0.21	6.25	0.02	0.15
Czech Republic									
EAD net	0	22	69	0	5	1	2	3	103
Average LGD in %	N/M	39.62	47.42	N/M	19.55	12.23	42.69	53.79	70.31
Average PD in %	N/M	0.07	0.43	N/M	0.57	2.79	0.53	24.39	7.99
France									
EAD net	344	1,329	4,913	1	59	10	18	77	6,749
Average LGD in %	52.13	37.00	31.93	6.35	15.72	15.55	43.04	16.43	69.38
Average PD in %	0.00	0.06	1.32	0.43	3.10	0.76	0.41	4.52	9.07
Germany									
EAD net	6,483	1,393	42,441	8,543	143,286	11,608	2,924	21,457	238,135
Average LGD in %	85.30	27.29	34.81	11.74	15.14	12.22	34.92	43.24	99.94
Average PD in %	1.25	0.20	2.68	1.53	1.46	0.95	2.39	6.25	9.10
Greece									
EAD net	0	3	376	0	3	1	0	3	386
Average LGD in %	N/M	38.14	10.75	16.67	19.74	23.64	N/M	24.33	11.33
Average PD in %	N/M	13.00	39.88	0.70	0.43	1.73	N/M	6.23	39.10
Hong Kong									
EAD net	450	547	5,146	0	13	0	0	1	6,158
Average LGD in %	50.00	41.27	19.21	3.80	17.11	31.88	41.83	26.33	23.42
Average PD in %	0.00	0.06	4.24	0.39	0.43	0.42	43.05	3.96	3.55
Hungary									
EAD net	235	2	123	0	3	1	1	3	369
Average LGD in %	50.00	45.06	44.54	N/M	16.79	15.13	42.68	53.94	49.01
Average PD in %	0.14	0.39	0.18	N/M	1.79	6.35	0.71	23.87	0.83
India									
EAD net	3,036	981	6,446	0	7	2	2	33	10,508
Average LGD in %	49.91	35.66	35.50	N/M	25.73	35.97	42.43	48.07	39.73
Average PD in %	0.23	0.63	4.91	N/M	1.50	2.87	0.52	1.70	3.15
Indonesia									
EAD net	631	0	1,317	0	1	0	2	1	1,952
Average LGD in %	50.00	N/M	37.00	N/M	8.66	30.92	42.69	42.16	41.19

									Dec 31, 2019
in € m. (unless stated otherwise)	Central governments and central banks	Institutions	Corporates	Retail secured by real estate SME	Retail secured by real estate non-SME	Retail qualifying revolving	Retail other SME	Retail other non-SME	Total
Average PD in %	0.23	N/M	3.32	N/M	5.52	2.27	0.23	49.80	2.35
Ireland									
EAD net	0	128	6,229	0	22	0	1	209	6,590
Average LGD in %	N/M	20.99	43.82	N/M	18.96	26.51	42.43	95.93	49.88
Average PD in %	N/M	34.42	33.46	N/M	6.23	1.37	5.37	99.41	36.71
Israel									
EAD net	0	0	125	0	12	0	1	0	138
Average LGD in %	N/M	N/M	32.41	26.57	24.40	27.86	42.68	46.54	33.94
Average PD in %	N/M	N/M	1.19	0.14	4.48	1.66	0.94	4.74	1.80
Italy (incl. San Marino)									
EAD net	1,312	104	7,894	176	7,016	55	1,277	7,374	25,208
Average LGD in %	50.21	37.63	38.54	31.86	13.17	67.00	61.68	58.73	49.87
Average PD in %	0.14	1.43	6.79	32.41	4.64	5.39	10.22	10.02	10.64
Japan									
EAD net	8,760	259	1,131	0	5	1	1	0	10,156
Average LGD in %	50.04	48.63	18.73	N/M	13.33	24.40	42.69	43.82	46.50
Average PD in %	0.00	0.05	3.02	N/M	0.44	0.19	0.42	2.31	0.34
Jersey									
EAD net	0	0	1,089	0	0	0	0	0	1,089
Average LGD in %	N/M	N/M	23.88	N/M	13.30	N/M	N/M	38.84	23.88
Average PD in %	N/M	N/M	2.76	N/M	0.09	N/M	N/M	1.65	2.76
Luxembourg									
EAD net	0	211	6,907	9	41	1	0	332	7,501
Average LGD in %	N/M	46.61	18.97	24.45	19.81	17.44	36.13	49.61	55.24
Average PD in %	N/M	0.15	4.47	0.51	2.27	0.73	0.44	0.36	6.22
Malaysia									
EAD net	689	0	800	0	2	0	0	0	1,491
Average LGD in %	50.00	N/M	47.97	N/M	16.04	24.35	42.69	25.35	48.96
Average PD in %	0.07	N/M	0.22	N/M	0.53	0.25	0.65	2.75	0.22
Mauritius									
EAD net	0	0	210	0	0	0	0	0	210
Average LGD in %	N/M	N/M	16.99	N/M	17.52	34.84	N/M	48.37	17.00
Average PD in %	N/M	N/M	13.36	N/M	0.65	6.18	N/M	0.96	13.33
Mexico									
EAD net	138	95	670	0	2	1	1	5	911
Average LGD in %	50.00	36.35	41.67	N/M	15.21	29.31	42.69	18.12	42.25
Average PD in %	0.09	0.15	1.24	N/M	2.21	0.63	0.36	1.06	0.96
Netherlands									
EAD net	26	380	11,042	2	86	4	8	8	11,555
Average LGD in %	58.82	23.22	28.22	8.84	15.65	18.20	42.76	35.41	48.23
Average PD in %	0.00	0.26	4.30	0.49	2.12	1.42	0.60	8.17	6.81
Pakistan									
EAD net	41	0	117	0	1	0	0	3	162
Average LGD in %	50.00	N/M	31.26	N/M	17.00	37.17	42.69	48.06	36.18
Average PD in %	7.95	N/M	4.45	N/M	1.63	3.04	0.38	1.53	5.26
Philippines									
EAD net	100	0	536	0	0	0	0	0	637
Average LGD in %	50.00	N/M	39.35	N/M	16.40	17.44	46.05	54.17	41.07
Average PD in %	0.14	N/M	0.30	N/M	0.88	1.33	0.43	45.16	0.33
Poland									
EAD net	2,100	1	608	1	2,179	2	7	19	4,919
Average LGD in %	50.00	37.15	38.26	25.61	27.20	15.02	44.24	60.57	42.45
Average PD in %	0.05	0.12	1.97	0.74	3.03	7.64	1.09	30.54	2.84
Portugal									
EAD net	0	18	470	0	5	1	2	4	500
Average LGD in %	0.13	20.74	22.34	25.47	21.66	17.52	43.04	42.47	88.34
Average PD in %	0.64	7.43	0.30	0.23	4.68	1.89	0.55	3.49	19.24
Romania									
EAD net	2	46	10	0	1	0	1	3	64
Average LGD in %	5.00	47.26	49.41	N/M	13.42	25.50	53.14	53.13	49.37
Average PD in %	100.00	0.69	0.42	N/M	0.20	7.84	3.75	33.54	7.59
Russian Federation									
EAD net	742	0	565	0	23	1	3	7	1,341
Average LGD in %	50.00	N/M	47.08	N/M	23.00	32.78	42.76	16.57	48.29
Average PD in %	0.23	N/M	0.62	N/M	4.73	1.36	0.40	1.62	0.48
Saudi Arabia									
EAD net	516	372	802	0	2	0	0	2	1,695

									Dec 31, 2019
in € m. (unless stated otherwise)	Central govern-ments and central banks	Institutions	Corporates	Retail secured by real estate SME	Retail secured by real estate non-SME	Retail qualifying revolving	Retail other SME	Retail other non-SME	Total
Average LGD in %	45.42	27.49	22.81	N/M	20.85	29.38	42.69	49.64	30.80
Average PD in %	0.05	0.10	8.37	N/M	0.92	3.36	0.57	0.67	4.00
Singapore									
EAD net	2,625	196	6,433	0	13	1	0	2	9,271
Average LGD in %	50.00	37.09	15.26	N/M	16.78	24.89	42.62	12.17	25.58
Average PD in %	0.00	0.04	1.14	N/M	0.64	0.25	0.44	1.64	0.80
South Africa									
EAD net	147	106	335	0	4	1	1	2	595
Average LGD in %	50.00	59.17	11.03	27.06	18.78	25.67	42.64	46.69	29.84
Average PD in %	0.39	0.39	0.86	0.39	3.05	2.43	0.46	1.29	0.76
South Korea									
EAD net	2,271	1	1,933	0	2	0	1	0	4,209
Average LGD in %	49.93	50.00	41.56	N/M	19.53	27.31	42.69	47.13	46.10
Average PD in %	0.00	0.07	0.35	N/M	2.91	0.79	1.04	2.14	0.19
Spain									
EAD net	958	351	9,789	95	6,935	5	1,463	1,978	21,575
Average LGD in %	50.48	28.95	40.03	12.76	11.36	30.58	66.57	61.66	39.71
Average PD in %	0.56	0.12	28.17	10.81	3.38	2.85	7.19	22.99	19.85
Sri Lanka									
EAD net	94	0	115	0	0	0	0	0	209
Average LGD in %	50.00	N/M	42.66	N/M	N/M	23.31	N/M	47.74	45.97
Average PD in %	4.82	N/M	1.62	N/M	N/M	0.66	N/M	1.09	3.06
Sweden									
EAD net	0	596	1,230	0	20	1	4	2	1,854
Average LGD in %	N/M	31.76	27.07	N/M	21.15	16.11	42.70	47.80	62.31
Average PD in %	N/M	0.06	1.80	N/M	1.23	0.34	0.34	7.99	5.63
Switzerland									
EAD net	3,860	441	10,204	5	184	14	11	26	14,744
Average LGD in %	49.99	28.58	26.48	9.02	15.28	18.26	41.45	26.99	59.22
Average PD in %	0.00	0.06	7.49	1.18	2.24	0.64	0.42	7.11	9.48
Taiwan									
EAD net	569	0	465	0	1	0	0	9	1,044
Average LGD in %	50.00	N/M	18.67	7.37	21.52	23.59	42.69	49.68	36.02
Average PD in %	0.00	N/M	0.20	0.64	1.19	0.63	0.56	0.38	0.09
Thailand									
EAD net	662	0	1,123	0	1	1	0	1	1,788
Average LGD in %	50.00	N/M	39.58	N/M	22.21	15.63	42.69	25.57	43.46
Average PD in %	0.09	N/M	0.36	N/M	0.32	0.61	0.45	2.68	0.27
Turkey									
EAD net	125	1,471	525	0	3	1	1	3	2,129
Average LGD in %	49.99	10.89	50.22	N/M	20.43	28.31	42.78	41.97	23.05
Average PD in %	0.64	2.20	3.40	N/M	2.39	1.69	0.42	9.66	2.46
Ukraine									
EAD net	144	0	49	0	4	0	0	1	198
Average LGD in %	50.00	N/M	21.62	N/M	11.64	35.63	42.69	46.13	42.19
Average PD in %	7.95	N/M	69.66	N/M	1.37	2.30	0.23	0.00	23.15
United Arab Emirates									
EAD net	131	0	1,669	2	11	1	1	4	1,819
Average LGD in %	50.00	N/M	20.83	11.51	19.67	29.54	42.69	27.24	23.08
Average PD in %	0.00	N/M	0.23	0.37	4.49	0.44	0.56	3.95	0.36
United Kingdom									
EAD net	426	3,565	9,564	1	120	4	11	351	14,041
Average LGD in %	50.04	78.97	29.79	11.29	21.22	24.90	41.57	17.57	46.55
Average PD in %	0.00	0.19	11.14	0.71	3.48	1.22	0.99	94.48	11.72
United States of America									
EAD net	81,054	4,505	78,316	1	55	5	57	183	164,177
Average LGD in %	50.01	52.59	19.74	19.77	24.96	23.60	45.82	49.26	36.12
Average PD in %	0.00	0.26	3.11	0.64	2.55	0.68	0.28	1.16	1.60
Vietnam									
EAD net	64	0	310	0	1	0	0	0	376
Average LGD in %	50.00	N/M	44.28	N/M	27.79	34.27	42.69	37.95	45.22
Average PD in %	0.64	N/M	1.46	N/M	0.86	2.62	1.09	1.25	1.32
Other									
EAD net	2,759	538	19,169	0	65	12	20	86	22,649
Average LGD in %	49.63	40.70	16.02	N/M	19.32	29.41	43.34	21.41	24.33
Average PD in %	1.19	3.75	4.14	N/M	5.26	2.71	4.69	2.19	4.99

									Dec 31, 2019
in € m. (unless stated otherwise)	Central govern-ments and central banks	Institutions	Corporates	Retail secured by real estate SME	Retail secured by real estate non-SME	Retail qualifying revolving	Retail other SME	Retail other non-SME	Total
of which:									
International Organizations									
EAD net	413	0	1	0	0	0	0	0	414
Average LGD in %	54.82	N/M	49.63	N/M	N/M	N/M	N/M	N/M	54.81
Average PD in %	0.01	N/M	1.06	N/M	N/M	N/M	N/M	N/M	0.01
Total	125,369	22,894	252,982	8,841	160,308	11,759	5,841	32,224	620,217

[1] Includes exposures subject to deferred tax assets that rely on future profitability and arise from temporary differences which are subject to the threshold exemptions as outlined in Article 48 CRR.
[2] Previous year number has been restated

Foundation IRBA

The table below shows our Foundation IRBA exposure for credit risk distributed based on the corresponding exposure classes for each relevant geographical location. As geographical location we show countries where the Bank maintains a branch or subsidiary. Exposure which does not meet these criteria is shown in “Other”, which also comprises exposure to international organizations. Exposures are assigned to the specific geographical location based on the country of domicile of the respective counterparty. The EAD net is presented in conjunction with exposures-weighted average PD in percentage.

EAD net and average PD of Foundation IRBA credit exposures by geographical location

				Dec 31, 2020				Dec 31, 2019
in € m. (unless stated otherwise)	Central governments and central banks	Institutions	Corporates	Total	Central governments and central banks	Institutions	Corporates	Total
Argentina[1]								
EAD net	0	0	4	4	N/M	N/M	N/M	N/M
Average PD in %	N/M	N/M	0.10	0.10	N/M	N/M	N/M	N/M
Australia								
EAD net	0	0	1	1	0	0	5	5
Average PD in %	N/M	N/M	0.00	0.00	N/M	N/M	0.36	0.36
Austria								
EAD net	0	0	183	183	0	0	381	381
Average PD in %	N/M	0.00	0.00	0.00	N/M	0.09	0.27	0.27
Belgium								
EAD net	0	0	706	706	0	0	115	115
Average PD in %	N/M	N/M	0.00	0.00	N/M	N/M	0.27	0.27
Brazil								
EAD net	0	0	53	53	0	0	23	23
Average PD in %	N/M	N/M	0.03	0.03	N/M	N/M	1.97	1.97
Canada								
EAD net	0	0	1	1	0	0	16	16
Average PD in %	N/M	N/M	0.00	0.00	N/M	N/M	0.10	0.10
Chile[1]								
EAD net	0	0	1	1	N/M	N/M	N/M	N/M
Average PD in %	N/M	N/M	0.12	0.12	N/M	N/M	N/M	N/M
China								
EAD net	0	0	53	53	0	0	38	38
Average PD in %	N/M	N/M	0.00	0.00	N/M	N/M	0.46	0.46
Colombia[1]								
EAD net	0	0	7	7	N/M	N/M	N/M	N/M
Average PD in %	N/M	N/M	0.16	0.16	N/M	N/M	N/M	N/M
Czech Republic								
EAD net	0	0	30	30	0	0	84	84
Average PD in %	N/M	N/M	0.00	0.00	N/M	N/M	0.33	0.33
Denmark								
EAD net	0	0	63	63	0	0	0	0
Average PD in %	N/M	0.20	0.00	0.00	N/M	N/M	N/M	N/M
Finland								
EAD net	0	0	4	4	0	0	0	0
Average PD in %	N/M	N/M	0.01	0.01	N/M	N/M	N/M	N/M
France								
EAD net	0	0	268	268	0	0	367	367
Average PD in %	N/M	N/M	0.00	0.00	N/M	N/M	0.23	0.23
Germany								
EAD net	24	3	4,923	4,951	0	0	6,983	6,983
Average PD in %	0.00	0.09	0.03	0.03	0.00	0.07	1.73	1.73
Gibraltar								
EAD net	0	0	0	0	0	0	0	0
Average PD in %	N/M	N/M	N/M	N/M	N/M	N/M	N/M	N/M
Greece								
EAD net	0	0	0	0	0	0	0	0
Average PD in %	N/M	N/M	0.00	0.00	N/M	N/M	N/M	N/M
Hong Kong								
EAD net	0	0	1	1	0	0	2	2
Average PD in %	N/M	N/M	0.00	0.00	N/M	N/M	0.37	0.37
Hungary								
EAD net	0	0	53	53	0	0	72	72
Average PD in %	N/M	N/M	0.00	0.00	N/M	N/M	0.16	0.16
India								
EAD net	0	0	13	13	0	0	48	48
Average PD in %	N/M	N/M	0.05	0.05	N/M	N/M	1.88	1.88
Indonesia								
EAD net	0	0	2	2	0	0	3	3
Average PD in %	N/M	N/M	0.36	0.36	N/M	N/M	0.08	0.08
Ireland								
EAD net	0	0	8	8	0	0	22	22
Average PD in %	N/M	N/M	0.01	0.01	N/M	N/M	0.24	0.24
Israel								
EAD net	0	0	5	5	0	0	7	7
Average PD in %	N/M	N/M	0.29	0.29	N/M	N/M	0.11	0.11

in € m. (unless stated otherwise)	Dec 31, 2020				Dec 31, 2019			
	Central governments and central banks	Institutions	Corporates	Total	Central governments and central banks	Institutions	Corporates	Total
Italy								
EAD net	0	0	63	63	0	0	199	199
Average PD in %	N/M	N/M	0.00	0.00	N/M	N/M	0.40	0.40
Japan								
EAD net	0	0	1	1	0	0	11	11
Average PD in %	N/M	N/M	0.00	0.00	N/M	N/M	0.17	0.17
Jersey								
EAD net	0	0	0	0	0	0	0	0
Average PD in %	N/M	N/M	N/M	N/M	N/M	N/M	N/M	N/M
Luxembourg								
EAD net	0	0	54	54	0	0	57	57
Average PD in %	N/M	N/M	0.00	0.00	N/M	N/M	0.06	0.06
Malaysia								
EAD net	0	0	1	1	0	0	4	4
Average PD in %	N/M	N/M	0.00	0.00	N/M	N/M	0.21	0.21
Malta[1]								
EAD net	N/M	N/M	N/M	N/M	0	0	0	0
Average PD in %	N/M	N/M	N/M	N/M	N/M	N/M	N/M	N/M
Mauritius								
EAD net	0	0	0	0	0	0	0	0
Average PD in %	N/M	N/M	N/M	N/M	N/M	N/M	0.20	0.20
Mexico								
EAD net	0	0	5	5	0	0	9	9
Average PD in %	N/M	N/M	0.00	0.00	N/M	N/M	0.55	0.55
Netherlands								
EAD net	0	0	163	163	0	0	233	233
Average PD in %	N/M	N/M	0.00	0.00	N/M	N/M	0.17	0.17
New Zealand[1]								
EAD net	N/M	N/M	N/M	N/M	0	0	0	0
Average PD in %	N/M	N/M	N/M	N/M	N/M	N/M	N/M	N/M
Nigeria								
EAD net	0	0	0	0	0	0	0	0
Average PD in %	N/M	N/M	N/M	N/M	N/M	N/M	N/M	N/M
Norway								
EAD net	0	0	4	4	0	0	0	0
Average PD in %	N/M	N/M	0.00	0.00	N/M	N/M	N/M	N/M
Pakistan								
EAD net	0	0	0	0	0	0	0	0
Average PD in %	N/M	N/M	N/M	N/M	N/M	N/M	0.06	0.06
Peru								
EAD net	0	0	4	4	0	0	0	0
Average PD in %	N/M	N/M	0.13	0.13	N/M	N/M	N/M	N/M
Philippines								
EAD net	0	0	0	0	0	0	0	0
Average PD in %	N/M	N/M	N/M	N/M	N/M	N/M	0.03	0.03
Poland								
EAD net	0	0	57	57	0	0	123	123
Average PD in %	N/M	N/M	0.05	0.05	N/M	N/M	0.21	0.21
Portugal								
EAD net	0	0	9	9	0	0	24	24
Average PD in %	N/M	N/M	0.00	0.00	N/M	N/M	0.19	0.19
Qatar								
EAD net	0	0	0	0	0	0	0	0
Average PD in %	N/M	N/M	N/M	N/M	N/M	N/M	N/M	N/M
Romania								
EAD net	0	0	9	9	0	0	36	36
Average PD in %	N/M	N/M	0.00	0.00	N/M	N/M	0.13	0.13
Russian Federation								
EAD net	0	0	34	34	0	0	79	79
Average PD in %	N/M	N/M	0.06	0.06	N/M	N/M	1.10	1.10
Saudi Arabia								
EAD net	0	0	0	0	0	0	5	5
Average PD in %	N/M	N/M	0.00	0.00	N/M	N/M	0.08	0.08
Singapore								
EAD net	0	0	0	0	0	0	3	3
Average PD in %	N/M	N/M	0.00	0.00	N/M	N/M	3.44	3.44
Slovakia								
EAD net	0	0	28	28	0	0	0	0

				Dec 31, 2020				Dec 31, 2019
in € m. (unless stated otherwise)	Central governments and central banks	Institutions	Corporates	Total	Central governments and central banks	Institutions	Corporates	Total
Average PD in %	N/M	N/M	0.00	0.00	N/M	N/M	N/M	N/M
South Africa								
EAD net	0	0	5	5	0	0	1	1
Average PD in %	N/M	N/M	0.08	0.08	N/M	N/M	7.09	7.09
South Korea								
EAD net	0	0	2	2	0	0	3	3
Average PD in %	N/M	N/M	0.00	0.00	N/M	N/M	0.26	0.26
Spain								
EAD net	0	0	122	122	0	0	121	121
Average PD in %	N/M	N/M	0.20	0.20	N/M	N/M	0.29	0.29
Sri-Lanka								
EAD net	0	0	0	0	0	0	0	0
Average PD in %	N/M	N/M	N/M	N/M	N/M	N/M	N/M	N/M
Sweden								
EAD net	0	0	16	16	0	0	35	35
Average PD in %	N/M	N/M	0.00	0.00	N/M	N/M	0.13	0.13
Switzerland								
EAD net	0	0	128	128	0	0	284	284
Average PD in %	N/M	0.00	0.00	0.00	N/M	N/M	0.17	0.17
Taiwan								
EAD net	0	0	1	1	0	0	4	4
Average PD in %	N/M	N/M	0.00	0.00	N/M	N/M	0.28	0.28
Thailand								
EAD net	0	0	2	2	0	0	8	8
Average PD in %	N/M	N/M	0.00	0.00	N/M	N/M	0.14	0.14
Turkey								
EAD net	0	0	7	7	0	0	11	11
Average PD in %	N/M	N/M	0.00	0.00	N/M	N/M	0.15	0.15
Ukraine								
EAD net	0	0	3	3	0	0	8	8
Average PD in %	N/M	N/M	0.08	0.08	N/M	N/M	0.92	0.92
United Arab Emirates								
EAD net	0	0	3	3	0	0	7	7
Average PD in %	N/M	N/M	0.22	0.22	N/M	N/M	6.87	6.87
United Kingdom								
EAD net	0	0	77	77	0	0	199	199
Average PD in %	N/M	N/M	0.00	0.00	N/M	N/M	0.47	0.47
United States of America								
EAD net	0	0	89	89	0	0	250	250
Average PD in %	N/M	N/M	0.03	0.03	N/M	N/M	1.50	1.50
Uruguay								
EAD net	0	0	0	0	0	0	0	0
Average PD in %	N/M	N/M	0.00	0.00	N/M	N/M	N/M	N/M
Vietnam								
EAD net	0	0	0	0	0	0	6	6
Average PD in %	N/M	N/M	0.01	0.01	N/M	N/M	2.30	2.30
Other								
EAD	0	0	148	148	0	0	210	210
Average PD in %	N/M	20.00	4.70	4.70	N/M	N/M	1.98	1.98
of which:								
International Organizations								
EAD	0	0	0	0	0	0	0	0
Average PD in %	N/M	N/M	N/M	N/M	N/M	N/M	N/M	N/M
Total	**24**	**3**	**7,315**	**7,343**	0	0	10,115	10,115

[1] Due to materiality thresholds, this table includes these countries either for the first or last time. Therefore only one period is being reported.

Counterparty credit risk (CCR)

Article 439 (a) CRR - Internal capital and credit limits for counterparty credit risk exposures

Counterparty credit exposure (CCR) arises from our business activities in derivatives and securities financing transactions (SFT), it is the risk that the counterparty to a transaction may default before completing the satisfactory settlement of the transaction. We calculate the exposure to CCR using the internal model method (IMM) and the mark-to-market method (CEM) for derivatives and the financial collateral comprehensive method for SFT respectively.

As the replacement values of derivatives portfolios fluctuate with movements in market rates and with changes in the transactions in the portfolios, we estimate the potential future replacement costs of the portfolios over their lifetimes or, in case of collateralized portfolios, over appropriate unwind periods. We measure the potential future exposure against a limit set for the counterparty for this type of transactions.

Limits for CCR exposures are established on the basis of the principles for assigning credit limits as described in the sections "Credit risk framework" and “Measuring credit risk” in the Annual Report 2020 on pages 70. For the purpose of limit setting, CCR exposures are also considered in the context of the overall credit exposure to the obligor and the group of borrowers under the one obligor principle.

We supplement the potential future exposure analysis with stress tests to estimate the immediate impact of extreme market events on our exposures (such as event risk in our Emerging Markets portfolio).

For the majority of derivative counterparty exposures as well as for SFT, we (without former Postbank, now part of DB AG) make use of the internal model method in accordance with Article 283 et seq. CRR. In this respect SFT encompass repurchase transactions, securities or commodities lending and borrowing as well as margin lending transactions (including prime brokerage). By applying this approach, we build our EAD calculations on a Monte Carlo simulation of the transactions’ future market values. Within this simulation process, interest and foreign exchange rates, credit spreads, equity and commodity prices are modeled by stochastic processes and each derivative and securities financing transaction is revalued at each point of a pre-defined time grid. As a result of this process, a distribution of future market values for each transaction at each time grid point is generated. From these distributions, by considering the appropriate netting and collateral agreements, we derive the exposure measures potential future exposure (PFE), average expected exposure (AEE), expected positive exposure (EPE) and effective expected positive exposure (EEPE).

The potential future exposure measure which we use is generally given by a time profile of simulated positive market values of each counterparty’s derivatives portfolio, for which netting and collateralization are considered. For limit monitoring we employ the 95th quantile of the resulting distribution of market values, internally referred to as potential future exposure. The average exposure profiles generated by the same calculation process are used to derive the so-called average expected exposure measure, which we use to reflect expected future replacement costs within our credit risk economic capital, and the expected positive exposure measure driving our regulatory capital requirements. While AEE and EPE are generally calculated with respect to a time horizon of one year, the PFE is measured over the entire lifetime of a transaction or netting set for uncollateralized portfolios and over an appropriate unwind period for collateralized portfolios, respectively. We also employ the aforementioned calculation process to derive stressed exposure results for input into our credit portfolio stress testing.

The PFE profile of each counterparty is compared daily to the PFE limit profile set by the respective credit officer. PFE limits are an integral part of the overall counterparty credit exposure management in line with other limit types. Breaches of PFE limits at any one profile time point are highlighted for action within our credit risk management process. The EPE is an input to the Pillar 1 capital requirement (Risk Weighted Assets), whereas AEE feeds as a loan equivalent into the Group’s credit portfolio model (Economic Capital, applied under Pillar 2) where it is combined with all other credit exposure to a counterparty.

For further details on our counterparty credit risk, please refer to the Annual Report 2020 under sections: “Netting and collateral arrangements for derivatives and securities financing transactions”, pages 90, “Derivatives - credit valuation adjustment”, and “Treatment of default situations under derivatives”, on pages 87 as well as “Credit exposure from derivatives”, on page 145.

Article 439 (b) CRR - Collateral and credit reserves for counterparty credit risk

For details regarding collateral and reserve for counterparty credit risk please refer to our Annual Report 2020 section "Managing and mitigation of credit risk" in the sub-section "Netting and collateral arrangements for derivatives and securities financing transactions", on page 90, "Derivatives – credit valuation adjustment", page 87 as well as "Credit exposure from derivatives", on page 145.

Article 439 (c) CRR - Management of wrong-way risk exposures

For information regarding the management of wrong-way risk exposures please refer to the Annual Report 2020, section "Mitigation of credit risk on counterparty level" on page 88, "Treatment of default situations under derivatives" on page 87 and "Country risk management" on page 92.

Article 439 (d) CRR - Collateral in the event of a rating downgrade

For details please refer to the Annual Report 2020, section "Managing and mitigation of credit risk" in the sub-section "Netting and collateral arrangements for derivatives and securities financing transactions" on page 90. Additionally please refer to our Annual Report 2020 to the section "Liquidity risk exposure", sub-section "Stress testing and scenario analysis" on page 158.

Article 439 (f) CRR - CCR exposures by model approach

The following table shows the methods used for calculating the regulatory requirements for CCR exposure including the main parameters for each method. Exposures relevant for credit valuation adjustment (CVA) charges and exposures cleared through a central counterparty (CCP) are presented separately in table EU CCR2 and EU CCR8, respectively. Deutsche Bank does not make use of the original exposure method or the standardized approach for derivatives nor the financial collateral simple method for SFTs. Under the mark-to-market method the positive market values before netting and collateral, the potential future exposure and the exposure at default for derivatives are shown, taking credit risk mitigation techniques into account. Under the internal model method (IMM) only the effective expected positive exposure (EEPE) and the exposure at default are presented. Given the nature of the internal model the simulation process of future market values across all asset classes also includes the impact from regulatory netting and collateralization.

EU CCR1 – Analysis of CCR exposure by approach

								Dec 31, 2020
		a	b	c	d	e	f	g
	in € m. (unless stated otherwise)	Notional	Replacement cost/ Current market value	Potential future credit exposure	EEPE	Multiplier	EAD post CRM	RWA
1	Mark-to-market	–	6,902	486	–	–	7,381	3,025
2	Original exposure	N/M	–	–	–	–	N/M	N/M
3	Standardized approach	–	N/M	–	–	N/M	N/M	N/M
4	IMM (for derivatives and SFTs)	–	–	–	63,125	1.25	75,750	18,920
	of which:	–	–	–				
5	Securities Financing Transactions	–	–	–	28,491	1.25	34,189	2,639
6	Derivatives & Long Settlement Transactions	–	–	–	34,634	1.25	41,561	16,280
7	from Contractual Cross Product Netting	–	–	–	0	0	0	0
8	Financial collateral simple method (for SFTs)	–	–	–	–	–	0	0
9	Financial collateral comprehensive method (for SFTs)	–	–	–	–	–	12,774	1,618
10	VaR for SFTs	–	–	–	–	–	0	0
11	Total	–	–	–	–	–	–	23,562

	in € m. (unless stated otherwise)	a Notional	b Replacement cost/ Current market value	c Potential future credit exposure	d EEPE	e Multiplier	f EAD post CRM	g RWA
								Jun 30, 2020
1	Mark-to-market	–	3,974	1,678	–	–	8,567	3,078
2	Original exposure	N/M	–	–	–	–	N/M	N/M
3	Standardized approach	–	N/M	–	–	N/M	N/M	N/M
4	IMM (for derivatives and SFTs)	–	–	–	60,043	1.25	72,051	17,663
	of which:	–	–	–				
5	Securities Financing Transactions	–	–	–	27,507	1.25	33,008	2,715
6	Derivatives & Long Settlement Transactions	–	–	–	32,536	1.25	39,043	14,949
7	from Contractual Cross Product Netting	–	–	–	0	0	0	0
8	Financial collateral simple method (for SFTs)	–	–	–	–	–	0	0
9	Financial collateral comprehensive method (for SFTs)	–	–	–	–	–	10,737	1,635
10	VaR for SFTs	–	–	–	–	–	0	0
11	Total	–	–	–	–	–	–	22,377

The table below EU CCR2 provides a breakdown of the credit valuation adjustment (CVA) RWA into advanced and standardized approaches. Furthermore the incremental contributions from the VaR and stressed VaR components are highlighted. We calculate the majority of the CVA based on our own internal model as approved by the competent supervisory authority, which is consistent with the movement in the advanced method, driving the reported CVA RWA of € 8.2 billion (98 %), whilst the standardized method covers only € 190 million (2 %) of the total CVA RWA. The stressed VaR component is the main driver of advanced CVA RWA, which results from the stressed period volatilities considered. The overall increase was primarily driven by model enhancements linked to the introduction of the Historical Simulation VaR in 2020, and increased volatility observed due to the COVID-19 market turbulence and additional hedging activity.

EU CCR2 – CVA capital charge

		Dec 31, 2020		Jun 30, 2020	
		a	b	a	b
	in € m.	Exposure value	RWA	Exposure value	RWA
1	Total portfolios subject to the Advanced Method	53,186	8,201	55,650	4,746
2	(i) VaR component (including the 3× multiplier)	–	2,727	–	1,606
3	(ii) Stressed VaR component (including the 3× multiplier)	–	5,474	–	3,140
4	All portfolios subject to the Standardized Method	1,289	190	1,170	489
EU4	Based on Original Exposure Method	0	0	0	0
5	Total subject to the CVA capital charge	**54,475**	**8,392**	56,821	5,235

The table below presents an overview of our exposures and capital requirements to central counterparties arising from transactions, margins and contributions to default funds. As of December 31, 2020 and June 30, 2020, we only report exposures to qualifying central counterparties (QCCP) as defined in Article 4 (88) CRR.

EU CCR8 – Exposures to CCPs

	in € m.	Dec 31, 2020 a EAD post CRM	Dec 31, 2020 b RWA	Jun 30, 2020 a EAD post CRM	Jun 30, 2020 b RWA
1	Exposures to QCCPs (total)	–	359	–	331
2	Exposures for trades at QCCPs (excluding initial margin and default fund contributions)	5,567	111	3,969	79
	of which:				
3	(i) OTC derivatives	1,241	25	2,343	47
4	(ii) Exchange-traded derivatives	2,443	49	1,019	20
5	(iii) Securities financing transactions	1,883	38	607	12
6	(iv) Netting sets where cross-product netting has been approved	0	0	0	0
7	Segregated initial margin	4,178	–	3,445	–
8	Non-segregated initial margin	3,155	63	4,312	86
9	Pre-funded default fund contributions	824	184	780	166
10	Alternative calculation of own funds requirements for exposures	–	0	–	0
11	Exposures to non-QCCPs (total)	–	0	–	0
12	Exposures for trades at non-QCCPs (excluding initial margin and default fund contributions)	0	0	0	0
	of which:				
13	(i) OTC derivatives	0	0	0	0
14	(ii) Exchange-traded derivatives	0	0	0	0
15	(iii) Securities financing transactions	0	0	0	0
16	(iv) Netting sets where cross-product netting has been approved	0	0	0	0
17	Segregated initial margin	0	–	0	–
18	Non-segregated initial margin	0	0	0	0
19	Prefunded default fund contributions	0	0	0	0
20	Unfunded default fund contributions	0	0	0	0

Article 444 (e) CRR - CCR exposures in the standardized approach

The following table provides the counterparty credit risk exposures in the standardized approach broken down by risk weights and regulatory exposure classes. “Unrated” includes all exposures for which a credit assessment by a nominated ECAI is not available and they therefore receive the standard risk weight according to their exposure classes as described in the CRR.

EU CCR3 – Standardized approach – CCR exposures by regulatory portfolio and risk

	in € m.	Dec 31, 2020 Risk Weight						
	Exposure classes	0%	2%	4%	10%	20%	50%	70%
1	Central governments or central banks	4,062	0	0	0	0	0	0
2	Regional governments or local authorities	214	0	0	0	0	0	0
3	Public sector entities	188	0	0	0	0	0	0
4	Multilateral development banks	825	0	0	0	0	0	0
5	International organizations	0	0	0	0	0	0	0
6	Institutions	54	8,771	24	0	37	9	0
7	Corporates	0	0	0	0	244	0	0
8	Retail	0	0	0	0	0	0	0
8a	Secured by mortgages on immovable property	0	0	0	0	0	0	0
8b	Exposures in default	0	0	0	0	0	0	0
8c	Items associated with particularly high risk	0	0	0	0	0	0	0
8d	Covered bonds	0	0	0	0	0	0	0
9	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	0	0
9a	Collective investments undertakings (CIU)	0	0	0	0	0	0	0
9b	Equity exposures	0	0	0	0	0	0	0
10	Other items	0	0	0	0	0	0	0
11	Total	5,344	8,771	24	0	281	9	0

Dec 31, 2020

	in € m. Exposure classes	Risk Weight 75%	100%	150%	Others	Total	Of which: unrated
1	Central governments or central banks	0	0	0	0	4,062	4,062
2	Regional governments or local authorities	0	0	0	0	214	214
3	Public sector entities	0	0	0	0	188	188
4	Multilateral development banks	0	0	0	0	825	825
5	International organizations	0	0	0	0	0	0
6	Institutions	0	12	0	0	8,907	8,849
7	Corporates	0	708	1	0	952	370
8	Retail	2	0	0	0	2	2
8a	Secured by mortgages on immovable property	0	0	0	0	0	0
8b	Exposures in default	0	0	0	0	0	0
8c	Items associated with particularly high risk	0	0	0	0	0	0
8d	Covered bonds	0	0	0	0	0	0
9	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	0
9a	Collective investments undertakings (CIU)	0	0	0	0	0	0
9b	Equity exposures	0	0	0	0	0	0
10	Other items	0	0	0	0	0	0
11	Total	2	720	1	0	15,151	14,512

Jun 30, 2020

	in € m. Exposure classes	Risk Weight 0%	2%	4%	10%	20%	50%	70%
1	Central governments or central banks	4,163	0	0	0	0	0	0
2	Regional governments or local authorities	854	0	0	0	0	0	0
3	Public sector entities	224	0	0	0	0	0	0
4	Multilateral development banks	754	0	0	0	0	0	0
5	International organizations	0	0	0	0	0	0	0
6	Institutions	0	7,856	0	0	90	8	0
7	Corporates	0	0	0	0	147	0	0
8	Retail	0	0	0	0	0	0	0
8a	Secured by mortgages on immovable property	0	0	0	0	0	0	0
8b	Exposures in default	0	0	0	0	0	0	0
8c	Items associated with particularly high risk	0	0	0	0	0	0	0
8d	Covered bonds	0	0	0	0	0	0	0
9	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	0	0
9a	Collective investments undertakings (CIU)	0	0	0	0	0	0	0
9b	Equity exposures	0	0	0	0	0	0	0
10	Other items	0	423	0	0	0	0	0
11	Total	5,995	8,279	0	0	237	8	0

Jun 30, 2020

	in € m. Exposure classes	Risk Weight 75%	100%	150%	Others	Total	Of which: unrated
1	Central governments or central banks	0	0	0	0	4,163	4,163
2	Regional governments or local authorities	0	0	0	0	854	854
3	Public sector entities	0	0	0	0	224	224
4	Multilateral development banks	0	0	0	0	754	754
5	International organizations	0	0	0	0	0	0
6	Institutions	0	11	0	0	7,964	7,952
7	Corporates	0	1,111	0	0	1,258	1,257
8	Retail	3	0	0	0	3	3
8a	Secured by mortgages on immovable property	0	0	0	0	0	0
8b	Exposures in default	0	0	0	0	0	0
8c	Items associated with particularly high risk	0	0	0	0	0	0
8d	Covered bonds	0	0	0	0	0	0
9	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	0
9a	Collective investments undertakings (CIU)	0	0	0	0	0	0
9b	Equity exposures	0	0	0	0	0	0
10	Other items	0	0	0	0	423	423
11	Total	3	1,122	0	0	15,644	15,631

Article 452 (e) CRR - CCR exposures within the advanced IRBA

In the following tables we show our advanced IRBA counterparty credit risk exposures, i.e. derivatives and securities financing transactions, distributed on our internal rating scale for exposure classes central governments and central banks, institutions as well as corporates and retail with their relevant subcategories. CVA charges or exposures cleared through a CCP are excluded.

We show the EAD after CRM and CCF ("EAD net"), where exposures covered by guarantees or credit derivatives are assigned to the protection seller. As a consequence the EAD net can be higher than the original balance sheet exposure.

The EAD net is presented in conjunction with exposure-weighted average PD, LGD, and maturity as well as the RWA, the average risk weight (RW) and the number of obligors. The effect of double default, as far as applicable to exposures outside of Postbank, is considered in the average RW. It implies that for a guaranteed exposure a loss only occurs if the primary obligor and the guarantor fail to meet their obligations at the same time. The tables provide the defaulted exposure separately, where we apply a LGD model already incorporating potential unexpected losses in the loss rate estimate as required by Article 181 (1)(h) CRR.

EU CCR4 – AIRB approach – CCR exposures by portfolio and PD scale

							Dec 31, 2020
in € m. (unless stated otherwise)	a	b	c	d	e	f	g
Exposure class/ PD scale	EAD net	Average PD (in %)	Number of obligors (in 1,000)	Average LGD (in %)	Average maturity (in years)	RWA	Average RW (in %)
Central governments and central banks							
0.00 to <0.15	8,089	0.01	0.1	46.76	1.0	281	3.48
0.15 to <0.25	426	0.23	<0.1	45.95	1.6	174	40.87
0.25 to <0.50	10	0.39	<0.1	30.00	5.0	6	63.31
0.50 to <0.75	52	0.64	<0.1	46.50	3.8	53	100.68
0.75 to <2.50	165	1.39	<0.1	40.61	4.3	188	114.05
2.50 to <10.00	727	2.92	<0.1	22.20	3.8	545	74.94
10.00 to <100.00	0	0	0	0	0	0	0
100.00 (Default)	0	0	0	0	0	0	0
Sub-total	9,468	0.27	0.1	44.71	1.3	1,247	13.17
Institutions							
0.00 to <0.15	17,335	0.05	0.4	33.91	1.0	1,951	11.26
0.15 to <0.25	438	0.23	0.1	36.23	1.8	227	51.83
0.25 to <0.50	312	0.39	<0.1	47.45	2.6	267	85.72
0.50 to <0.75	557	0.64	<0.1	39.53	2.2	500	89.75
0.75 to <2.50	516	1.60	<0.1	18.97	0.5	227	43.96
2.50 to <10.00	1,768	2.94	<0.1	4.09	0.9	385	21.77
10.00 to <100.00	12	13.44	<0.1	45.00	3.2	28	237.76
100.00 (Default)	0	0	0	0	0	0	0
Sub-total	20,939	0.37	0.6	31.43	1.1	3,586	17.12
Corporates							
0.00 to <0.15	39,197	0.05	7.9	35.47	1.5	5,559	14.18
0.15 to <0.25	2,941	0.23	0.8	38.85	3.1	1,467	49.88
0.25 to <0.50	2,572	0.39	0.8	46.06	2.2	1,743	67.74
0.50 to <0.75	2,658	0.64	0.8	42.44	1.9	2,029	76.34
0.75 to <2.50	3,811	1.36	1.1	33.99	2.4	3,137	82.30
2.50 to <10.00	6,654	4.53	0.5	13.22	2.0	2,993	44.98
10.00 to <100.00	264	19.41	0.1	48.82	1.0	709	268.51
100.00 (Default)	99	100.00	<0.1	20.70	2.4	75	76.11
Sub-total	58,197	0.95	12.1	33.82	1.7	17,711	30.43
of which:							
SMEs							
0.00 to <0.15	2,405	0.05	0.3	36.01	1.7	291	12.11
0.15 to <0.25	111	0.23	0.1	37.88	2.6	44	39.38
0.25 to <0.50	138	0.39	0.1	59.77	2.4	83	60.03
0.50 to <0.75	180	0.64	0.1	52.02	2.0	108	60.18
0.75 to <2.50	155	1.57	0.2	54.85	2.5	140	89.77
2.50 to <10.00	110	4.59	0.1	36.36	2.8	91	82.66
10.00 to <100.00	6	21.76	<0.1	47.04	4.1	11	175.91
100.00 (Default)	4	100.00	<0.1	34.09	1.5	3	73.82
Sub-total	3,109	0.50	0.9	39.03	1.8	769	24.75
Specialized Lending							
0.00 to <0.15	121	0.09	<0.1	56.16	3.7	48	39.93
0.15 to <0.25	56	0.23	<0.1	44.76	3.6	34	60.51
0.25 to <0.50	69	0.39	<0.1	43.12	4.2	56	80.66
0.50 to <0.75	37	0.64	<0.1	43.51	4.0	34	93.00
0.75 to <2.50	111	1.36	<0.1	43.03	4.0	132	118.65
2.50 to <10.00	412	3.39	<0.1	20.84	4.8	331	80.35
10.00 to <100.00	9	19.84	<0.1	50.68	2.5	23	256.75
100.00 (Default)	26	100.00	<0.1	27.50	4.8	11	40.97
Sub-total	842	5.27	0.2	33.78	4.3	670	79.58
Other							
0.00 to <0.15	36,672	0.05	7.6	35.37	1.4	5,219	14.23
0.15 to <0.25	2,774	0.23	0.7	38.77	3.1	1,389	50.08
0.25 to <0.50	2,365	0.39	0.7	45.34	2.2	1,604	67.82
0.50 to <0.75	2,441	0.64	0.7	41.72	1.9	1,887	77.28
0.75 to <2.50	3,544	1.36	0.9	32.79	2.3	2,865	80.83
2.50 to <10.00	6,132	4.61	0.3	12.29	1.8	2,571	41.93
10.00 to <100.00	249	19.34	0.1	48.79	0.9	674	271.19
100.00 (Default)	69	100.00	<0.1	17.40	1.5	62	89.67
Sub-total	54,247	0.91	11.0	33.53	1.7	16,272	30.00

							Dec 31, 2020
in € m. (unless stated otherwise)	a	b	c	d	e	f	g
Exposure class/ PD scale	EAD net	Average PD (in %)	Number of obligors (in 1,000)	Average LGD (in %)	Average maturity (in years)	RWA	Average RW (in %)
Retail							
0.00 to <0.15	10	0.07	0.1	57.65	1.8	1	11.36
0.15 to <0.25	5	0.23	<0.1	59.03	2.6	1	26.42
0.25 to <0.50	7	0.39	<0.1	71.41	3.6	3	40.59
0.50 to <0.75	12	0.64	0.1	74.19	3.5	7	58.01
0.75 to <2.50	20	1.25	0.1	76.15	1.9	16	81.19
2.50 to <10.00	8	4.82	<0.1	79.18	2.3	10	113.24
10.00 to <100.00	1	92.93	<0.1	81.58	1.1	0	12.06
100.00 (Default)	0	100.00	<0.1	15.05	2.7	0	98.07
Sub-total	63	2.62	0.4	71.46	2.5	38	60.48
of which:							
Secured by real estate property SMEs							
0.00 to <0.15	0	0	0	0	0	0	0
0.15 to <0.25	0	0	0	0	0	0	0
0.25 to <0.50	0	0	0	0	0	0	0
0.50 to <0.75	0	0	0	0	0	0	0
0.75 to <2.50	0	0	0	0	0	0	0
2.50 to <10.00	0	0	0	0	0	0	0
10.00 to <100.00	0	0	0	0	0	0	0
100.00 (Default)	0	0	0	0	0	0	0
Sub-total	0	0	0	0	0	0	0
Secured by real estate property non-SMEs							
0.00 to <0.15	0	0	0	0	0	0	0
0.15 to <0.25	0	0	0	0	0	0	0
0.25 to <0.50	0	0	0	0	0	0	0
0.50 to <0.75	0	0	0	0	0	0	0
0.75 to <2.50	0	0	0	0	0	0	0
2.50 to <10.00	0	0	0	0	0	0	0
10.00 to <100.00	0	0	0	0	0	0	0
100.00 (Default)	0	0	0	0	0	0	0
Sub-total	0	0	0	0	0	0	0
Qualifying Revolving							
0.00 to <0.15	0	0	0	0	0	0	0
0.15 to <0.25	0	0	0	0	0	0	0
0.25 to <0.50	0	0	0	0	0	0	0
0.50 to <0.75	0	0	0	0	0	0	0
0.75 to <2.50	0	0	0	0	0	0	0
2.50 to <10.00	0	0	0	0	0	0	0
10.00 to <100.00	0	0	0	0	0	0	0
100.00 (Default)	0	0	0	0	0	0	0
Sub-total	0	0	0	0	0	0	0
Other retail SMEs							
0.00 to <0.15	1	0.11	<0.1	76.69	1.2	0	16.62
0.15 to <0.25	1	0.23	<0.1	72.14	1.1	0	26.07
0.25 to <0.50	4	0.39	<0.1	77.12	1.8	1	38.84
0.50 to <0.75	5	0.64	<0.1	81.83	1.0	3	54.35
0.75 to <2.50	7	1.25	0.1	74.41	2.0	4	65.41
2.50 to <10.00	3	4.98	<0.1	79.29	1.5	3	94.25
10.00 to <100.00	1	92.09	<0.1	81.35	1.2	0	13.37
100.00 (Default)	0	100.00	<0.1	15.05	2.7	0	98.07
Sub-total	21	4.64	0.2	77.39	1.5	12	55.92
Other retail non-SMEs							
0.00 to <0.15	8	0.06	0.1	55.02	1.9	1	10.63
0.15 to <0.25	4	0.23	<0.1	56.17	3.0	1	26.49
0.25 to <0.50	3	0.39	<0.1	64.57	5.8	1	42.70
0.50 to <0.75	7	0.64	<0.1	69.26	5.0	4	60.37
0.75 to <2.50	13	1.25	0.1	77.05	1.9	12	89.40
2.50 to <10.00	6	4.74	<0.1	79.13	2.7	7	122.89
10.00 to <100.00	0	96.36	<0.1	82.50	1.1	0	6.77
100.00 (Default)	0	0	0	0	0	0	0
Sub-total	42	1.61	0.3	68.50	2.9	26	62.76
Total (all exposure classes)	88,667	0.74	13.2	34.45	1.5	22,582	25.47

							Jun 30, 2020
in € m. (unless stated otherwise)	a	b	c	d	e	f	g
Exposure class/ PD scale	EAD net	Average PD (in %)	Number of obligors (in 1,000)	Average LGD (in %)	Average maturity (in years)	RWA	Average RW (in %)
Central governments and central banks							
0.00 to <0.15	4,397	0.02	0.1	43.12	1.9	363	8.25
0.15 to <0.25	446	0.23	<0.1	41.49	1.8	156	34.93
0.25 to <0.50	14	0.39	<0.1	30.00	5.0	9	63.31
0.50 to <0.75	8	0.64	<0.1	30.00	4.9	6	75.70
0.75 to <2.50	127	1.28	<0.1	44.02	4.4	160	125.65
2.50 to <10.00	758	2.92	<0.1	50.00	2.9	520	68.55
10.00 to <100.00	0	0	0	0	0	0	0
100.00 (Default)	0	0	0	0	0	0	0
Sub-total	5,750	0.45	0.1	43.87	2.1	1,213	21.09
Institutions							
0.00 to <0.15	17,283	0.05	0.4	37.37	1.2	2,297	13.29
0.15 to <0.25	418	0.23	0.1	35.14	1.8	261	62.37
0.25 to <0.50	201	0.39	<0.1	48.18	1.9	131	65.42
0.50 to <0.75	481	0.64	<0.1	56.38	1.4	475	98.85
0.75 to <2.50	395	1.26	<0.1	43.03	1.4	406	102.73
2.50 to <10.00	271	3.34	<0.1	54.99	2.2	290	107.08
10.00 to <100.00	19	13.38	<0.1	50.13	2.7	48	257.69
100.00 (Default)	0	0	0	0	0	0	0
Sub-total	19,067	0.16	0.6	38.30	1.2	3,908	20.49
Corporates							
0.00 to <0.15	46,050	0.05	8.0	(9,275.89)	1.4	6,410	13.92
0.15 to <0.25	2,225	0.23	0.8	(7,578.72)	3.5	979	44.01
0.25 to <0.50	2,222	0.39	0.9	(9,063.07)	2.6	1,559	70.15
0.50 to <0.75	2,842	0.64	0.9	(9,099.02)	2.9	1,806	63.53
0.75 to <2.50	3,618	1.37	1.1	(6,162.74)	2.3	2,669	73.76
2.50 to <10.00	2,735	5.35	0.5	(7,082.23)	2.8	1,833	67.04
10.00 to <100.00	221	17.69	0.1	(8,254.17)	1.5	566	255.81
100.00 (Default)	94	100.00	<0.1	(7,462.09)	1.7	52	55.83
Sub-total	60,006	0.64	12.2	(7,335.75)	1.7	15,873	26.45
of which:							
SMEs							
0.00 to <0.15	928	0.06	0.3	43.47	4.0	253	27.24
0.15 to <0.25	98	0.23	0.1	30.27	3.4	21	21.96
0.25 to <0.50	74	0.40	0.1	52.59	2.8	46	61.42
0.50 to <0.75	137	0.65	0.1	47.83	0.6	67	48.97
0.75 to <2.50	197	1.65	0.1	30.66	2.0	97	49.58
2.50 to <10.00	61	5.54	0.1	50.40	3.0	72	117.18
10.00 to <100.00	7	17.60	<0.1	35.06	2.1	9	120.34
100.00 (Default)	1	100.00	<0.1	65.33	2.8	1	85.37
Sub-total	1,503	0.74	0.8	42.05	3.2	566	37.65
Specialized Lending							
0.00 to <0.15	115	0.09	<0.1	50.80	3.6	45	38.69
0.15 to <0.25	56	0.23	<0.1	47.01	3.9	38	67.30
0.25 to <0.50	80	0.39	<0.1	39.50	4.0	56	70.49
0.50 to <0.75	60	0.64	<0.1	45.63	4.0	59	98.96
0.75 to <2.50	121	1.32	<0.1	32.03	4.4	109	89.72
2.50 to <10.00	424	3.40	<0.1	22.89	4.7	372	87.81
10.00 to <100.00	12	18.62	<0.1	48.41	2.8	30	238.79
100.00 (Default)	11	100.00	<0.1	9.87	4.7	1	12.50
Sub-total	879	3.39	0.2	32.61	4.3	710	80.75
Other							
0.00 to <0.15	45,007	0.05	7.7	35.10	1.4	6,112	13.58
0.15 to <0.25	2,071	0.23	0.7	32.26	3.5	920	44.42
0.25 to <0.50	2,068	0.39	0.8	44.89	2.5	1,457	70.45
0.50 to <0.75	2,645	0.64	0.8	31.01	2.9	1,679	63.49
0.75 to <2.50	3,300	1.35	0.9	30.51	2.3	2,462	74.61
2.50 to <10.00	2,249	5.71	0.4	18.20	2.5	1,389	61.76
10.00 to <100.00	202	17.64	<0.1	47.70	1.4	528	261.75
100.00 (Default)	82	100.00	<0.1	18.09	1.3	50	61.01
Sub-total	57,624	0.59	11.3	34.26	1.7	14,597	25.33

							Jun 30, 2020
in € m. (unless stated otherwise)	a	b	c	d	e	f	g
Exposure class/ PD scale	EAD net	Average PD (in %)	Number of obligors (in 1,000)	Average LGD (in %)	Average maturity (in years)	RWA	Average RW (in %)
Retail							
0.00 to <0.15	5	0.07	0.2	(4,812.04)	2.8	0	9.42
0.15 to <0.25	5	0.23	<0.1	(6,814.59)	3.1	1	26.00
0.25 to <0.50	5	0.39	<0.1	(7,399.12)	7.7	2	41.34
0.50 to <0.75	6	0.64	0.1	(7,306.50)	5.5	3	55.67
0.75 to <2.50	17	1.30	0.1	(7,305.21)	2.4	13	78.23
2.50 to <10.00	9	4.35	0.1	(7,854.49)	1.6	10	112.90
10.00 to <100.00	2	34.43	<0.1	(8,083.75)	1.1	2	150.60
100.00 (Default)	0	100.00	<0.1	49.06	2.6	0	125.83
Sub-total	49	2.67	0.5	(7,286.23)	3.3	33	67.93
of which:							
Secured by real estate property SMEs							
0.00 to <0.15	0	0	0	0	0	0	0
0.15 to <0.25	0	0	0	0	0	0	0
0.25 to <0.50	0	0	0	0	0	0	0
0.50 to <0.75	0	0	0	0	0	0	0
0.75 to <2.50	0	0	0	0	0	0	0
2.50 to <10.00	0	0	0	0	0	0	0
10.00 to <100.00	0	0	0	0	0	0	0
100.00 (Default)	0	0	0	0	0	0	0
Sub-total	0	0	0	0	0	0	0
Secured by real estate property non-SMEs							
0.00 to <0.15	0	0	0	0	0	0	0
0.15 to <0.25	0	0	0	0	0	0	0
0.25 to <0.50	0	0	0	0	0	0	0
0.50 to <0.75	0	0	0	0	0	0	0
0.75 to <2.50	0	0	0	0	0	0	0
2.50 to <10.00	0	0	0	0	0	0	0
10.00 to <100.00	0	0	0	0	0	0	0
100.00 (Default)	0	0	0	0	0	0	0
Sub-total	0	0	0	0	0	0	0
Qualifying Revolving							
0.00 to <0.15	0	0	0	0	0	0	0
0.15 to <0.25	0	0	0	0	0	0	0
0.25 to <0.50	0	0	0	0	0	0	0
0.50 to <0.75	0	0	0	0	0	0	0
0.75 to <2.50	0	0	0	0	0	0	0
2.50 to <10.00	0	0	0	0	0	0	0
10.00 to <100.00	0	0	0	0	0	0	0
100.00 (Default)	0	0	0	0	0	0	0
Sub-total	0	0	0	0	0	0	0
Other retail SMEs							
0.00 to <0.15	0	0.08	<0.1	49.10	1.0	0	7.92
0.15 to <0.25	1	0.23	<0.1	72.29	1.5	0	26.49
0.25 to <0.50	1	0.39	<0.1	80.08	1.3	1	40.25
0.50 to <0.75	1	0.64	<0.1	76.73	1.4	1	51.00
0.75 to <2.50	6	1.32	0.1	76.31	2.0	4	68.56
2.50 to <10.00	3	3.90	<0.1	79.94	1.2	3	91.81
10.00 to <100.00	1	51.25	<0.1	82.50	1.1	1	98.14
100.00 (Default)	0	100.00	<0.1	49.06	2.6	0	125.83
Sub-total	13	4.84	0.2	77.27	1.6	9	67.99
Other retail non-SMEs							
0.00 to <0.15	5	0.07	0.2	49.35	2.9	0	9.45
0.15 to <0.25	4	0.23	<0.1	54.93	3.5	1	25.91
0.25 to <0.50	4	0.39	<0.1	63.13	10.2	2	41.75
0.50 to <0.75	5	0.64	<0.1	65.15	6.5	3	56.79
0.75 to <2.50	11	1.29	0.1	71.19	2.7	9	83.39
2.50 to <10.00	6	4.59	<0.1	80.54	1.8	7	124.34
10.00 to <100.00	1	21.37	<0.1	82.47	1.2	2	191.35
100.00 (Default)	0	0	0	0	0	0	0
Sub-total	36	1.85	0.4	66.45	4.0	24	67.90
Total (all exposure classes)	84,872	0.52	13.5	35.96	1.6	21,027	24.77

Article 452 (e) CRR - CCR exposures within the foundation IRBA

In the following tables we show our foundation IRBA counterparty credit risk exposures, i.e. derivatives and securities financing transactions, distributed on our internal rating scale for exposure classes central governments and central banks, institutions as well as corporates with their relevant subcategories. CVA charges or exposures cleared through a CCP are excluded.

We show the EAD after CRM (“EAD net”), where exposures covered by guarantees or credit derivatives are assigned to the protection seller. As a consequence the EAD net can be higher than the original balance sheet exposure.

The EAD net is presented in conjunction with exposures-weighted average PD, RWAs, the average risk weight (RW) and the number of obligors. In addition it provides the average LGD and average maturity, which is regulatory pre-defined in the foundation IRB. The tables provide the defaulted exposure separately.

EU CCR4 – FIRB approach – CCR exposures by portfolio and PD scale

in € m. (unless stated otherwise)							Dec 31, 2020
	a	b	c	d	e	f	g
Exposure class/ PD scale	EAD net	Average PD (in %)	Number of obligors (in 1,000)	Average LGD (in %)	Average maturity (in years)	RWA	Average RW (in %)
Central governments and central banks							
0.00 to <0.15	0	0	0	0	0	0	0
0.15 to <0.25	0	0	0	0	0	0	0
0.25 to <0.50	0	0	0	0	0	0	0
0.50 to <0.75	0	0	0	0	0	0	0
0.75 to <2.50	0	0	0	0	0	0	0
2.50 to <10.00	0	0	0	0	0	0	0
10.00 to <100.00	0	0	0	0	0	0	0
100.00 (Default)	0	0	0	0	0	0	0
Sub-total	0	0	0	0	0	0	0
Institutions							
0.00 to <0.15	0	0	0	0	0	0	0
0.15 to <0.25	0	0	0	0	0	0	0
0.25 to <0.50	0	0.43	<0.1	45.00	5.0	0	68.48
0.50 to <0.75	0	0	0	0	0	0	0
0.75 to <2.50	0	0	0	0	0	0	0
2.50 to <10.00	0	0	0	0	0	0	0
10.00 to <100.00	0	0	0	0	0	0	0
100.00 (Default)	0	0	0	0	0	0	0
Sub-total	0	0.43	<0.1	45.00	5.0	0	68.48
Corporates							
0.00 to <0.15	44	0.14	0.1	45.00	3.1	15	35.44
0.15 to <0.25	80	0.26	0.1	45.00	4.7	42	52.50
0.25 to <0.50	19	0.43	0.1	45.00	3.6	12	65.31
0.50 to <0.75	29	0.77	0.1	45.00	4.2	25	84.63
0.75 to <2.50	122	1.94	0.1	45.00	4.1	102	82.91
2.50 to <10.00	5	5.32	<0.1	45.00	2.2	6	124.91
10.00 to <100.00	0	18.97	<0.1	45.00	4.1	0	159.83
100.00 (Default)	6	100.00	<0.1	45.00	3.9	0	0
Sub-total	306	3.14	0.4	45.00	4.0	203	66.22
of which:							
SMEs							
0.00 to <0.15	7	0.14	<0.1	45.00	2.7	2	26.10
0.15 to <0.25	4	0.26	<0.1	45.00	2.9	1	36.13
0.25 to <0.50	3	0.43	<0.1	45.00	2.7	1	47.17
0.50 to <0.75	4	0.77	<0.1	45.00	1.5	3	60.03
0.75 to <2.50	3	1.38	<0.1	45.00	2.1	2	75.03
2.50 to <10.00	3	5.00	<0.1	45.00	1.1	3	100.31
10.00 to <100.00	0	19.31	<0.1	45.00	4.4	0	152.41
100.00 (Default)	1	100.00	<0.1	45.00	5.0	0	0
Sub-total	25	4.48	0.2	45.00	2.3	13	50.88
Specialized Lending							
0.00 to <0.15	0	0	0	0	0	0	0
0.15 to <0.25	0	0	0	0	0	0	0
0.25 to <0.50	0	0	0	0	0	0	0
0.50 to <0.75	0	0	0	0	0	0	0
0.75 to <2.50	101	2.06	0.1	45.00	4.6	79	78.42
2.50 to <10.00	0	0	0	0	0	0	0
10.00 to <100.00	0	0	0	0	0	0	0
100.00 (Default)	3	100.00	<0.1	45.00	5.0	0	0
Sub-total	104	5.11	0.1	45.00	4.6	79	75.98
Other							
0.00 to <0.15	37	0.14	0.1	45.00	3.1	14	37.22
0.15 to <0.25	77	0.26	<0.1	45.00	4.8	41	53.27
0.25 to <0.50	16	0.43	<0.1	45.00	3.8	11	68.48
0.50 to <0.75	25	0.77	<0.1	45.00	4.7	22	88.80
0.75 to <2.50	18	1.38	<0.1	45.00	1.7	20	109.00
2.50 to <10.00	2	5.85	<0.1	45.00	3.9	3	165.56
10.00 to <100.00	0	15.51	<0.1	45.00	1.2	0	235.90
100.00 (Default)	2	100.00	<0.1	45.00	2.0	0	0
Sub-total	177	1.78	0.2	45.00	4.0	111	62.63
Total	306	3.14	0.4	45.00	4.0	203	66.22

in € m. (unless stated otherwise)							Jun 30, 2020
	a	b	c	d	e	f	g
Exposure class/ PD scale	EAD net	Average PD (in %)	Number of obligors (in 1,000)	Average LGD (in %)	Average maturity (in years)	RWA	Average RW (in %)
Central governments and central banks							
0.00 to <0.15	0	0	0	0	0	0	0
0.15 to <0.25	0	0	0	0	0	0	0
0.25 to <0.50	0	0	0	0	0	0	0
0.50 to <0.75	0	0	0	0	0	0	0
0.75 to <2.50	0	0	0	0	0	0	0
2.50 to <10.00	0	0	0	0	0	0	0
10.00 to <100.00	0	0	0	0	0	0	0
100.00 (Default)	0	0	0	0	0	0	0
Sub-total	0	0	0	0	0	0	0
Institutions							
0.00 to <0.15	0	0	0	0	0	0	0
0.15 to <0.25	0	0	0	0	0	0	0
0.25 to <0.50	0	0	0	0	0	0	0
0.50 to <0.75	0	0	0	0	0	0	0
0.75 to <2.50	0	0	0	0	0	0	0
2.50 to <10.00	0	0	0	0	0	0	0
10.00 to <100.00	0	0	0	0	0	0	0
100.00 (Default)	0	0	0	0	0	0	0
Sub-total	0	0	0	0	0	0	0
Corporates							
0.00 to <0.15	32	0.13	0.1	45.00	3.9	11	35.04
0.15 to <0.25	80	0.23	0.1	45.00	4.6	40	49.70
0.25 to <0.50	43	0.38	0.1	45.00	4.5	28	64.55
0.50 to <0.75	8	0.69	0.1	45.00	3.3	6	78.85
0.75 to <2.50	114	2.01	0.1	45.00	4.4	88	77.06
2.50 to <10.00	1	5.04	<0.1	45.00	2.7	2	138.07
10.00 to <100.00	0	12.76	<0.1	45.00	4.4	0	183.83
100.00 (Default)	6	100.00	<0.1	45.00	3.8	0	0
Sub-total[1]	285	3.19	0.4	45.00	4.4	175	61.45
of which:							
SMEs							
0.00 to <0.15	1	0.14	<0.1	4,500.00	2.6	0	30.78
0.15 to <0.25	3	0.23	<0.1	4,500.00	3.4	1	38.59
0.25 to <0.50	2	0.38	<0.1	4,500.00	1.9	1	56.97
0.50 to <0.75	2	0.69	<0.1	4,500.00	2.6	2	66.29
0.75 to <2.50	3	1.27	<0.1	4,500.00	2.3	2	77.98
2.50 to <10.00	1	5.95	<0.1	4,500.00	1.2	1	132.71
10.00 to <100.00	0	12.76	<0.1	4,500.00	5.0	0	176.18
100.00 (Default)	0	0	0	0	0	0	0
Sub-total	13	1.06	0.1	4,500.00	2.6	8	61.88
Specialized Lending							
0.00 to <0.15	0	0	0	0	0	0	0
0.15 to <0.25	0	0	0	0	0	0	0
0.25 to <0.50	0	0	0	0	0	0	0
0.50 to <0.75	0	0	0	0	0	0	0
0.75 to <2.50	107	2.06	0.1	4,500.00	4.5	81	75.87
2.50 to <10.00	0	0	0	0	0	0	0
10.00 to <100.00	0	0	0	0	0	0	0
100.00 (Default)	3	100.00	<0.1	4,500.00	5.0	0	0
Sub-total[1]	110	5.13	0.1	4,500.00	4.5	81	73.49
Other							
0.00 to <0.15	30	0.13	0.1	45.00	3.9	11	35.24
0.15 to <0.25	77	0.23	0.1	45.00	4.7	39	50.17
0.25 to <0.50	42	0.38	<0.1	45.00	4.6	27	64.85
0.50 to <0.75	5	0.69	<0.1	45.00	3.6	4	84.83
0.75 to <2.50	4	1.39	<0.1	45.00	2.7	4	108.48
2.50 to <10.00	1	3.78	<0.1	45.00	4.7	1	145.46
10.00 to <100.00	0	12.76	<0.1	45.00	1.5	0	223.09
100.00 (Default)	3	100.00	<0.1	45.00	2.3	0	0
Sub-total	162	2.03	0.2	45.00	4.4	86	53.19
Total	285	3.19	0.4	45.00	4.4	175	61.45

[1] This row includes exposures, which are risk weighted in accordance with Article 153 (5) CRR. Therefore PD-estimations are not available for these transactions.

Article 438 (d) CRR - Development of CCR RWA

The following table provides an analysis of key drivers for RWA movements observed for counterparty credit risk (CCR) exposures calculated under the internal model method (IMM) in the current and previous reporting period. It also shows the corresponding movements in capital requirements, derived from RWA with an 8 % capital ratio.

EU CCR7 – RWA flow statement of counterparty credit risk exposures under the internal model method

		Three months ended Dec 31, 2020		Three months ended Sep 30, 2020	
		a	b	a	b
	in € m.	RWA	Capital requirements	RWA	Capital requirements
1	Counterparty credit risk RWA under the IMM opening balance	**17,664**	**1,413**	17,736	1,419
2	Book size	1,267	101	23	2
3	Book quality	69	6	176	14
4	Model updates	285	23	96	8
5	Methodology and policy	0	0	0	0
6	Acquisitions and disposals	0	0	0	0
7	Foreign exchange movements	(263)	(21)	(367)	(29)
8	Other	0	0	0	0
9	Counterparty credit risk RWA under the IMM closing balance	**19,021**	**1,522**	17,664	1,413

Organic changes in our portfolio size and composition are considered in the category “Book size”. The category “Book quality” mainly represents the effects from portfolio rating migrations, loss given default, model parameter recalibrations as well as collateral coverage and netting activities. “Model updates” include model refinements and model roll out. RWA movements resulting from externally, regulatory-driven changes, e.g. applying new regulations, are considered in the “Methodology and policy” section. “Acquisition and disposals” shows significant exposure movements which can be clearly assigned to new businesses or disposal-related activities. Changes that cannot be attributed to the above categories are reflected in the category “Other”.

The RWA for counterparty credit risk exposures under the IMM increased by 7.7 % or € 1.4 billion since September 30, 2020. The category “Book size” is reflecting increased client demand and market volatility. Further, the increase in category “Model updates” is driven by updates to our internal models. This was partly offset by the FX related decreases.

Article 439 (e) CRR - CCR exposures after credit risk mitigation

The following tables present information on our counterparty credit risk (CCR) exposure and the impact of netting and collateral held as well as the composition of collateral used in both derivatives transactions and securities financing transactions (SFT).

Table EU CCR5-A below provides the gross positive fair values before any credit risk mitigation, the impact of legally enforceable master netting agreements as well as further reduction of our CCR exposure due to eligible collateral we have received. Given the nature of the internal model method (IMM) that we use for the measurement of the majority of our derivatives and SFT, the simulation process of future market values across all asset classes includes, if applicable, the impact from regulatory netting and collateralization. Therefore the net credit exposure disclosed below differs from the regulatory exposure value at default (EaD).

EU CCR5-A – Impact of netting and collateral held on exposure values

						Dec 31, 2020
		a	b	c	d	e
	in € m.	Gross positive fair value or net carrying amount	Netting benefits	Netted current credit exposure	Collateral held	Net credit exposure
1	Derivatives	364,485	278,868	85,617	69,248	16,369
2	Securities Financing Transactions	436,282	383,150	53,132	5,232	47,900
3	Cross-product netting	0	0	0	0	0
4	Total	800,767	662,018	138,749	74,480	64,269

	in € m.	a Gross positive fair value or net carrying amount	b Netting benefits	c Netted current credit exposure	d Collateral held	e Net credit exposure
						Jun 30, 2020
1	Derivatives	395,874	306,166	89,709	75,001	14,707
2	Securities Financing Transactions	437,631	389,936	47,695	4,968	42,727
3	Cross-product netting	0	0	0	0	0
4	Total	833,505	696,101	137,404	79,969	57,435

Table EU CCR5-B discloses a breakdown of all types of collateral posted or received to support or reduce CCR exposures related to derivatives and SFT. For SFT, collateral refers to both legs of the transaction as collateral received and collateral posted.

EU CCR5-B – Composition of collateral for exposures to CCR

						Dec 31, 2020
	a	b	c	d	e	f
	Collateral used in derivative transactions				Collateral used in SFTs	
	Fair value of collateral received		Fair value of posted collateral			
in € m.	Segregated	Unsegregated	Segregated	Unsegregated	Fair value of collateral received	Fair value of posted collateral
Cash	1,020	90,703	2	72,102	157,966	190,077
Bonds	1,674	21,361	1	18,753	165,180	156,884
Equity securities	15	5,911	0	0	97,417	86,514
Other collateral	3,795	847	4,175	0	6,360	2,807
Total	6,503	118,823	4,178	90,854	426,923	436,282

						Jun 30, 2020
	a	b	c	d	e	f
	Collateral used in derivative transactions				Collateral used in SFTs	
	Fair value of collateral received		Fair value of posted collateral			
in € m.	Segregated	Unsegregated	Segregated	Unsegregated	Fair value of collateral received	Fair value of posted collateral
Cash	1,122	90,079	2	71,593	172,589	194,217
Bonds	1,591	23,717	0	20,971	170,287	159,182
Equity securities	11	3,425	0	0	82,923	82,951
Other collateral	3,364	664	3,442	0	4,713	1,281
Total	6,088	117,885	3,445	92,564	430,511	437,631

For further details on derivative exposure please also refer to our Annual Report 2020 table “Maximum exposure to credit risk” on page 127 and table “Credit exposure from derivatives” on page 145.

Article 439 (g-h) CRR - Credit derivatives exposures

The table below discloses the exposure of the credit derivative transactions split into the part held in the regulatory banking book, which is shown under the heading “credit derivative hedges” and the part held in the regulatory trading book, referred to as “other credit derivatives” as well as a split into product types.

EU CCR6 – Credit derivatives exposures

			Dec 31, 2020			Jun 30, 2020
	a	b	c	a	b	c
	Credit derivative hedges			Credit derivative hedges		
in € m.	Protection bought	Protection sold	Other credit derivatives	Protection bought	Protection sold	Other credit derivatives
Notionals						
Single-name credit default swaps	6,367	327	129,989	6,333	490	149,558
Index credit default swaps	0	0	626,424	0	0	741,031
Total return swaps	0	217	14,587	0	80	10,627
Credit options	0	0	49,792	0	0	30,817
Total notionals	**6,367**	**545**	**820,792**	6,333	571	932,033
Fair values	**(416)**	**49**	**243**	(354)	22	(240)
Positive fair value (asset)	132	147	13,699	213	106	9,286
Negative fair value (liability)	548	98	13,456	567	84	9,526

The decrease of credit derivatives exposures in the second half of 2020 to € 828 billion from € 939 billion was primarily driven by index credit default swaps.

Article 439 (i) CRR - Estimate of alpha factor

Under the internal model method (IMM) approach the exposure at default (EAD) is calculated as the product of the expected positive exposure (EPE) and a multiplier 'Alpha' (α). The scaling factor alpha is applied in order to correct for amongst others correlations between parties, concentration risk and to account for the level of volatility/correlation that might coincide with a downturn. Deutsche Bank received regulatory approval to use its own calibrated alpha factor, however, for its regulatory capital calculation the regulatory minimum level has to be applied. In 2020, the regulatory floor has been increased from 1.2 to 1.25. For the small population of transactions for which a simulation cannot be computed or is subject to regulatory restrictions (such as for those with risk factors not approved by the supervisory authorities or for specific wrong-way risk), the EAD used is derived from the mark-to-market method according to Article 274 CRR.

Economic capital demand for credit risk

The table below provides the economic capital usage for credit risk broken down by business areas.

Economic capital demand for credit risk per business area

			2020 increase (decrease) from 2019	
in € m.	Dec 31, 2020	Dec 31, 2019 [1]	in € m.	in %
Corporate Bank	2,588	2,417	170	7
Investment Bank	4,675	4,064	611	15
Private Bank	2,404	2,181	223	10
Asset Management	60	71	(11)	(15)
Capital Release Unit	648	859	(212)	(25)
Corporate & Other	1,262	1,164	98	8
Total	**11,636**	10,757	879	8

[1] Risks amounts allocated to the business segments have been restated to reflect comparatives according to the structure as of December 31, 2020.

The economic capital demand for credit risk as of December 31, 2020 was € 0.9 billion or 8 % higher compared to year-end 2019 mainly due to rating migrations related to the COVID-19 pandemic and a model enhancement for recovery risk.

Market risk

Own funds requirements for market risk under the standardized approach

Article 445 CRR - Market Risk Standardized Approach

As of December 31, 2020, the securitization positions, for which the specific interest rate risk is calculated using the market risk standardized approach, generated capital requirements of € 193 million corresponding to risk weighted-assets of € 2.4 billion. As of June 30, 2020 these positions generated capital requirements of € 198 million corresponding to risk weighted-assets of € 2.5 billion.

The capital requirement for Collective Investment Undertakings under the market risk standardized approach was € 14 million corresponding to risk weighted-assets of € 172 million as of December 31, 2020, compared with € 19 million and € 237 million, respectively, as of June 30, 2020.

The capital requirement for longevity risk under the market risk standardized approach was € 0.2 million corresponding to risk-weighted assets of € 3 million as of December 31, 2020, majority of which is from a legacy portfolio, compared with € 4 million and € 52 million, respectively, as of June 30, 2020.

EU MR1 – Market risk under the standardized approach

		Dec 31, 2020		Jun 30, 2020	
		a	b	a	b
	in € m.	RWA	Capital requirements	RWA	Capital requirements
	Outright products				
1	Interest rate risk (general and specific)[1]	48	4	64	5
2	Equity risk (general and specific)[2]	94	8	134	11
3	Foreign exchange risk[3]	238	19	221	18
4	Commodity risk	0	0	0	0
4a	Longevity risk	3	0	52	4
	Options				
5	Simplified approach	0	0	0	0
6	Delta-plus method	0	0	0	0
7	Scenario approach	0	0	0	0
8	Securitization (specific risk)[4]	2,417	193	2,474	198
9	Total	**2,799**	**224**	2,945	236

[1] Interest Rate risk RWA of € 48 million is from collective investment undertakings
[2] Equity risk RWA of € 94 million is from collective investment undertakings
[3] Foreign Exchange risk RWA includes € 30 million from collective investment undertakings, €208 million related to placeholders for foreign exchange exposures

Qualitative information on the internal model approach

Article 455 (a)(i) CRR - Characteristics of the market risk models

Market risk measurement

Market Risk Management aims to accurately measure all types of market risks by a comprehensive set of risk metrics reflecting economic and regulatory requirements.

In accordance with economic and regulatory requirements, we measure market and related risks using several key risk metrics:

Internally developed market risk models
- Value-at-risk (“VaR”) and stressed value-at-risk (“SVaR”), including CVA VaR and SVaR
- Incremental risk charge

Market risk standardized approaches

- Market Risk Standardized Approach ("MRSA"), applied to investment funds with no look through, MRSA-eligible securitizations and positions subject to longevity risk

Stress testing measures

- Portfolio stress testing
- Business-level stress testing
- Event risk scenarios

Economic capital measures

- Market risk economic capital, including traded default risk

Other model derived and market observable metrics

- Sensitivities
- Market value/notional (concentration risk)
- Loss given default

These measures are viewed as complementary to each other and in aggregate define the market risk framework, by which all businesses can be measured and monitored.

Internally developed market risk models

Value-at-Risk (VaR) at Deutsche Bank Group

VaR is a quantitative measure of the potential loss (in value) of Fair Value positions due to market movements that should not be exceeded in a defined period of time and with a defined confidence level.

Our value-at-risk for the trading businesses is based on our own internal model. In October 1998, the German Banking Supervisory Authority (now the BaFin) approved our internal model for calculating the regulatory market risk capital for our general and specific market risks based on a sensitivity based Monte Carlo approach. In October 2020, the ECB approved a significant change to our VaR model, now a Historical Simulation approach predominantly utilizing full revaluation, although some portfolios remain on a sensitivity based approach. The new approach is used for both Risk Management and Capital Requirements.

The new approach provides more accurate modelling of our risks, enhances our analysis capabilities and provides a more effective tool for risk management. Aside from enabling a more accurate view of market risk, the implementation of Historical Simulation VaR has brought about an even closer alignment of our market risk systems and models to our end of day pricing.

Risk management VaR is calibrated to a 99 % confidence level and a one day holding period. This means we estimate there is a 1 in 100 chance that a mark-to-market loss from our trading positions will be at least as large as the reported VaR. For regulatory capital purposes, our VaR model is calibrated to a 99 % confidence interval and a ten day holding period.

The calculation employs a Historical Simulation technique that uses one year of historical market data as input and observed correlations between the risk factors during this one year period.

Our VaR model is designed to take into account a comprehensive set of risk factors across all asset classes. Key risk factors are swap/government curves, index and issuer-specific credit curves, single equity and index prices, foreign exchange rates, commodity prices as well as their implied volatilities. To help ensure completeness in the risk coverage, second order risk factors, e.g. money market basis, implied dividends, option-adjusted spreads and precious metals lease rates are also considered in the VaR calculation. The list of risk factors include in the VaR model is reviewed regularly and enhanced as part of ongoing model performance reviews.

The model incorporates both linear and, especially for derivatives, nonlinear impacts predominantly through a full revaluation approach but it also utilizes a sensitivity-based approach for certain portfolios. The full revaluation approach uses the historical changes to risk factors as input to pricing functions. The sensitivity based approach uses sensitivities to underlying risk factors in combination with historical changes to those risk factors.

For each business unit a separate VaR is calculated for each risk type, e.g. interest rate risk, credit spread risk, equity risk, foreign exchange risk and commodity risk. "Diversification effect" reflects the fact that the total VaR on a given day will be lower than the sum of the VaR relating to the individual risk types. Simply adding the VaR figures of the individual risk types to arrive at an aggregate VaR would imply the assumption that the losses in all risk types occur simultaneously.

The VaR enables us to apply a consistent measure across our fair value exposures. It allows a comparison of risk in different businesses, and also provides a means of aggregating and netting positions within a portfolio to reflect correlations and offsets between different asset classes. Furthermore, it facilitates comparisons of our market risk both over time and against our daily trading results.

When using VaR results a number of considerations should be taken into account. These include:

– The use of historical market data may not be a good indicator of potential future events, particularly those that are extreme in nature. This “backward-looking” limitation can cause VaR to understate future potential losses (as in 2008), but can also cause it to be overstated immediately following a period of significant stress (as in post COVID-19).
– The one day holding period does not fully capture the market risk arising during periods of illiquidity, when positions cannot be closed out or hedged within one day.
– VaR does not indicate the potential loss beyond the 99th quantile.
– Intra-day risk is not reflected in the end of day VaR calculation.
– There may be risks in the trading or banking book that are partially or not captured by the VaR model.

Our process of systematically capturing and evaluating risks currently not captured in our VaR model has been further developed and improved. An assessment is made to determine the level of materiality of these risks and material risks are prioritized for inclusion in our internal model. Risks not in VaR are monitored and assessed on a regular basis through our Risk Not In VaR (RNIV) framework. This framework has also undergone a significant overhaul in 2020.

We are committed to the ongoing development of our internal risk models, and we allocate substantial resources to reviewing, validating and improving them.

Stressed Value-at-Risk (SVaR)

Stressed Value-at-Risk (SVaR) calculates a stressed value-at-risk measure based on a one year period of significant market stress. We calculate a stressed value-at-risk measure using a 99 % confidence level. Stressed VaR is calculated with a holding period of ten days. Our SVaR calculation utilizes the same systems, trade information and processes as those used for the calculation of value-at-risk. The only difference is that historical market data and observed correlations from a period of significant financial stress (i.e., characterized by high volatilities) is used as an input for the Historical Simulation.

The time window selection process for the stressed value-at-risk calculation is based on the identification of a time window characterized by high levels of volatility in the top value-at-risk contributors. The identified window is then further validated by comparing the SVaR results to neighboring windows using the complete Group portfolio.

Under the Historical Simulation model introduced in the fourth quarter of 2020, the capital calculation for VaR has been higher than that for Stressed VaR which would normally lead to a change in the time window used for Stressed VaR. Following guidance from our regulators, the assessment of this stressed period window has been delayed until 2021 as the current VaR is already based on this more stressed period driven by COVID-19.

CVA Value-at-Risk/ Stressed Value-at-Risk

The advanced approach CVA risk capital charge is determined by applying the VaR model. First, the exposure profiles are determined based on the internal model method (IMM) or the mark-to-market method. The next step consists in determining the synthetic CVA position based on the exposure profile and other risk parameters such as credit spreads. Based on this information the credit spread sensitivity is then calculated. Eligible CVA hedges are also incorporated and the CVA risk capital charge is determined based on the internal market risk models VaR and Stressed VaR using a 99 % confidence level and a 10-day holding period.

Article 455 (a)(ii) CRR - Incremental risk charge

Incremental risk charge (“IRC”)

The incremental risk charge is based on our own internal model and is intended to complement the value-at-risk modeling framework. We use a Monte Carlo Simulation for calculating incremental risk charge as the 99.9 % quantile of the portfolio loss distribution over a one-year capital horizon under a constant position approach and for allocating contributory incremental risk charge to individual positions. The model captures the default and migration risk in an accurate and consistent quantitative approach for all portfolios. Important parameters for the incremental risk charge calculation are exposures, recovery rates, maturity, ratings with corresponding default and migration probabilities and parameters specifying issuer correlations.

We calculate the incremental risk charge on a weekly basis. For regulatory reporting purposes, the charge is determined as the higher of the most recent 12 week average of incremental risk charge and the most recent incremental risk charge.

The contributory incremental risk charge of individual positions, which is calculated by expected shortfall allocation, provides the basis for identifying risk concentrations in the portfolio.

Default and rating migration probabilities are defined by rating migration matrices which are calibrated on historical external rating data. Taking into account the trade-off between granularity of matrices and their stability we apply a global corporate matrix and a sovereign matrix comprising the seven main rating non-default states and one default state. Accordingly, issue or issuer ratings from the rating agencies Moody's, S&P and Fitch are assigned to each position.

To quantify a loss due to rating migration, a revaluation of a position is performed under the new rating. The probability of joint rating downgrades and defaults is determined by the migration and rating correlations of the incremental risk charge model. These correlations are specified through systematic factors that represent geographical regions and industries and are calibrated on historical rating migration and equity time series. The simulation is based on the assumption of a constant position approach where differences in maturities of long and short positions are taken into account. As the default state is absorbing, defaulted positions do not generate any further losses from rating migrations. The price risk of defaulted debt is modeled by stochastic recoveries.

Direct validation of the incremental risk charge through back-testing methods is not possible. The charge is subject to validation principles such as the evaluation of conceptual soundness, ongoing monitoring and process and outcome analysis. Model validation relies more on indirect methods including stress tests and sensitivity analyses. Relevant parameters are included in the annual validation cycle established in the current regulatory framework.

Article 455 (a)(iii) CRR - Market risk stress testing

Stress testing is a key risk management technique, which evaluates the potential effects of extreme market events and extreme movements in individual risk factors. It is one of the core quantitative tools used to assess the market risk of Deutsche Bank's positions and complements VaR and Economic Capital. Market Risk Management performs several types of stress testing to capture a variety of risks: Portfolio Stress Testing, Individual Specific Stress Tests, Event Risk Scenarios, and also contributes to Group-Wide Stress Testing. These are set at varying severities ranging from mild for earning stability purposes to extreme for capital adequacy assessment.

Portfolio Stress Testing measures the profit and loss impact of potential market events based on a broad range of historical or hypothetical macro-economic scenarios considered to be severe and plausible. It is used to manage systemic tail risk and informs on earnings stability and capital resilience.

For Individual Specific Stress Tests, Market Risk Managers identify relevant idiosyncratic risk factors and develop stress scenarios relating either to macro-economic or business-specific developments. Event Risk Scenario measures the impact of historically observable events or hypothetical situations on trading positions for specific emerging market countries and regions.

In addition, Market Risk Management participates in the Group-Wide Stress Test process, where macro-economic scenarios are defined by ERM Risk Research and each risk department translates that same scenario to the relevant shocks required to apply to their portfolio. This includes credit, market, operational and liquidity risks.

Article 455 (a)(iv) CRR - Methodology for backtesting and model validation

Regulatory backtesting of trading market risk

We continually analyze potential weaknesses of our value-at-risk model using statistical techniques, such as backtesting, and also rely on risk management experience.

Backtesting is a procedure used to assess the predictive accuracy of the value-at-risk calculations involving the comparison of hypothetical daily profits and losses under the buy-and-hold assumption ('daily buy-and hold income') to the daily value-at-risk. Under this assumption we estimate the P&L impact that would have resulted on a portfolio for a trading day valued with current market prices and parameters assuming it had been left untouched for that day and compare it with the estimates from the value-at-risk model from the preceding day. Our calculation of hypothetical daily profits and losses (buy & hold income) excludes gains and losses from intraday trading, fees and commissions, carry (including net interest margins), reserves and other miscellaneous revenues. An outlier is a hypothetical buy-and-hold trading loss that exceeds our value-at-risk from the preceding day. On average, we would expect a 99 % confidence level to give rise to two to three outliers representing 1 % of approximately 260 trading days in any one year. We analyze and document underlying reasons for outliers and classify them either as due to market movements, risks not included in our value-at-risk model, model or process shortcomings. We use the results for further enhancement of our value-at-risk methodology. Formal communications explaining the reasons behind any outlier on Group level are provided to the BaFin and the ECB.

In addition to the standard backtesting analysis at the value-at-risk quantile, the value-at-risk model performance is further verified by analyzing the distributional fit across the whole of the distribution (full distribution backtesting). Regular backtesting is also undertaken on hypothetical portfolios to test value-at-risk performance of particular products and their hedges.

There are various Backtesting forums, with participation from Market Risk Management, Market Risk Analysis and Control, Model Validation, and Finance, that regularly review backtesting results as a whole and of individual businesses. They analyze performance fluctuations and assess the predictive power of our value-at-risk model, which allows us to improve and adjust the risk estimation process accordingly.

A model validation team reviews all quantitative aspects of our Value-at-Risk model on a regular basis. The review covers, but is not limited to, model assumptions, calibration approaches for risk parameters, and model performance.

Article 455 (b) CRR - Regulatory approval for market risk models

Our value-at-risk for the trading businesses is based on our own internal model. In October 1998, the German Banking Supervisory Authority (now the BaFin) approved our internal model for calculating the regulatory market risk capital for our general and specific market risks based on a sensitivity based Monte Carlo approach. In October 2020, the ECB approved a significant change to our VaR model, now a Historical Simulation approach predominantly utilizing full revaluation, although some portfolios remain on a sensitivity based approach. This model is now used for regulatory capital calculations for VaR and SVaR (including CVA VaR and SVaR).

We also have approval to use our internally-developed models described above in the calculation of regulatory capital for the Incremental Risk Charge.

Article 455 (c) CRR - Trading book allocation and prudent valuation

Allocation of positions to the regulatory trading book

For regulatory purposes all our positions must be assigned to either the trading book or the banking book. This classification of a position impacts its regulatory treatment, in particular the calculation of the regulatory capital charges for the position. We define the criteria for the allocation of positions to either the trading book or banking book in internal policy documents, which are based on the respective requirements applicable to the Group contained in Articles 102 to 106 of the CRR.

A central function in Finance is responsible for the policy guidance and is the center of competence with regard to questions concerning its application. The Finance functions for the individual business areas are responsible for the classification of positions in line with the policy requirements.

We include positions in the trading book that are financial instruments or commodities which are held with trading intent or which are held for the purpose of hedging other trading book positions.

Positions included in the trading book must be free of any restrictive covenants regarding their transferability or able to be hedged.

Moreover, positions assigned to the trading book must be valued daily. Further information on the valuation methodology that we used is provided in our Annual Report 2020, Note 13 “Financial instruments carried at fair value”, page 282.

As part of the ongoing procedures to confirm that the inclusion of positions in the trading book continues to be in line with the above referenced internal policy guidance, the Finance functions for our trading businesses carry out a global review of the classification of positions on a quarterly basis. The results of the review are documented and presented to the Trading Book Review Forum with representatives from Finance and Legal.

Re-allocations of positions between the trading book and the banking book may only be carried out in line with the internal policy guidance. They must be documented and are subject to approval by the heads of the Finance functions for the respective business areas.

Regulatory prudent valuation of assets carried at fair value

Pursuant to Article 34 CRR institutions shall apply the prudent valuation requirements of Article 105 CRR to all assets measured at fair value and shall deduct from CET 1 capital the amount of any additional value adjustments necessary.

We determined the amount of the additional value adjustments based on the methodology defined in the Commission Delegated Regulation (EU) 2016/101 including the amendment via Commission Delegated Regulation (EU) 2020/866 providing for a revised aggregation factor to apply for duration of the extreme market volatility due to the COVID-19 pandemic until December 31, 2020.

As of December 31, 2020 the amount of the additional value adjustments was € 1.4 billion. The December 31, 2019 amount was € 1.7 billion. The impact of the revised aggregation factor as at December 31, 2020 was € 0.5 billion.

As of December 31, 2020 the reduction of the expected loss from subtracting the additional value adjustments was € 121 million, which partly mitigated the negative impact of the additional value adjustments on our CET 1 capital.

Own funds requirements for market risk under the IMA

Article 455 (e) CRR - Regulatory capital requirements for market risk

The table below presents all internal model-related components relevant for the capital requirement calculation for market risk.

EU MR2-A – Market Risk under the internal models approach (IMA)

			Dec 31, 2020		Jun 30, 2020
		a	b	a	b
	in € m.	RWA	Capital requirements	RWA	Capital requirements
1	VaR (higher of values a and b)	12,109	969	6,987	559
a)	Previous day's VaR (Article 365(1) (VaRt-1))	–	218	–	140
b)	Average of the daily VaR (Article 365(1)) on each of the preceding sixty business days (VaRavg) x multiplication factor ((mc) in accordance with Article 366)	–	969	–	559
2	SVaR (higher of values a and b)	6,983	559	13,960	1,117
a)	Latest SVaR (Article 365(2) (sVaRt-1))	–	173	–	299
b)	Average of the SVaR (Article 365(2) during the preceding sixty business days (sVaRavg) x multiplication factor (ms) (Article 366)	–	559	–	1,117
3	Incremental risk charge -IRC (higher of values a and b)	7,005	560	5,575	446
a)	Most recent IRC value (incremental default and migration risks calculated in accordance with Article 370 and Article 371 of the CRR)	–	438	–	404
b)	Average of the IRC number over the preceding 12 weeks	–	560	–	446
4	Comprehensive Risk Measure – CRM (higher of values a, b and c)	–	–	–	–
a)	Most recent risk number for the correlation trading portfolio (article 377 of the CRR)	–	–	–	–
b)	Average of the risk number for the correlation trading portfolio over the preceding 12-weeks	–	–	–	–
c)	8 % of the own funds requirement in SA on most recent risk number for the correlation trading portfolio (Article 338(4) of the CRR)	–	–	–	–
5	Other	0	0	0	0
6	Total	**26,098**	**2,088**	26,523	2,122

As of December 31, 2020 the IMA (Internal Models Approach) components for market risk totaled € 26.1 billion, which was a decrease of € 0.4 billion since June 30, 2020. The changes in value-at-risk and stressed value-at-risk components were predominantly impacted by the transition to Historical Simulation model which is more responsive to extreme tail events such as those experienced in March and April of 2020, and also uses a direct ten day period return calculation (against ten day scaling from one day under Monte Carlo).

The following table EU MR2-B provides an analysis of key drivers for movements observed for market risk RWA covered by internal models (i.e. value-at-risk, stressed value-at-risk, incremental risk charge and comprehensive risk measure) in the current and previous reporting period. It also shows the corresponding movements in capital requirements, derived from RWA with an 8 % capital ratio.

EU MR2-B – RWA flow statements of market risk exposures under the IMA

		Three months ended Dec 31, 2020						
		a	b	c	d	e	f	g
	in € m.	VaR	SVaR	IRC	Comprehensive risk measure	Other	Total RWA	Total capital requirements
1	Market Risk RWA opening balance[1]	7,077	12,989	4,913	–	0	24,978	1,998
1a	Regulatory adjustment[2]	(5,351)	(10,022)	0	–	0	(15,373)	(1,230)
1b	RWA at the previous quarter-end (end of the day)[3]	1,726	2,966	4,913	–	0	9,605	768
2	Movement in risk levels	(8,335)	2,180	1,126	–	0	(5,030)	(402)
3	Model updates/changes	855	1,913	(561)	–	0	2,207	177
4	Methodology and policy	8,481	(4,901)	0	–	0	3,580	286
5	Acquisitions and disposals	0	0	0	–	0	0	0
6	Foreign exchange movements	0	0	0	–	0	0	0
6a	Market data changes and recalibrations	0	0	0	–	0	0	0
7	Other	0	0	0	–	0	0	0
8a	RWA at the end of the reporting period (end of the day)[3]	2,726	2,158	5,478	–	0	10,362	829
8b	Regulatory adjustment[2]	9,383	4,826	1,527	–	0	15,736	1,259
8	Market Risk RWA closing balance[1]	12,109	6,983	7,005	–	0	26,098	2,088

[1] Represents RWA at previous and current reporting period quarter end.
[2] Indicates the difference between RWA and RWA (end of day) at the beginning and end of period.
[3] For a given component (e.g. VaR) it refers to the RWA that would be computed if the previous or current quarter end snapshot figure of the component determines the quarter end RWA, as opposed to a 60-day average for regulatory purposes.

		Three months ended Sep 30, 2020						
		a	b	c	d	e	f	g
	in € m.	VaR	SVaR	IRC	Comprehensive risk measure	Other	Total RWA	Total capital requirements
1	Market Risk RWA opening balance[1]	6,987	13,960	5,575	–	0	26,523	2,122
1a	Regulatory adjustment[2]	(5,237)	(10,219)	(523)	–	0	(15,979)	(1,278)
1b	RWA at the previous quarter-end (end of the day)[3]	1,751	3,741	5,053	–	0	10,544	844
2	Movement in risk levels	335	634	(140)	–	0	829	66
3	Model updates/changes	(492)	(1,409)	0	–	0	(1,901)	(152)
4	Methodology and policy	0	0	0	–	0	0	0
5	Acquisitions and disposals	0	0	0	–	0	0	0
6	Foreign exchange movements	0	0	0	–	0	0	0
6a	Market data changes and recalibrations	132	0	0	–	0	132	11
7	Other	0	0	0	–	0	0	0
8a	RWA at the end of the reporting period (end of the day)[3]	1,726	2,966	4,913	–	0	9,605	768
8b	Regulatory adjustment[2]	5,351	10,022	0	–	0	15,373	1,230
8	Market Risk RWA closing balance[1]	7,077	12,989	4,913	–	0	24,978	1,998

[1] Represents RWA at previous and current reporting period quarter end.
[2] Indicates the difference between RWA and RWA (end of day) at the beginning and end of period.
[3] For a given component (e.g. VaR) it refers to the RWA that would be computed if the previous or current quarter end snapshot figure of the component determines the quarter end RWA, as opposed to a 60-day average for regulatory purposes.

The market risk RWA movements due to position changes are represented in line “Movement in risk levels”. Changes to our market risk RWA internal models, such as methodology enhancements or risk scope extensions, are included in the category of “Model updates/changes”. In the “Methodology and policy” category we reflect regulatory driven changes to our market risk RWA models and calculations. Significant new businesses and disposals would be assigned to the line item “Acquisition and disposals”. The impacts of “Foreign exchange movements” are captured in “Movements in risk levels”. Changes in market data levels, volatilities, correlations, liquidity and ratings are included under the “Market data changes and recalibrations” category.

We went live with the Historical Simulation Value-at-Risk model for managing and capitalizing market risk beginning October 1, 2020. The new model predominantly utilizes full revaluation, as opposed to the previously used sensitivity based Monte Carlo model. Data in our external reports is based on the Historical Simulation model beginning fourth quarter of 2020, while historical data, including for third quarter of 2020, was based on the Monte Carlo model.

As of December 31, 2020 the IMA (Internal Models Approach) components for market risk totaled € 26.1 billion, which was an increase of € 1.1 billion since September 30, 2020 driven predominantly by the incremental risk charge component due to increases in sovereign exposures. The changes in value-at-risk and stressed value-at-risk components were predominantly impacted by the transition to Historical Simulation model which is more responsive to extreme tail events such as those experienced in March and April of 2020, and also uses a direct ten day period return calculation (against ten day scaling from one day under Monte Carlo).

Other quantitative information for market risk under the internal models approach

Article 455 (d) CRR - Overview of Value-at-Risk Metrics

The following table, EU MR3, displays the maximum, minimum, average and the ending for the reporting period values resulting from the different types of models. This table is based on the spot values of the metrics as opposed to the regulatory defined calculation (e.g. not considering any comparisons between spot and average values used in the actual RWA calculations). The VaR and SVaR are based on Monte Carlo model until September 30, 2020 and on Historical Simulation model post go-live from October 1, 2020. The VaR and SVaR are both ten day values; actual ten day calculation under Historical Simulation and using a square root of ten conversion from the one day value under Monte Carlo.

EU MR3 – IMA values for trading portfolios[1]

		Dec 31, 2020	Jun 30, 2020
	in € m.	a	a
VaR (10 day 99 %)			
1	Maximum value	300.1	167.9
2	Average value	175.8	105.8
3	Minimum value	113.8	50.9
4	Period end	246.9	126.5
SVaR (10 day 99 %)			
5	Maximum value	273.4	271.8
6	Average value	172.0	229.0
7	Minimum value	84.0	184.9
8	Period end	165.5	247.1
IRC (99.9 %)			
9	Maximum value	688.8	553.9
10	Average value	457.6	447.9
11	Minimum value	308.4	367.6
12	Period end	438.2	446.0
Comprehensive risk capital charge (99.9 %)			
13	Maximum value	–	–
14	Average value	–	–
15	Minimum value	–	–
16	Period end	–	–

[1] Amounts show the maximum, average and minimum for the preceding six month period.

Article 455 (f) CRR - Weighted average liquidity horizons in market risk models

For information on the weighted average liquidity/capital horizons for the incremental risk charge please refer to section “Article 455 (a)(ii) CRR - Incremental risk charge” in this report on the page 156.

Article 455 (g) CRR - Comparison of end-of-day VaR measures with one-day changes in portfolio's value

Please refer to our Annual Report 2020, section “Results of regulatory backtesting of trading market risk” on page 150 for further insights into Deutsche Bank’s market risk backtesting results – in particular explanations and background on the observed outliers and the related graph EU MR4 – Comparison of VaR estimates with gains/losses.

Economic capital demand for our trading market risk

The economic capital demand for trading market risk decreased to € 2.2 billion as of December 31, 2020, compared to € 3.6 billion at year-end 2019. The decrease was primarily driven by a lower level of credit inventory in the Investment Bank, most notably from Commercial Real Estate business.

Economic capital demand for our nontrading market risk portfolios per business area

Economic capital demand of nontrading portfolios by business division

			2020 increase (decrease) from 2019	
in € m.	Dec 31, 2020	Dec 31, 2019	in € m.	in %
Corporate Bank	633	387	246	64
Investment Bank	471	411	60	15
Private Bank	1,169	1,863	(694)	(37)
Asset Management	413	448	(35)	(8)
Capital Release Unit	40	63	(23)	(37)
Corporate & Other	5,969	5,003	966	19
Total	**8,695**	8,175	520	6

Nontrading market risk economic capital usage totaled € 8.7 billion as of December 31, 2020, which is € 0.5 billion, or 6 %, above our economic capital usage at year-end 2019.

In Corporate Bank nontrading market risk arises mainly from interest rate risk, including risk arising from modelling of non-maturity deposits and investment risk. The increase of economic capital usage for Corporate Bank was driven by the reallocation of portfolios of Non-Maturing Deposits from Private Bank into Commercial Bank.

In Investment Bank nontrading market risk arises primarily from investment risk and interest rate risk in the banking book. The increase of economic capital usage for Investment Bank was mainly driven by lower diversification effects with other business divisions.

In the Private Bank nontrading market risk arises primarily from investment risk, interest rate risk, including risk arising from modelling of client deposits and credit spread risk. The decrease of economic capital usage for Private Bank was mainly driven by additional diversification benefits resulting from model enhancements, a reallocation of Pension risk from Private Bank to Corporate & Other and by a reduction in credit spread risk exposure.

In Asset Management nontrading market risk arises from investment risk and guaranteed funds risk. The decrease in economic capital usage in Asset Management was mainly driven by increased diversification effects of guaranteed funds risk with other business divisions.

In Capital Release Unit nontrading market risk mainly arises from investment risk. The decrease of economic capital usage for Capital Release Unit was mainly driven by reduction in the investment inventory.

In Corporate & Other nontrading market risk mainly arises from structural foreign exchange risk, pension risk, interest rate risk in the banking book, credit spread risk and equity risk from our equity compensation plans. The increase of economic capital usage in Corporate & Other was mainly driven by increased level of market risk exposure from strategic liquidity reserve securities portfolio as well as an increased market value of our equity compensation short position.

Operational risk

Article 446 CRR - Operational risk measurement

We calculate and measure the regulatory and economic capital requirements for operational risk using the Advanced Measurement Approach (AMA) methodology. Our AMA capital calculation is based upon the loss distribution approach. Gross losses from historical internal and external loss data (Operational Riskdata eXchange Association consortium data) and external scenarios from a public database (IBM OpData) complemented by internal scenario data are used to estimate the risk profile (i.e., a loss frequency and a loss severity distribution). Our loss distribution approach model includes conservatism by recognizing losses on events that arise over multiple years as single events in our historical loss profile.

Within the loss distribution approach model, the frequency and severity distributions are combined in a Monte Carlo simulation to generate potential losses over a one year time horizon. Finally, the risk mitigating benefits of insurance are applied to each loss generated in the Monte Carlo simulation. Correlation and diversification benefits are applied to the net losses in a manner compatible with regulatory requirements to arrive at a net loss distribution at Group level, covering expected and unexpected losses. Capital is then allocated to each of the business divisions after considering qualitative adjustments and expected loss.

The regulatory and economic capital requirements for operational risk are derived from the 99.9 % percentile; see the section “Economic Capital Adequacy” for details. Both regulatory and economic capital requirements are calculated for a time horizon of one year.

The regulatory and economic capital demand calculations are performed on a quarterly basis. NFRM establishes and maintains the approach for capital demand quantification and ensures that appropriate development, validation and change governance processes are in place, whereby the validation is performed by an independent validation function and in line with the Group’s model risk management process.

Drivers for operational risk capital development

In 2020, our total operational risk losses decreased by 8 % compared with 2019.They were predominantly driven by losses and provisions arising from civil litigation and regulatory enforcement. Such losses still make up 73 % of operational risk losses and account for the majority of operational risk regulatory and economic capital demand, being more heavily reliant on our long-term loss history. For a description of our current legal and regulatory proceedings, please see section “Current Individual Proceedings” in Note 29 “Provisions” to the consolidated financial statements. The operational risk losses from civil litigation and regulatory enforcement decreased by € 74 million or 21 % while our non-legal operational risk losses increased by € 42 million or 63 % compared to 2019, primarily as a result of COVID-19 related expenses. Excluding the effects of COVID-19, non-legal operational risk losses were broadly flat.

In view of the relevance of legal risks within our operational risk profile, we dedicate specific attention to the management and measurement of our open civil litigation and regulatory enforcement matters where the bank relies both on information from internal as well as external data sources to consider developments in legal matters that affect the bank specifically but also the banking industry as a whole. Reflecting the multi-year nature of legal proceedings the measurement of these risks furthermore takes into account changing levels of certainty by capturing the risks at various stages throughout the lifecycle of a legal matter.

Conceptually, the bank measures operational risk including legal risk by determining the maximum loss that will not be exceeded with a given probability. This maximum loss amount includes a component that due to the IFRS criteria is reflected in our financial statements and a component that is expressed as regulatory or economic capital demand beyond the amount reflected as provisions within our financial statements.

The legal losses which the bank expects with a likelihood of more than 50 % are already reflected in our IFRS group financial statements. These losses include net changes in provisions for existing and new cases in a specific period where the loss is deemed probable and is reliably measurable in accordance with IAS 37. The development of our legal provisions for civil litigations and regulatory enforcement is outlined in detail in Note 27 “Provisions” of our Annual Report 2020.

Uncertain legal losses which are not reflected in our financial statements as provisions because they do not meet the recognition criteria under IAS 37 are expressed as “regulatory or economic capital demand”.

To quantify the litigation losses in the AMA model the bank takes into account historical losses, provisions, contingent liabilities and legal forecasts. Legal forecasts are generally comprised of ranges of potential losses from legal matters that are not deemed probable but are reasonably possible. Reasonably possible losses may result from ongoing and new legal matters which are reviewed at least quarterly by the attorneys handling the legal matters.

We include the legal forecasts in the “Relevant Loss Data” used in our AMA model. The projection range of the legal forecasts is not restricted to the one year capital time horizon but goes beyond and conservatively assumes early settlement of the underlying losses in the reporting period - thus considering the multi-year nature of legal matters.

Our AMA model validation and quality control concept

We independently validate all our AMA model components including but not limited to AMA core model, scenarios, risk & control assessments, expected loss and relevant loss data individually. The results of the validations are summarized in validation reports and identified issues are followed up for resolution. For example, the validation activities in the past years detected areas of improvement required in our AMA model regarding the selection of NFR appetite metrics and the use of legal forecasts, which are now included in our AMA model. Quality controls are performed for the AMA components requiring data input provided by business divisions and result in capital impact. The AMA components and documentation are challenged and compared across business divisions to help us maintain consistency and adequacy for our capital metrics.

Our operational risk management stress testing concept

We conduct stress testing on a regular basis to complement our AMA methodology, to analyze the impact of extreme stress scenarios on our capital and the profit-and-loss account. It also contains reputational impacts. In 2020, NFRM took part in all firm-wide stress test scenarios and assessed and contributed the impact of operational risk to the various stress levels of the scenarios. The impact of operational risk on Group-wide stress test scenarios has been moderate and remained in the expected range in regards to capital, which is due to the fact that our AMA model already applies a conservative multi-year view on loss sizes (including legal forecasts) even in non-stress mode.

Article 446 CRR - Operational risk exposure

Operational risk – risk profile

Operational risk losses by event type (profit and loss view)

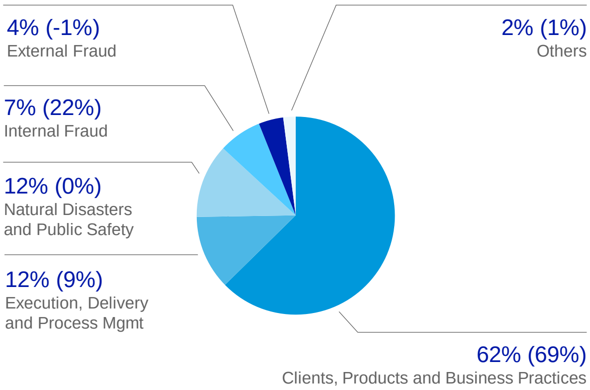
in € m.	2020	2019[1]
Clients, Products and Business Practices	247	313
Execution, Delivery and Process Management	49	57
Natural Disasters and Public Safety	47	3
Internal Fraud	28	27
External Fraud	16	21
Others	8	8
Group	**396**	429

[1] 2019 loss figures revised from prior year presentation due to subsequent capture of losses and reclassification.

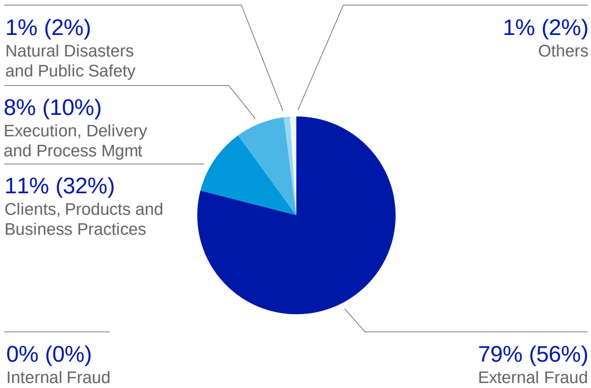
As of December 31, 2020, operational losses decreased by € 33 million or 8 % compared to year-end 2019, despite a large increase in losses relating to the event type “Natural Disasters and Public Safety” as a result of COVID-19 expenses. Excluding the effects of COVID-19, operational losses would have decreased by € 77 million or 18 % compared to 2019. The decrease was driven by the event types “Clients, Products and Business Practices” and “Execution, Delivery and Process Management”, predominantly due to a reduction in legacy losses associated with civil litigation and regulatory enforcement.

Operational losses by event type occurred in the period 2020 (2015-2019)[1]

Distribution of Operational Losses (posting date)



Frequency of Operational Losses (first posting date)



[1] Percentages in brackets correspond to loss frequency respectively to loss amount for losses occurred in 2015-2019 period. Frequency and amounts can change subsequently.

The above left chart “Distribution of Operational Losses” summarizes the proportion of operational risk loss postings by event type using the P&L value in 2020 compared to the five-year period 2015-2019 in brackets. The event type “Clients, Products and Business Practices” dominates operational losses with a share of 62 % and is comprised mainly of outflows related to litigation, investigations and enforcement actions. “Execution, Delivery and Process Management” (12 %) and “Natural Disasters and Public Safety (12 %) share the second highest proportion of losses; the latter was primarily driven by expenses relating to COVID-19. Losses from “Internal Fraud” were at 7 %, “External Fraud” at 4 % and “Others” at 2 %.

The above right chart “Frequency of Operational Losses” summarizes the proportion of operational risk events by event type based on a count of events where losses were first recognized in 2020, compared to the five-year period 2015-2019 in brackets. Frequencies are driven predominantly by the event type “External Fraud” which comprised 79 % of all observed loss events, followed by “Clients, Products and Business Practices” at 11 %. “Execution, Delivery and Process Management” contributed to 8 %, and other event types made up the remaining 2 %. Although the event type “Internal Fraud” contributed significantly to the distribution of losses, it has a negligible frequency, comprising less than 1 % of loss events in 2020.

While we seek to ensure the comprehensive capture of operational risk loss events with a P&L impact of € 10.000 or greater, the totals shown in this section may be underestimated due to delayed detection and recording of loss events.

Economic capital demand for operational risks

Economic capital demand for operational risk by business division

			2020 increase (decrease) from 2019	
in € m.	Dec 31, 2020	Dec 31, 2019	in € m.	in %
Corporate Bank	482	585	(103)	(18)
Investment Bank	2,169	2,122	47	2
Private Bank	646	666	(20)	(3)
Asset Management	284	366	(82)	(23)
Capital Release Unit	1,930	2,074	(144)	(7)
Corporate & Other	0	0	0	N/M
Total economic capital demand for operational risk	**5,512**	5,813	(301)	(5)

The operational risk economic capital usage totaled € 5.5 billion as of December 31, 2020, which was € 0.3 billion or 5 % lower than the € 5.8 billion economic capital usage as of December 31, 2019. In line with the development of our RWA for operational risk, the decrease was largely driven by a lighter loss profile feeding into our capital model, which was partly offset by a reduction of the expected loss deductible due to a positive outlook of operational risk loss development as well as by slightly weaker NFR appetite metrics and RCA scores. For a detailed description see the section “Operational risk management”. For a detailed description see the section “Operational risk management”.

Article 454 CRR - Use of the Advanced Measurement Approaches to operational risk

Description of the use of insurance and other risk transfer mechanisms for the purpose of mitigation of this risk

The definition of our insurance strategy and supporting insurance policy and guidelines is the responsibility of our specialized unit Corporate Insurance/Deukona (“CI/D”). CI/D is responsible for our global corporate insurance policy which is approved by our Management Board.

CI/D is responsible for acquiring insurance coverage and for negotiating contract terms and premiums. CI/D also has a role in the allocation of insurance premiums to the businesses. CI/D specialists assist in devising the method for reflecting insurance in the capital calculations and in arriving at parameters to reflect the regulatory requirements. They validate the settings of insurance parameters used in the AMA model and provide respective updates. CI/D is actively involved in industry efforts to reflect the effect of insurance in the results of the capital calculations.

We buy insurance in order to protect ourselves against unexpected and substantial unforeseeable losses. The identification, definition of magnitude and estimation procedures used are based on the recognized insurance principles and methods. The maximum limit per insured risk takes into account the reliability of the insurer and a cost/benefit ratio, especially in cases in which the insurance market tries to reduce coverage by restricted/limited policy wordings and specific exclusions.

We maintain two insurance companies. However, insurance contracts provided are only considered in the modeling/calculation of insurance-related reductions of operational risk capital requirements where the risk is re-insured in the external insurance market.

The regulatory capital figure includes a deduction for insurance coverage amounting to € 72 million as of December 31, 2020 compared with € 154 million as of December 31, 2019. Currently, no other risk transfer techniques beyond insurance are recognized in the AMA model.

CI/D selects insurance partners in strict compliance with the regulatory requirements specified in the CRR and based on recommendations of the respective subject matter experts on the recognition of insurance in advanced measurement approaches. The insurance portfolio, as well as CI/D activities, is audited by Group Audit on a risk-based approach.

Exposures in equities in the banking book

Article 447 (a) CRR - Accounting and valuation of equity investments

Outside of trading, equity investments which are neither consolidated for regulatory purposes nor deducted from our regulatory capital are held as equity positions in the regulatory banking book. In our consolidated balance sheet, these equity investments are classified as equity method investments and financial assets mandatory at fair value through profit and loss (FVTPL).

Article 447 (b) CRR - Equity investment exposure

Equity investments according to IFRS classification

	Carrying value	
in € m.	Dec 31, 2020[1]	Dec 31, 2019
Equity method investments	**915**	929
Exchange-traded positions	0	0
Non-exchange-traded positions	915	929
Financial assets mandatory at fair value through profit and loss - equity instruments	**1,958**	1,731
Exchange-traded positions	37	25
Non-exchange-traded positions	1,921	1,705
Total equity investments	**2,873**	2,660

For equity investments classified as non-trading financial assets mandatory at FVTPL, the components considered are realized gains and losses from sales and liquidations as well as unrealized revaluation gains (losses) and impairments. For equity method investments, the gain and loss elements consist of realized gains and losses from sales and liquidations, pro-rata share of net income (loss), impairments and unrealized revaluation gains (losses) in form of the differences between carrying value and fair value. As of December 31, 2020, a slight excess of € 133.9 million in fair value is observed compared to the carrying value for the investment positions classified as equity method investments.

Article 447 (c) CRR - Types and nature of equity exposures

The tables above and below present IFRS classifications and the gains (losses) for equity investments held in the regulatory banking book. However, the following aspects need to be considered when comparing the equity investments held – presented below – with the equity position in the regulatory banking book:

- Entities holding equity investments which are considered for regulatory purposes but not consolidated according to IFRS, do not provide IFRS balance sheet and profit or loss information, and are excluded from these tables. The regulatory exposure value (“EAD”) of these excluded equity investments has been zero for December 31, 2020 similar to December 31, 2019.
- Other positions like equity underlying resulting from derivative transactions or certain subordinated bonds which from a regulatory point of view are also assigned to the exposure class “Equity in the banking book” are excluded from the tables. Their EAD amounted to € 137 million as of December 31, 2020 and € 58 million as of December 31, 2019.
- The regulatory equity position includes € 990 million EAD as of December 31, 2020 and € 690 million EAD as of December 31, 2019 in respect of equity investments which are Group-internal from an IFRS perspective.
- “Non-exchange-traded positions” combine private equity exposures in sufficiently diversified portfolios and other exposures according to Article 447 (c) CRR.

The Group holds the majority of its investments to support strategic goals and only to a lesser extent to realize gains on it. A smaller portion of these investments constitute legacy items.

Article 447 (d-e) CRR - Gains and losses from equity investments

Realized gains (losses) in the reporting period and unrealized gains (losses) at year-end from equity investments

in € m.	2020	2019
Gains and losses on disposal	160	245
Impairments	0	0
Pro-rata share of net income (loss)	103	104
Total realized gains (losses) from equity investments	**262**	349

	Dec 31, 2020	Dec 31, 2019
Unrealized revaluation gains (losses)	467	509
Difference between carrying value and fair value	0	0
Total unrealized gains (losses) from equity investments	**467**	509

The realized gains (losses) on disposals, the impairments and the pro-rata share of net income (loss) are referring to the reporting period 2020 and 2019 whereas the unrealized revaluation gains (losses) as well as the difference between the carrying values and the fair values for the equity investments represent the amounts as of December 31, 2020, and December 31, 2019.

Exposure to interest rate risk in the banking book (Article 448 CRR)

Please refer to our Annual Report 2020 chapter “Risk and capital management”, section “Nontrading market risk” with its sub-section “Interest rate risk in the banking book” on page 97 as well as to the section “Nontrading market risk exposures” and therein the sub-section “Interest rate risk in the banking book” on page 153.

Exposure to securitization positions

Article 449 (a) CRR - Objectives in relation to securitization activity

We engage in various business activities that use securitization structures. The main purposes are to provide investor clients with access to risk and returns related to specific portfolios of assets, to provide borrowing clients with access to funding and to manage our own credit risk exposure. In order to achieve our business objectives, we act as originator, sponsor and investor on the securitization markets.

Article 4(1)(61) CRR defines which types of transactions and positions must be classified as securitization transactions and securitization positions for regulatory reporting.

Securitization transactions are basically defined as transactions in which the credit risk of a securitized portfolio is divided into at least two securitization tranches and where the payments to the holders of the tranches depend on the performance of the securitized portfolio. The different tranches are in a subordinate relationship that determines the order and the amount of payments or losses assigned to the holders of the tranches (waterfall). Loss allocations to a junior tranche will not already lead to a termination of the entire securitization transaction, i.e., senior tranches survive loss allocations to subordinate tranches.

Securitization positions can be acquired in various forms including investments in securitization tranches, derivative transactions for hedging interest rate and currency risks included in the waterfall, liquidity facilities, credit enhancements, unfunded credit protection or collateral for securitization tranches.

Assets originated or acquired with the intent to securitize follow the general approach for the assignment to the regulatory banking or trading book. Further details are described in chapter "Article 455 (c) CRR - Trading book allocation and prudent valuation", section "Allocation of positions to the regulatory trading book" on page 158 in this report.

Article 449 (b) CRR - Nature of other risks in securitized assets

Similar to other fixed income and credit assets, securitized trading volume is linked to global growth and geopolitical events which affect liquidity and can lead to lower trading volumes, as observed during the crisis. Current and proposed changes to regulation and uncertainty over final implementation may lead to increased volatility and decreased liquidity/trading volumes across securitized products. Other potential risks that exist in securitized assets are prepayment, default, loss severity and servicer performance. Note that trading book assets are marked to market and the previous mentioned risks are reflected in the position's price.

Securitization activities have an impact on our liquidity activity. For example, we enter into securitization transactions as part of an active liquidity risk management strategy. However, we also face risk of potential drawdown under the revolving commitments provided under certain securitization facilities. This liquidity risk is monitored by our Treasury department and is included in our liquidity planning and regular stress testing.

Article 449 (d-e) CRR - The roles played in the securitization process

In the banking book, we act as originator, sponsor and investor. As an originator we use securitizations primarily as a strategy to reduce credit risk, mainly through the Strategic Corporate Lending ("SCL"). SCL uses, among other means, synthetic securitizations to manage the credit risk of loans and lending-related commitments of the Institutional Corporate Credit portfolio (primarily unsecured, investment grade corporates), Leveraged Debt Capital Markets portfolio (primarily secured, non-investment grade corporates) and the German and Dutch MidCap portfolio. In addition Corporate Bank, through the Global Transaction Banking division, manages their trade finance exposures separately through synthetic securitizations. For all of the above portfolios, the credit risk is predominantly transferred to counterparties through synthetic securitizations mainly through the issuance of Credit Linked Notes providing first loss protection.

Additionally, on a limited basis we have entered into securitization transactions as part of an active liquidity risk management strategy. These transactions do not transfer credit risk and are therefore not included in the quantitative part of this section.

Within our existing role as sponsor, we continue to establish and manage securitization schemes in which special purpose entities purchase exposures from third-party entities on behalf of investors. In these transactions, we have substantial influence on the selection of the purchased exposures and ultimate composition of the securitized portfolios.

Furthermore, we act as an investor in third party securitizations through the purchase of tranches from third party-issued securitizations, or by providing liquidity, credit support or other form of financing. Additionally, we assist third party securitizations by providing derivatives related to securitization structures. These include currency, interest rate and credit derivatives.

Overall, the securitization positions are exposed to the performance of diverse asset classes, including primarily corporate senior secured loans or unsecured debt, consumer debt such as auto loans or student loans, as well as residential or commercial first and second lien mortgages. We are active across the entire capital structure with an emphasis on the more senior tranches. The subset of re-securitization is predominantly backed by securitizations with corporate obligations in the underlying pools. However, the subset of re-securitization is not part of an active investment strategy anymore and is only representing a very marginal part of the overall securitization portfolio.

In the trading book, we act as originator, sponsor and investor. In the role of investor, our main objective is to serve as a market maker in the secondary market. The market making function consists of providing liquidity for our customers and providing two way markets (buy and sell) to generate flow trading revenues. In the role of originator, we finance loans to be securitized, predominantly in the commercial real estate business. Trading book activities where we have the role of a sponsor (excluding activities derived from multi-seller originator transactions) as described above are minimal.

Our securitization desks trade assets across all capital structures, from senior bonds with large subordination to first loss subordinate tranches, across both securitizations and re-securitizations. Securitization positions consist mostly of residential mortgage backed securities (“RMBS”) and commercial mortgage backed securities (“CMBS”) backed by first and second lien loans, collateralized loan obligations (“CLOs”) backed by corporate senior secured loans and unsecured debt and consumer ABS backed by secured and unsecured credit.

For further details about the extent of involvement in securitization roles, please also see section “Article 449 (n) CRR - Banking and trading book securitization exposures” and tables from section “(i) - Amount of outstanding exposures securitized” on page 175 of this Pillar 3 report.

Article 449 (c,f) CRR - Management of securitization positions, and risks in re-securitization activities

Management of banking book securitizations

Primary recourse for securitization exposures lies with the underlying assets. The related risk is mitigated by credit enhancement typically in the form of overcollateralization, subordination, reserve accounts, excess interest, or other support arrangements. Additional protection features include performance triggers, financial covenants and events of default stipulated in the legal documentation which, when breached, provide for the acceleration of repayment, rights of foreclosure and/or other remediation.

The initial due diligence for new banking book exposures usually includes any or all of the following, depending on the specifics of the transaction: (a) the review of the relevant documents including term sheets, servicer reports or other historical performance data, third-party assessment reports such as rating agency analysis (if externally rated), etc., (b) modeling of base and downside scenarios through asset-class specific cash-flow models, (c) servicer reviews to assess the robustness of the servicer’s processes and financial strength. The result of this due diligence is summarized in a credit and rating review which requires approval by an appropriate level of credit authority, depending on the size of exposure and internal rating assigned.

Compliance with the regulatory requirements for risk retention, due diligence and monitoring according to the applicable regulatory requirements is part of our credit review process and the relevant data is gathered for reporting purposes with the support of the IT systems used for the credit review process and the process for financial reporting

Ongoing regular performance reviews include checks of the periodic servicer reports against any performance triggers/covenants in the loan documentation, as well as the overall performance trend in the context of economic, geographic, sector and servicer developments. Monitoring of the re-securitization subset takes into consideration the performance of the securitized tranches' underlying assets, to the extent available.

For lending-related commitments an internal rating review is required at least annually. Significant negative or positive changes in asset performance can trigger an earlier review date. Full credit reviews are also required annually, or, for highly rated exposures, every other year. Furthermore, there is a separate, usually quarterly, watch list process for exposures identified to be at a higher risk of loss, which requires a separate assessment of asset and servicer performance. It includes a review of the exposure strategy and identifies next steps to be taken to mitigate loss potential. There is no difference in approach for re-securitization transactions.

Evaluation of structural integrity is another important component of risk management for securitization, focusing on the structural protection of a securitization as defined in the legal documentation (i.e., perfection of security interest, segregation of payment flows, and rights to audit). The evaluation for each securitization is performed by a dedicated team who engages third-party auditors, determines audit scopes, and reviews the results of such external audits. The results of these risk reviews and assessments complement the credit and rating review process performed by Credit Risk Management.

Management of trading book securitizations

Our Market Risk Management Governance Framework applies to all securitization positions held within the trading book. The Risk Governance Framework applied to securitization includes policies and procedures with respect to new product approvals, new transaction approvals, risk models and measurements, as well as inventory management systems and trade entry. All securitization positions held within the trading book are captured, reported and limited within the Risk Governance Framework at the global, regional and product levels. Any changes in credit and market risks are also reported.

The limit structure includes value-at-risk and product specific thresholds. Asset class market value limits are based on seniority/rating and liquidity, where lower rated positions or positions in less liquid asset class are given a lower trading threshold. The limit monitoring system captures exposures and flags any threshold breaches. Market Risk Management approval is required for any trades over the limit or threshold.

The Market Risk Management Governance Framework also captures issuer (credit) risk for securitization positions in the trading book. MRM's process manages concentration risks and sets thresholds at the position level. The limit structure is based on asset class and rating where less liquid positions and those with lower ratings are assigned lower trading thresholds. When the limit monitoring system captures positions that exceed their respective market value thresholds on a global basis, MRM approval is required. Further due diligence is performed on positions that require trade approval; this includes analyzing the credit performance of the security and evaluating risks of the trade. In addition collateral level stress testing and performance monitoring is incorporated into the risk management process. The process covers both securitizations and re-securitizations.

Compliance with the CRR rules, as applicable requires that pre-trade due diligence is performed on all relevant positions. It is the responsibility of the respective trading desk to perform the pre-trade due diligence and then record the appropriate data records at trade execution to indicate whether relevant due diligence items have been performed. The pre-trade due diligence items include confirmations of deal structural features, performance monitoring of the underlying portfolio, and any related retention disclosures.

Product Control group within Finance then reviews trade inputs for errors or flag changes, distributes regulatory control reports and serves as the subject matter escalation contact. Upon validation of flag changes or trading desk errors, the Product Control group within Finance will then communicate and action the changes accordingly. Further pre-trade due diligence is performed by Market Risk Management for CRR, as applicable for relevant positions exceeding predefined limits (process as described above). Please refer to section "Market risk management" on page 93 in our Annual Report 2020 for detailed information on the market risk management framework.

Article 449 (g) CRR - Policies with respect to hedging and unfunded protection

Management of banking book securitizations

Management of credit risk for securitization exposures is conducted primarily through avoidance of undue risk concentration on borrower, servicer and asset class levels. Any higher initial underwritings are de-risked to a final hold mandated in the credit approval mainly through syndication, or sales in the secondary market. Success of de-risking is monitored and reported regularly to senior management. Credit hedging requirements, if any, are mandated in the context of the individual credit approval. There is only very limited credit hedging activity in the banking book.

Furthermore, in the context of structuring securitization transactions, hedging usually takes place to insulate the special purpose entity (SPE) from interest rate and cross-currency risk – as far as required depending on the assets being included. When this hedging is provided by us, the related counterparty risk to the securitization structure is included in the Credit Risk Management review process and reported as part of the banking book exposure. If this hedging is not provided by us, it is largely conducted with large international financial institutions with strong financial condition. Please refer to the section "Credit risk management and asset quality" in our Annual Report 2020 on page 69 for detailed information on the credit risk management framework.

Management of trading book securitizations

The securitization desks incorporate hedges to mitigate credit and interest rate risks on the entire securitization portfolio. Duration and credit sensitivities (DV01s and CS01s) are the primary risk sensitivity measures used to calculate appropriate hedges. Some of the hedging products utilized include plain vanilla interest rate swaps, U.S. Treasury bonds and product specific liquid indices. The market risks of the hedges (both funded and unfunded) are incorporated and managed within our market risk management governance framework as described above; and, the counterparty risks of the hedges (both funded and unfunded), which are comprised primarily of major global financial institutions, are managed and approved through a formalized risk management process performed by Credit Risk Management.

For further details, please refer to section "Article 449 (c,f) CRR - Management of securitization positions, and risks in re-securitization activities" above in this Pillar 3 Report on page 170.

Article 449 (h) CRR - RWA calculation approaches for securitization positions

The approach for the calculation of the regulatory capital requirements for banking book and trading book securitization positions is prescribed by the European Capital Requirements Regulation (CRR).

In January 2019, Regulation (EU) 2017/2395 introduced changes to the methodology for determining RWAs for new securitizations originated on or after January 1, 2019 (the new securitization framework). All securitization transactions originated before this date remained subject to the rules introduced by CRR as applicable until December 31, 2018 (grandfathered securitization framework) and are subject to the new framework from January 1, 2020.

Calculation of regulatory capital requirements for banking book securitizations – grandfathered securitization framework

The grandfathered securitization framework determines the regulatory capital requirements for the credit risk of banking book securitizations pursuant to Articles 242 to 270 of the CRR as applicable until December 31, 2018, which distinguishes between credit risk standardized approach (CRSA)-securitization positions and internal ratings based approach (IRBA)-securitization positions. The classification of securitization positions as either CRSA- or IRBA-securitization positions depends on the nature of the securitized portfolio. Basically, CRSA-securitization positions are those where the securitized portfolio predominantly includes credit risk exposures, which would qualify as CRSA-exposures under the credit risk framework if they would be held by us directly. Otherwise, if the majority of the securitized portfolio would qualify as IRBA-exposures, the securitization positions qualify as IRBA-securitization positions.

The risk weights of CRSA-securitization positions are derived from their relevant external ratings, when applicable. External ratings must satisfy certain eligibility criteria for being used in the risk weight calculation. If more than one eligible rating is available for a specific securitization position, the relevant external rating is determined as the second best eligible rating in accordance with the provisions set forth in Article 269 CRR as applicable until December 31, 2018.

CRSA-securitization positions with no eligible external rating receive a risk weight of 1,250 % unless they qualify for the application of:

– the Internal Assessment Approach according to Article 259 (3) and (4) CRR as applicable until December 31, 2018. The Internal Assessment Approach applies to unrated securitization positions related to ABCP programs. As we ceased the use of ABCP programs in 2015, we no longer apply the Internal Assessment Approach.

- the risk concentration approach pursuant to Article 253 CRR as applicable until December 31, 2018 which might lead to a risk weight below 1,250 %. The risk concentration approach was applied to a few CRSA-securitization exposures that were small compared with the total amount of our banking book securitization exposures.

The risk weight of IRBA-securitization positions is determined according to the following hierarchy:

- If one or more eligible external ratings exist for the IRBA-securitization position, or if an external rating can be inferred from an eligible external rating of a benchmark securitization position, the risk weight is derived from the relevant external rating (ratings based approach).
- Otherwise, if no eligible external rating exists or can be inferred, the risk weight of the IRBA-securitization position will generally be determined based on the supervisory formula approach pursuant to Article 262 CRR as applicable until December 31, 2018 or the internal assessment approach pursuant to Article 259 (3) and (4) CRR as applicable until December 31, 2018.
- If neither of the aforementioned approaches can be applied, the position receives a risk weight of 1,250 %.

Calculation of regulatory capital requirements for banking book securitizations – new securitization framework

The new securitization framework determines the regulatory capital requirements for the credit risk of banking book securitizations pursuant to Articles 242 to 270e CRR, and distinguishes between the Securitization Internal Ratings-Based Approach (SEC-IRBA), the Securitization Standardized Approach (SEC-SA) and the Securitization External Ratings-Based Approach (SEC-ERBA). The new framework also introduces a specific framework for Simple, Transparent and Standardized (STS) securitizations. STS securitizations are defined in Regulation (EU) 2017/2402 and are subject to a beneficial capital treatment in the CRR.

The SEC-IRBA is applied for securitization positions, where at least 95 % of the securitized portfolio is in scope of an IRBA rating model and where sufficient information in relation to the securitized portfolio is available to calculate the risk-weighted exposure amounts under the IRB approach. Note that the ECB may preclude the application of the SEC-IRBA on a case-by-case basis as per Article 258 CRR. Currently, there are no securitization positions for which the ECB has precluded the application of the SEC-IRBA.

In general, the SEC-SA must be applied to all re-securitizations and for all securitizations for which the SEC-IRBA must not be applied, but the information required to apply the SEC-SA is available. Note, however, that instead of the SEC-SA, the SEC-ERBA must be applied for securitization positions with at least one eligible external rating or where a rating might be inferred:

- where the application of the SEC-SA would result in a risk weight higher than 25 %, or
- where – for positions not qualifying as positions in an STS securitization – the application of the SEC-ERBA would result in a risk weight higher than 75 %, or
- for securitization transactions backed by pools of auto loans, auto leases and equipment leases.

Where the SEC-SA may not be used, the SEC-ERBA must be applied for securitization positions with at least one eligible external rating or where an external rating can be inferred. External ratings must satisfy certain eligibility criteria for being used in the risk weight calculation. If more than one eligible rating is available for a specific securitization position, the relevant external rating is determined as the second best eligible rating in accordance with the provisions set forth in Article 270d CRR.

We do not make use of the option provided for in Article 254 (3) CRR to consistently apply the SEC-ERBA instead of the SEC-SA for all securitization positions for which an eligible external rating is available or for positions for which such a rating can be inferred.

In addition to the above approaches to determine capital requirements, Article 267 CRR introduces a risk weight cap for senior securitization positions based on the average risk weight of the securitized portfolio. Article 268 CRR introduces a maximum capital requirement for all securitization positions of a specific securitization transaction based on the capital requirement applicable to the securitized portfolio

Based on Article 254 (5) CRR, an Internal Assessment Approach may be applied for unrated positions in ABCP programs. As we ceased the use of ABCP programs in 2015, there are no securitizations positions subject to the Internal Assessment Approach as of December 31, 2020.

As of yearend 2020, the whole portfolio has been assessed based on the new securitization framework, due to the decommissioning of the grandfathered securitization framework. At yearend 2019 it was divided into 34 % under new securitization framework and 66 % under grandfathered securitization framework. Approved rating agencies include Standard & Poor's, Moody's, Fitch Ratings, DBRS Morningstar and Kroll.

Approximately 68% of the total banking book securitization exposure was subject to SEC-IRBA. This approach is predominantly used to rate positions backed by corporate loans, auto-related receivables and commercial real estate loans. The risk weight of securitization positions subject to the SEC-IRBA is determined based on a formula, which takes as input the capital requirement of the securitized portfolio and the seniority of the securitization position in the waterfall, amongst others. When applying the SEC-IRBA, we estimate the risk parameters PD and LGD for the assets included in the securitized portfolio, by using internally developed rating systems approved for such assets. The rating systems are based on historical default and loss information from comparable assets. The risk parameters PD and LGD are derived on risk pool level.

The SEC-ERBA applied to approximately 3 % of securitization exposure. The majority of securitization positions with an eligible external or inferred external credit assessment are securitization positions held as investor. The remaining 29 % of the portfolio was classified under SEC-SA. In total € 43 million or 0.07 % of securitization exposure were treated by getting directly a risk weight of 1,250 % assigned as none of the other approaches qualify.

Calculation of regulatory capital requirements for trading book securitizations

Overall, the regulatory capital requirements for the market risk of trading book securitizations consist of a general and specific market risk component. The capital requirement for the general market risk of trading book securitization positions is determined as the sum of (i) the value-at-risk based capital requirement for market risk and (ii) the stressed value-at-risk based capital requirement for market risk. The capital requirement for specific market risk is principally calculated based on the market risk standardized approach (MRSA) pursuant to Article 337 CRR.

As described above, the capital requirement for specific market risk is calculated based on the market risk standardized approach (MRSA). In 2019, the grandfathered securitization regulatory framework was applied to positions that were issued until December 31, 2018. Whereas the new regulatory framework was only applied in 2019 to non-grandfathered positions issued from January 1, 2019. From January 1, 2020, the new framework is applied to all securitization positions. For both frameworks, the MRSA risk weight for trading book securitization positions is generally calculated by using the same methodologies, which apply to banking book securitization positions. The only difference relates to the use of the SEC-IRBA for a small portion of trading book securitization positions, where the capital requirement of the securitized portfolio is determined by making use of risk parameters (probability of default and loss given default) that are based on the incremental risk charge model. The MRSA based capital requirement for specific risk is determined as the sum of the capital requirements for all net long and all net short securitization positions. The securitization positions included in the MRSA calculations for specific risk are additionally included in the value-at-risk and stressed value-at-risk calculations for general risk.

Trading book securitizations subject to MRSA treatment include various asset classes differentiated by the respective underlying collateral types:

- Residential mortgage backed securities (RMBS);
- Commercial mortgage backed securities (CMBS);
- Collateralized loan obligations (CLO);
- Collateralized debt obligations (CDO); and
- Asset backed securities (incl. credit cards, auto loans and leases, student loans, equipment loans and leases, dealer floorplan loans, etc.).

They also include synthetic credit derivatives and commonly-traded indices based on the above listed instruments.

Please refer to section "Article 455 (a)(i) CRR - Characteristics of the market risk models" on page 154 of this Pillar 3 report for general information on our market risk quantification approaches.

Article 449 (i) CRR - SSPEs related to institution

We occasionally use securitization SPEs to securitize third-party exposures in which we act as sponsor. In certain cases we also retain some of the securitized exposure. The majority (95 %) of our € 2.5 billion sponsor positions attracted a risk weight below or equal to 20 % in 2020. Most of these positions were secured by mortgages on residential properties.

When we act as originator or sponsor of a securitization transaction, we sell securitization tranches (or arrange for such sale through mandated market making institutions) solely on an "execution only" basis and only to sophisticated operative corporate clients that rely on their own risk assessment. In the ordinary course of business, we do not offer such tranches to operative corporate clients to which, at the same time, we offer investment advisory services.

Our division Asset Management ("AM") provides asset management services to undertakings for collective investments, including mutual funds and alternative investment funds, and private individuals offering access to traditional and alternative investments across all major asset classes, including securitization positions. Approximately 5 % of those positions consisted in 2020 of tranches in securitization transactions where Deutsche Bank acted as originator or sponsor.

Article 449 (j) CRR - Accounting policies for securitizations

Our accounting policies are included in our Annual Report 2020, specifically Note 1 "Significant accounting policies and critical accounting estimates" on page 240. The most relevant accounting policies for the securitization programs originated by us, and where we hold assets purchased with the intent to securitize, are "Principles of consolidation" on page 242, "Financial assets" on page 245-247 and "Financial liabilities" on page 248-249, "Derecognition of financial assets and liabilities" on page 254 and "Securitization" on page 254 (see also Note 13 "Financial instruments carried at fair value" on page 282). For measurement and quantification of both our banking and trading book securitizations, please refer to section "Article 449 (n) CRR - Banking and trading book securitization exposures" on page 175 further below in this report.

Article 449 (k) CRR - External rating agencies used for securitizations

According to Article 270 (d) CRR the Group has nominated the following list of External Credit Assessment Institutes (ECAIs), whose ratings are used in determining risk weights in line with Articles 263 and 264 CRR:

- DBRS Morningstar
- Fitch Ratings
- Kroll Bond Rating Agency
- Moody's Investors Service
- Standard & Poor's Ratings Services

Article 449 (l) CRR - Internal Assessment Approach

As the Group ceased the use of ABCP programs in 2015, there are no securitizations positions subject to the Internal Assessment Approach as of December 31, 2020. For a description of the RWA calculation approaches used for securitization positions please refer to the section "Article 449 (h) CRR - RWA calculation approaches for securitization positions" on page 172 in this Pillar 3 report.

Article 449 (m) CRR - Explanation of changes in quantitative disclosures

Explanations of significant changes in quantitative disclosures can be found above and below of the quantitative table in the securitization section if applicable.

Article 449 (n) CRR - Banking and trading book securitization exposures

(i) - Amount of outstanding exposures securitized

The amounts reported in the following tables provide details of our securitization exposures separately for the regulatory banking and trading book. The details of our trading book securitization positions subject to the market risk standardized approach (MRSA) are included in this chapter.

We are only exposed to credit or market risks related to the exposures securitized, as shown below, to the extent that we have retained or purchased any of the related securitization positions. The risk of the retained or purchased positions depends on the relative position in the payment waterfall structure of the securitization transaction. For disclosure purposes, we are deemed to be originator and additionally sponsor in case of multi-seller securitizations, which is reflected in the disclosure of the total outstanding exposures securitized in the sponsor column and our share of those exposures in the originator column.

The following table details the total banking book outstanding exposure split by exposure type, i.e., the overall pool size, we have securitized in our capacity as either originator or sponsor through traditional or synthetic securitization transactions. Within the originator columns the table provides information of the underlying securitized asset pool which was either originated from our balance sheet or acquired from third parties. The amounts reported are the principal notional amounts with the exception of on-balance sheet synthetic securitizations for which the aggregated securitized regulatory exposure values (EAD) are shown.

Of the € 28.8 billion total outstanding securitized exposure reported as of December 31, 2020 in the table below as originator, the amount retained was € 24.8 billion. For December 31, 2019 these exposures amounted to € 42.5 billion and € 35.1 billion respectively. The decrease was primarily driven by the switch in the calculation of the exposure value for retained positions in on-balance sheet synthetic transactions from the aggregate pool notional value to the aggregate pool EAD (see also further down in the section “Banking book securitization positions retained or purchased by risk weight band subject to the IRBA-Supervisory formula approach (SFA) and SEC-IRBA”).

For sponsor relationships, the total outstanding exposure securitized reported in the table below represents the principal notional amount of outstanding exposures of the entities issuing the securities and other receivables. As of December 31, 2020, the € 7.7 billion total outstanding exposure securitized shown in the sponsor columns included retained or re-purchased exposure of multi-seller transactions of € 4.1 billion. The remaining exposure was held by third parties. As of December 31, 2019, our total outstanding exposure securitized resulting from sponsoring activities amounted to € 6 billion. This included the retained or re-purchased exposure from multi-seller transactions in the amount of € 2.4 billion.

Outstanding exposures securitized by exposure type (overall pool size) within the banking book

				Dec 31, 2020				Dec 31, 2019
		Originator		Sponsor[1]		Originator		Sponsor[1]
in € m.	Traditional	Synthetic	Traditional	Synthetic	Traditional	Synthetic	Traditional	Synthetic
Residential mortgages	1,633	0	2,807	0	3,100	0	1,222	0
Commercial mortgages	2,444	0	4,064	0	3,097	0	4,765	0
Credit card receivables	0	0	0	0	0	0	0	0
Leasing	35	0	0	0	10	0	0	0
Loans to corporates or SMEs (treated as corporates)[2]	696	23,980	759	0	315	33,622	0	0
Consumer loans	0	0	85	0	0	0	0	0
Trade receivables	0	0	0	0	0	0	0	0
Covered bonds	0	0	0	0	0	0	0	0
Other liabilities	0	0	0	0	0	0	0	0
Other assets	0	0	0	0	0	2,348	0	0
Total outstanding exposures securitized[3]	**4,807**	**23,980**	**7,715**	**0**	6,521	35,970	5,987	0

[1] As of December 31, 2020 included under sponsor is the amount € 4.1 billion of multi-seller related securitized exposures, of which we have originated € 1.8 billion, and therefore have also included this amount under originator. For December 31, 2019 the amounts were € 4.7 billion and € 2.3 billion respectively.
[2] SMEs are small- or medium-sized enterprises.
[3] For a regulatory assessment of our exposure to credit risk in relation to securitization activity in the banking book see table “Banking book securitization positions retained or purchased by risk weight band”.
[4] Slight differences in values are due to rounding.

The table below provides the total outstanding exposure securitized in relation to securitization positions held in our regulatory trading book separately for originator and sponsor activities and further broken down into traditional and synthetic transactions. The total outstanding exposure securitized as shown in the table below does not reflect our risk as it includes exposures not retained by us, does not consider the different positioning in the waterfall of related positions and – most notably – does not reflect hedging.

The € 49 billion of total outstanding exposures securitized for Originator as of December 31, 2020 included the Deutsche Bank contributed amount of € 39.2 billion multi-seller related securitized exposures. The latter are included with the whole pool size of € 111.6 billion within the total € 113.2 billion of sponsor related activities. Further Originator contains € 10.3 billion and Sponsor € 19.4 billion of outstanding exposures, where we did not hold any position as of December 31, 2020 in addition to what 2019 has been reported.

Outstanding exposures securitized by exposure type (overall pool size) within the trading book

	Dec 31, 2020				Dec 31, 2019			
	Originator		Sponsor[1]		Originator		Sponsor[1]	
in € m.	Traditional	Synthetic	Traditional	Synthetic	Traditional	Synthetic	Traditional	Synthetic
Residential mortgages	2,618	0	1,745	0	1,118	0	1,699	0
Commercial mortgages	46,611	0	111,418	0	40,388	0	87,326	0
Credit card receivables	0	0	0	0	0	0	0	0
Leasing	0	0	0	0	0	0	0	0
Loans to corporates or SMEs (treated as corporates)[2]	0	0	0	0	97	0	0	0
Consumer loans	0	0	0	0	0	0	0	0
Trade receivables	0	0	0	0	0	0	0	0
Covered bonds	0	0	0	0	1	0	0	0
Other liabilities	0	0	0	0	0	0	0	0
Other assets	0	0	0	0	0	0	0	0
Total outstanding exposures securitized[3]	**49,230**	**0**	**113,162**	**0**	41,603	0	89,025	0

[1] As of December 31, 2020 included under sponsor is the amount € 111.6 billion of multi-seller related securitized exposures, of which we have originated € 39.2 billion, and therefore have also included this amount under originator. For December 31, 2019 the amounts were € 87.0 billion and € 31.9 billion respectively.
[2] SMEs are small- or medium-sized enterprises.
[3] For a regulatory assessment of our exposure to market risk in relation to securitization activity in the trading book see table "Trading book securitization positions retained or purchased by risk weight band subject to the MRSA".

(ii) - On balance sheet securitization retained or purchased, and off-balance sheet exposures

The table below shows the amount of the securitization positions retained or purchased in the banking and trading book. The reported amounts in the banking book are based on the regulatory exposure values after financial collateral usage and hedging but prior to the application of other credit risk mitigation techniques. The securitization positions in the regulatory trading book are reported based on the exposure definition in Articles 327 to 332 CRR which states that identical or closely matched securities and derivatives shall be offset to a net position. The capital requirements for securitization positions within the regulatory banking and trading book are additionally reported by the underlying exposure type.

Securitization positions retained or purchased by exposure type

	Dec 31, 2020									
	Banking Book					Trading Book				
in € m.	On-balance securi-tization positions	Off-balance, derivative and SFT securi-tization positions	Regulatory exposure value	of which ≥ 1,250% risk weighted	Capital require-ments	On-balance securi-tization positions	Off-balance, derivative and SFT securi-tization positions	Regulatory exposure value	of which 1,250% risk weighted	Capital require-ments
Residential mortgages	5,490	763	6,253	5	140	504	88	593	4	29
Commercial mortgages	589	213	802	1	29	243	665	909	10	29
Credit card receivables	341	536	877	0	20	28	0	28	0	2
Leasing	2,975	1,030	4,005	0	56	11	0	11	0	3
Loans to corporates or SMEs (treated as corporates)[1]	38,915	1,234	40,149	21	558	670	0	670	53	102
Consumer loans	4,692	2,229	6,920	0	109	129	0	129	0	7
Trade receivables	0	0	0	0	0	1	0	1	0	0
Covered bonds	0	0	0	0	0	0	0	0	0	0
Other liabilities	0	0	0	0	0	0	0	0	0	0
Other assets	970	149	1,120	20	52	156	7	163	0	22
Total securitization positions retained or purchased[2]	53,972	6,154	60,126	47	964	1,744	760	2,505	67	193

[1] SMEs are small- or medium-sized enterprises.
[2] For a regulatory assessment of our exposure to credit risk in relation to securitization activities see table "Banking book securitization positions retained or purchased by risk weight band" and for our exposure to market risk in relation to securitization activities see table "Trading book securitization positions retained or purchased by risk weight band subject to MRSA".

										Dec 31, 2019
					Banking Book					Trading Book
in € m.	On-balance securi-tization positions	Off-balance, derivative and SFT securi-tization positions	Regulatory exposure value	of which ≥ 1,250% risk weighted	Capital require-ments	On-balance securi-tization positions	Off-balance, derivative and SFT securi-tization positions	Regulatory exposure value	of which 1,250% risk weighted	Capital require-ments
Residential mortgages	5,244	63	5,307	42	151	464	417	880	99	33
Commercial mortgages	1,022	237	1,259	4	23	422	760	1,182	75	19
Credit card receivables	567	579	1,147	0	20	28	29	57	0	4
Leasing	3,894	903	4,797	0	62	12	4	16	0	1
Loans to corporates or SMEs (treated as corporates)[1]	52,124	948	53,073	44	462	746	201	947	74	55
Consumer loans	5,953	2,206	8,159	8	118	234	61	295	0	10
Trade receivables	0	0	0	0	0	0	0	0	0	0
Covered bonds	0	0	0	0	0	0	0	0	0	0
Other liabilities	0	0	0	0	0	0	0	0	0	0
Other assets	3,331	835	4,166	5	92	17	309	326	7	26
Total securitization positions retained or purchased[2]	72,136	5,772	77,908	103	929	1,922	1,781	3,703	255	147

1 SMEs are small- or medium-sized enterprises.
2 For a regulatory assessment of our exposure to credit risk in relation to securitization activities see table "Banking book securitization positions retained or purchased by risk weight band" and for our exposure to market risk in relation to securitization activities see table "Trading book securitization positions retained or purchased by risk weight band subject to MRSA".

Total retained or purchased securitization positions in the banking book decreased by € 17.8 billion or 23 % throughout the year 2020. The decrease was mainly driven by less securitization positions in the exposure class "Loans to corporates or SMEs (treated as corporates)". That again was caused mainly by the switch in calculation of the exposure value for retained positions in on-balance sheet synthetic transactions from the aggregate pool notional value to the aggregate pool EAD (see also further down in the section "Banking book securitization positions retained or purchased by risk weight band subject to the IRBA-Supervisory formula approach (SFA) and SEC-IRBA"). A decrease in the exposure class "Other assets" supported the overall development.

Capital requirements increased by 4 % to € 964 million mainly in the exposure class "Loans to corporates or SMEs (treated as corporates)" mainly due to the new Securitization Framework with a higher minimum risk weight, especially for senior securitization positions.

Within the trading book, the securitization exposure decreased by € 1.2 billion or 32 % basically across all exposure types due to active portfolio management triggered by the generally higher risk weights in the new securitization framework. Thus the capital requirement increased only by € 46 million or 31 % in 2020.

Securitization positions retained or purchased by region (exposure amount)

		Dec 31, 2020		Dec 31, 2019
in € m.	Banking Book	Trading Book	Banking Book	Trading Book
Europe	13,385	673	15,150	879
Americas	44,166	1,343	59,959	2,034
Asia/Pacific	2,576	489	2,785	785
Other	0	0	14	5
Total securitization positions retained or purchased[1]	**60,126**	**2,505**	77,908	3,703

1 For a regulatory assessment of our exposure to credit risk in relation to securitization activities see table "Banking book securitization positions retained or purchased by risk weight band" and for our exposure to market risk in relation to securitization activities see table "Trading book securitization positions retained or purchased by risk weight band subject to MRSA".

The amounts shown in the table above are based on the country of domicile of the obligors of the exposures securitized. In the banking book the exposure decreased mainly in the Americas. This is the dominant country of domicile of the obligors in the pools of the on-balance sheet synthetic securitization and therefore this decrease was driven by above mentioned switch in method for the exposure values (see section "Securitization positions retained or purchased by exposure type" above). In "Other" primarily those securitization positions are included where the pool of securitization consists of different countries and no country exceeds the 20 % threshold. The exposure reduction in the trading book across all regions was driven by the aforementioned active portfolio management.

(iii) - Amount of assets awaiting securitization

The following table provides details of existing banking and trading book outstanding exposures split by exposure type for which there is a management intention to securitize them in either an existing or new securitization transaction in the near future. Outstanding exposures awaiting securitization do not include assets due for securitization without risk transfer, e.g. those securitizations where we will keep all tranches.

Outstanding exposures awaiting securitization (exposure amount)

	Dec 31, 2020		Dec 31, 2019	
in € m.	Banking Book	Trading Book	Banking Book	Trading Book
Residential mortgages	0	0	0	0
Commercial mortgages	176	428	0	1,748
Credit card receivables	0	0	0	0
Leasing	0	0	0	0
Loans to corporates or SMEs (treated as corporates)[1]	1,000	0	1,783	0
Consumer loans	5,100	0	0	0
Trade receivables	0	0	0	0
Covered bonds	0	0	0	0
Other liabilities	0	0	0	0
Other assets	0	0	0	0
Outstanding exposures awaiting securitization	6,276	428	1,783	1,748

[1] SMEs are small- or medium-sized enterprises.

As of December 31, 2020 we held “commercial mortgages” of € 176 million in the banking book and € 428 million in the trading book and “loans to corporates or SMEs (treated as corporates)” of € 1 billion in the banking book. In addition we held “consumer loans” of € 5.1 billion in the banking book with the intention to securitize them.

(iv) - Early amortization treatment

There was no securitization position for which the operational requirements according to Article 246 CRR would have been applicable.

(v) - Deducted or 1,250 %-weighted securitization positions

Please refer for deducted or 1,250 % weighted securitization positions to the section “Article 449 (n)(ii) - On balance sheet securitization retained or purchased, and off-balance sheet exposures” within this Pillar 3 report on pages 177.

(vi) - Amount of exposures securitized and recognized gains or losses on sales

The 2020 year-end amounts in the tables below show an increase in our securitization activity in the banking book compared to 2019. The € 5.6 billion exposure originated via synthetic securitizations in 2020 are distributed amongst three transactions providing credit protection for “loans to corporates or SMEs (treated as corporates)”.

Securitization activity – Total outstanding exposures securitized (i.e., the underlying pools) by exposure type within the banking book

	Originator			Sponsor	
	Dec 31, 2020		2020	Dec 31, 2020	
in € m.	Traditional	Synthetic	Realized gains (losses) from sales/ liquidations	Traditional	Synthetic
Residential mortgages	0	0	0	42	0
Commercial mortgages	0	0	0	0	0
Credit card receivables	0	0	0	0	0
Leasing	0	0	0	0	0
Loans to corporates or SMEs (treated as corporates)[1]	0	5,562	0	0	0
Consumer loans	0	0	0	0	0
Trade receivables	0	0	0	0	0
Covered Bonds	0	0	0	0	0
Other liabilities	0	0	0	0	0
Other assets	0	0	0	0	0
Total Outstanding Exposures Securitized[2]	0	5,562	0	42	0

[1] SMEs are small- or medium-sized enterprises.
[2] For a regulatory assessment of our exposure to credit risk in relation to securitization activity in the banking book see table “Banking book securitization positions retained or purchased by risk weight band”.

	Originator			Sponsor	
	Dec 31, 2019		2019	Dec 31, 2019	
in € m.	Traditional	Synthetic	Realized gains (losses) from sales/ liquidations	Traditional	Synthetic
Residential mortgages	0	0	0	115	0
Commercial mortgages	390	0	3	0	0
Credit card receivables	0	0	0	0	0
Leasing	0	0	0	0	0
Loans to corporates or SMEs (treated as corporates)[1]	315	3,995	0	0	0
Consumer loans	0	0	0	0	0
Trade receivables	0	0	0	0	0
Covered Bonds	0	0	0	0	0
Other liabilities	0	0	0	0	0
Other assets	0	0	0	0	0
Total Outstanding Exposures Securitized[2]	705	3,995	3	115	0

[1] SMEs are small- or medium-sized enterprises.
[2] For a regulatory assessment of our exposure to credit risk in relation to securitization activity in the banking book see table “Banking book securitization positions retained or purchased by risk weight band”.

The table below shows our securitization activities in the trading book which decreased by 43 % to € 4.9 billion that was mainly influenced by the COVID-19-pandemic throughout the year 2020. The origination activity is also reflected in the sponsored exposure as we deem ourselves originator and additionally sponsor in case of multi-seller securitizations.

Securitization activity – Total outstanding exposures securitized by exposure type within the trading book

	Originator			Sponsor[1]	
	Dec 31, 2020		2020	Dec 31, 2020	
in € m.	Traditional	Synthetic	Realized gains (losses) from sales/ liquidations	Traditional	Synthetic
Residential mortgages	0	0	0	0	0
Commercial mortgages	4,938	0	169	14,448	0
Credit card receivables	0	0	0	0	0
Leasing	0	0	0	0	0
Loans to corporates or SMEs (treated as corporates)[2]	0	0	0	0	0
Consumer loans	0	0	0	0	0
Trade receivables	0	0	0	0	0
Covered Bonds	0	0	0	0	0
Other liabilities	0	0	0	0	0
Other assets	0	0	0	0	0
Total Outstanding Exposures Securitized[3]	4,938	0	169	14,448	0

[1] Included under sponsor is the amount € 14.4 billion exposures securitized, of which we originated € 3.8 billion, also included under originator.
[2] SMEs are small- or medium-sized enterprises.
[3] For a regulatory assessment of our exposure to market risk in relation to securitization activity in the trading book see table “Trading book securitization positions retained or purchased by risk weight band subject to the MRSA”.

	Originator			Sponsor[1]	
	Dec 31, 2019		2019	Dec 31, 2019	
in € m.	Traditional	Synthetic	Realized gains (losses) from sales/ liquidations	Traditional	Synthetic
Residential mortgages	427	0	1	0	0
Commercial mortgages	8,308	0	113	27,457	0
Credit card receivables	0	0	0	0	0
Leasing	0	0	0	0	0
Loans to corporates or SMEs (treated as corporates)[2]	0	0	0	0	0
Consumer loans	0	0	0	0	0
Trade receivables	0	0	0	0	0
Covered Bonds	0	0	0	0	0
Other liabilities	0	0	0	0	0
Other assets	0	0	0	0	0
Total Outstanding Exposures Securitized[3]	8,735	0	114	27,457	0

[1] Included under sponsor is the amount € 27.5 billion exposures securitized, of which we originated € 7.7 billion, also included under originator.
[2] SMEs are small- or medium-sized enterprises.
[3] For a regulatory assessment of our exposure to market risk in relation to securitization activity in the trading book see table “Trading book securitization positions retained or purchased by risk weight band subject to the MRSA”.

Article 449 (o)(i) CRR - Retained or purchased banking and trading book securitizations broken down by risk-weight bands

Banking book securitization exposure

The following table presents the retained or purchased banking book securitizations broken down by risk-weight bands.

Banking book securitization positions retained or purchased by risk weight band

	Dec 31, 2020			Jun 30, 2020		
in € m.	Exposure amount	Capital requirements IRBA[1]	Capital requirements standardized approach	Exposure amount	Capital requirements IRBA[1]	Capital requirements standardized approach
≤ 10 %	1,708	1	11	2,440	5	11
> 10 ≤ 20 %	50,555	425	187	63,226	601	195
> 20 ≤ 50 %	6,081	101	32	3,145	45	31
> 50 ≤ 100 %	1,165	13	63	750	3	54
> 100 ≤ 350 %	499	31	27	522	32	33
> 350 ≤ 650 %	14	0	4	60	14	4
> 650 < 1,250 %	56	16	6	101	70	7
≥ 1,250% ≤ 1,325 %	47	0	47	30	0	29
Total securitization positions retained or purchased	**60,126**	**587**	**377**	70,274	770	364

[1] After considering value adjustments according to Article 266 (1,2) CRR, including capital requirements for maturity mismatch of synthetic securitizations.

Overall the securitizations exposure in the banking book decreased by 14 % or € 10.1 billion to € 60.1 billion. The related capital requirements for these securitization positions decreased by 15 % to € 0.96 billion. This decrease was primarily driven by the reduction in the utilization of the underlying exposures of the on-balance sheet synthetic securitizations between June and December 2020. We saw an increase in utilization in the beginning of the year toward the end of the first quarter due to the COVID-19 pandemic, which extended through the summer and normalized by the end of the year. The decrease was also partially due to a net outflow of the on-balance sheet synthetic securitization transaction portfolio by € 2.2 billion exposure amount in 2020.

In the following sections we present the exposure values and capital requirements for retained and purchased securitization positions provided separately for each regulatory RWA calculation approach and broken down by risk weight bands. The tables provided for yearend 2020 show numbers only for the new approaches, as the grandfathered securitization framework ceased to apply from January 1, 2020. For comparison the tables provided for yearend 2019 are comprised of two elements – the grandfathered securitization framework elements (e.g. SFA) presented on the left hand side of the tables and the new securitization framework elements (e.g. SEC-IRBA approach) presented on the right hand side of the tables.

For the meaning of the names used in the following sections for the regulatory calculation approaches of the new framework (SEC-IRBA, SEC-SA and SEC-ERBA), please see section "Calculation of regulatory capital requirements for banking book securitizations – new securitization framework" above. For the names used for the calculation approaches of the grandfathered framework, see also that section and note the following abbreviations

- IRBA-SFA : Supervisory Formula Approach
- IRBA-RBA : Rating Based Approach with IRBA rating mappings to risk-weights
- CRSA-SEC : all approaches used in the grandfathered securitization framework under the SA approach

Banking book securitization positions retained or purchased by risk weight bands subject to the IRBA-Rating based approach (RBA) and SEC-ERBA

	Dec 31, 2020			
	SEC-ERBA[1]			
	Exposure amount		Capital requirements	
in € m.	Securiti-zation	Re-Securitization	Securiti-zation	Re-Securitization
≤ 10 %	1,154	0	9	0
> 10 ≤ 20 %	256	0	4	0
> 20 ≤ 50 %	76	0	2	0
> 50 ≤ 100 %	244	0	13	0
> 100 ≤ 350 %	205	0	25	0
> 350 ≤ 650 %	13	0	4	0
> 650 < 1,250 %	9	0	6	0
1,250 %	1	0	1	0
Total securitization positions retained or purchased	**1,957**	**0**	**64**	**0**

	Dec 31, 2019							
	IRBA-RBA[1]				SEC-ERBA			
	Exposure amount		Capital requirements		Exposure amount		Capital requirements	
in € m.	Securiti-zation	Re-Securitization	Securiti-zation	Re-Securitization	Securiti-zation	Re-Securitization	Securiti-zation	Re-Securitization
≤ 10 %	974	0	12	0	157	0	1	0
> 10 ≤ 20 %	237	0	2	0	227	0	4	0
> 20 ≤ 50 %	650	0	18	0	19	0	0	0
> 50 ≤ 100 %	114	0	6	0	590	0	37	0
> 100 ≤ 350 %	8	0	1	0	39	0	7	0
> 350 ≤ 650 %	1	0	0	0	0	0	0	0
> 650 < 1,250 %	7	0	4	0	0	0	0	0
≥ 1,250% ≤ 1,325 %	75	4	77	4	0	0	0	0
Total securitization positions retained or purchased	2,067	4	122	4	1,033	0	49	0

[1] After considering value adjustments according to Article 266 (1,2) CRR.

Securitization exposures subject to SEC-ERBA in 2020 decreased by 37 % or € 1.1 billion compared to positions subject to the IRBA-RBA and the SEC-ERBA as of December 31, 2019. This was mainly driven by the hierarchy of methods in the new securitization framework, which prescribes to use SEC-SA instead of SEC-ERBA where applicable according to Article 254 CRR. The capital requirement has decreased by 63 % from € 175 million to € 64 million, which is more than the corresponding movements in exposures, and is explained by a significant reduction in exposure attracting a 1,250 % risk-weight in SEC-ERBA due to active portfolio management.

Banking book securitization positions retained or purchased by risk weight band subject to the IRBA-Supervisory formula approach (SFA) and SEC-IRBA

	Dec 31, 2020			
	SEC-IRBA[1]			
	Exposure amount		Capital requirements	
in € m.	Securiti-zation	Re-Securitization	Securiti-zation	Re-Securitization
≤ 10 %	355	0	1	0
> 10 ≤ 20 %	35,111	0	425	0
> 20 ≤ 50 %	4,740	0	101	0
> 50 ≤ 100 %	292	0	13	0
> 100 ≤ 350 %	275	0	31	0
> 350 ≤ 650 %	1	0	0	0
> 650 < 1,250 %	47	0	16	0
1,250 %	1	0	0	0
Total securitization positions retained or purchased	**40,821**	**0**	**587**	**0**

Dec 31, 2019

in € m.	IRBA-SFA[1] Exposure amount Securiti-zation	IRBA-SFA[1] Exposure amount Re-Securitization	IRBA-SFA[1] Capital requirements Securiti-zation	IRBA-SFA[1] Capital requirements Re-Securitization	SEC-IRBA Exposure amount Securiti-zation	SEC-IRBA Exposure amount Re-Securitization	SEC-IRBA Capital requirements Securiti-zation	SEC-IRBA Capital requirements Re-Securitization
≤ 10 %	48,448	0	290	0	1,404	0	9	0
> 10 ≤ 20 %	194	0	2	0	14,056	0	169	0
> 20 ≤ 50 %	13	0	0	0	737	0	21	0
> 50 ≤ 100 %	57	0	3	0	290	0	23	0
> 100 ≤ 350 %	50	3	8	0	66	0	9	0
> 350 ≤ 650 %	41	0	14	0	0	0	0	0
> 650 < 1,250 %	0	0	0	0	0	0	0	0
1,250 %	6	0	6	0	0	0	0	0
Total securitization positions retained or purchased	**48,810**	**3**	**324**	**0**	16,553	0	230	0

[1] After considering value adjustments according to Article 266 (1,2) CRR.
[2] Including capital requirements for maturity mismatch of synthetic securitizations by risk weight band defined as notional weighted average risk weight of the underlying pool.

Banking Book exposure subject to the new SEC-IRBA decreased strongly in 2020 compared to the application of the IRBA-SFA or SEC-IRBA in 2019. The decrease of 37 % or € 24.5 billion of exposure was driven by four causes. The first cause was the change in method hierarchy in the new securitization framework, shifting around € 8 billion exposure from IRBA-SFA to SEC-SA (see corresponding increase in SEC-SA further down). The second cause was the change of the basis for determining the exposure value from aggregate notional value to aggregate EAD of the underlying pools in own synthetic transactions, thereby reducing the exposure value by around € 8 billion, effective by March 2020. The third cause were the in- and outflows in the own synthetic portfolio with a net effect of € 2.2 billion and finally the fourth cause was the reduction in the usage of limits as described in section "Banking book securitization exposure" above. The capital requirements slightly increased by 6 % or € 33 million, reflecting the change of the risk-weight floor from 7 % (IRBA-SFA) to 15 % (general risk-weight floor in the new framework).

Banking book securitization positions retained or purchased by risk weight band subject to the credit risk standardized approach (CRSA) and SEC-SA

Dec 31, 2020

in € m.	SEC-SA Exposure amount Securiti-zation	SEC-SA Exposure amount Re-Securitization	SEC-SA Capital requirements Securiti-zation	SEC-SA Capital requirements Re-Securitization
≤ 10 %	199	0	2	0
> 10 ≤ 20 %	15,188	0	183	0
> 20 ≤ 50 %	1,266	0	29	0
> 50 ≤ 100 %	629	0	50	0
> 100 ≤ 350 %	20	0	2	0
> 350 ≤ 650 %	0	0	0	0
> 650 < 1,250 %	1	0	1	0
1,250 %	3	0	3	0
Total securitization positions retained or purchased	**17,305**	**0**	**270**	**0**

Dec 31, 2019

in € m.	CRSA Exposure amount Securiti-zation	CRSA Exposure amount Re-Securitization	CRSA Capital requirements Securiti-zation	CRSA Capital requirements Re-Securitization	SEC-SA Exposure amount Securiti-zation	SEC-SA Exposure amount Re-Securitization	SEC-SA Capital requirements Securiti-zation	SEC-SA Capital requirements Re-Securitization
≤ 10 %	0	0	0	0	0	0	0	0
> 10 ≤ 20 %	362	0	6	0	7,111	0	87	0
> 20 ≤ 50 %	73	0	3	0	1,278	0	29	0
> 50 ≤ 100 %	27	0	2	0	261	0	17	0
> 100 ≤ 350 %	93	1	11	0	210	0	25	0
> 350 ≤ 650 %	4	0	1	0	0	0	0	0
> 650 < 1,250 %	0	0	0	0	0	0	0	0
1,250 %	15	0	15	0	3	0	3	0
Total securitization positions retained or purchased	**574**	**1**	**38**	**0**	8,863	0	161	0

Exposure subject to SEC-SA increased in 2020 by 83 % or € 7.9 billion compared to exposures subject to CRSA or SEC-SA in 2019, mainly because exposures formerly treated under IRBA-SFA are not eligible for the SEC-IRBA anymore. This was triggered by the stricter criterion for applying SEC-IRBA, which requires a pool consisting of at least 95 % of the assets' EAD treated by the IRB approach. Accordingly also the capital requirements rose by 36 % from € 199 million to € 270 million. The disproportionally lower increase in capital requirements compared with the increase in exposure treated under the SEC-SA reflects that the move from IRBA-SFA to SEC-SA primarily targeted the 10 % to 20 % risk-weight band where exposure increased by € 8 billion and the capital requirement by € 96 billion.

Trading book securitization exposure

The following table presents the retained or purchased trading book securitizations and re-securitizations broken down by risk-weight bands.

For trading book securitization positions the capital requirement for specific market risk is calculated based on the market risk standardized approach (MRSA). The MRSA risk weight calculation for trading book securitization positions is generally based on the same methodologies which apply to banking book securitization positions. More details on the approaches are provided in section “Article 449 (h) CRR - RWA calculation approaches for securitization positions” on page 172 in our annual Pillar 3 Report 2020.

Trading book securitization positions retained or purchased by risk weight band subject to the market risk standardized approach (MRSA)

	Dec 31, 2020				Jun 30, 2020			
	Exposure amount		Capital requirements, MRSA		Exposure amount		Capital requirements, MRSA	
in € m.	Securitization	Re-Securitization	Securitization	Re-Securitization	Securitization	Re-Securitization	Securitization	Re-Securitization
≤ 10 %	112	0	0	0	121	0	0	0
> 10 ≤ 20 %	1,352	0	16	0	1,954	0	26	0
> 20 ≤ 50 %	172	0	5	0	246	0	8	0
> 50 ≤ 100 %	275	0	15	0	269	0	14	0
> 100 ≤ 350 %	353	0	43	0	368	0	46	0
> 350 ≤ 650 %	108	0	25	0	167	1	43	0
> 650 < 1,250 %	66	0	33	0	31	0	14	0
1,250 %	67	0	55	0	245	0	46	0
Total securitization positions retained or purchased	**2,504**	**0**	**193**	**0**	3,401	1	197	0

Compared to June 2020, the exposure of trading book securitization and re-securitization positions decreased by € 897 million or 26 % to € 2.5 billion, while the capital requirements decreased only slightly by € 4 million or 2 % to € 193 million. This can be explained by two major movements in four risk buckets. Firstly, due to net outflows in the risk bucket >350 ≤ 650 % and net inflows in the risk bucket > 650 < 1,250 %, the overall capital requirements for those two buckets together only decreased by € 1 million in capital requirements and € 23 million in exposure amount. Secondly, the decrease of € 602 million exposure amount in risk bucket > 10 ≤ 20 % triggering a decrease of € 10 million in capital requirements, is balanced by the decrease in exposure amount of € 178 million in the risk bucket 1,250 %, though showing a € 9 million increase in capital requirements. The latter is based on the fact, that less positions profited from the own funds requirement cap of Article 335 CRR and thus attracted higher capital requirements compared to June 2020.

For 1 % of the securitization positions the own funds requirement cap of Article 335 CRR was applied, which resulted in a capital requirement saving of € 521 million, which was realized mainly in the 1,250 % risk weight bucket.

Article 449 (o)(ii) CRR - Retained or purchased re-securitization exposures for banking and trading book

In 2020 re-securitization positions dropped to immaterial levels. Exposure to re-securitization will in future not be increased and will strategically vanish from the portfolio in total.

Re-securitization positions retained or purchased (exposure amount)

	Dec 31, 2020				Dec 31, 2019			
	Banking Book		Trading Book		Banking Book		Trading Book	
in € m.	Before hedging/ insurances	After hedging/ insurances	Before hedging/ insurances	After hedging/ insurances	Before hedging/ insurances	After hedging/ insurances	Before hedging/ insurances	After hedging/ insurances
Re-Securitization Positions	1	1	0	0	8	8	2	2

Risk mitigation in the form of financial guarantees was not applied to our re-securitization positions in neither the banking nor the trading book.

Article 449 (p) CRR - Impaired assets and recognized losses related to banking book securitizations

The Group has aligned its definition of “credit impaired” under IFRS 9 to the default definition as per Art. 178 of the Capital Requirements Regulation (CRR) for regulatory purposes. As a consequence, Stage 3 Financial Assets consist of two types of defaulted financial assets: firstly financial assets, where the Group expects an impairment loss reflected in an allowance for credit losses and secondly financial assets, where the group does not expect an impairment loss (e.g., due to high quality collateral or sufficient expected future cash flows following thorough due diligence).

The following table provides details of the quality of the underlying asset pool of outstanding exposures securitized for which we are an originator and hold positions in the regulatory banking book. An exposure is reported as past due when it has the status past due for 30 days or more and has not already been included as impaired. For our originated synthetic securitizations, impaired and past due exposure amounts are determined through our internal administration, while for our originated traditional securitizations, impaired and past due exposure amounts are primarily derived from investor reports of underlying exposures.

Separately, the table details losses we recognized in 2020 and 2019 for retained or purchased securitization positions as originator by exposure type. The losses are those reported in the consolidated statement of income. The amounts are the actual losses in the underlying asset pool to the extent that these losses are allocated to the retained or purchased securitization positions held by us after considering any eligible credit protection. This applies to both traditional and synthetic transactions.

Impaired and past due exposures securitized and losses recognized by exposure type (overall pool size) as originator

	Dec 31, 2020	2020	Dec 31, 2019	2019
in € m.	Impaired/ past due[1]	Losses	Impaired/ past due[1]	Losses
Residential mortgages	0	0	0	0
Commercial mortgages	0	0	0	0
Credit card receivables	0	0	0	0
Leasing	0	0	0	0
Loans to corporates or SMEs (treated as corporates)[2]	187	2	45	0
Consumer loans	0	0	0	0
Trade receivables	0	0	0	0
Covered bonds	0	0	0	0
Other liabilities	0	0	0	0
Other assets	0	0	0	0
Total impaired and past due exposures securitized and losses recognized[3]	**187**	**2**	45	0

[1] Includes the impaired and past due exposures in relation to the overall pool of multi-seller securitizations which could reflect more than our own originated portion.
[2] SMEs are small- or medium-sized entities.
[3] For a regulatory assessment of our exposure to credit risk in relation to securitization activity in the banking book see table “Banking Book Securitization Positions Retained or Purchased by Risk Weight Band”.

The total impaired or past due exposure securitized increased to € 187 million in 2020 compared to € 45 million in 2019. Losses recorded by us in 2020 increased to € 1.8 million from € 0.2 million in 2019.

Article 449 (q) CRR - Trading book securitization positions

Please refer for details about the trading book securitization exposures to the section “Article 449 (n) CRR - Banking and trading book securitization exposures” in this Pillar 3 report on page 175.

Article 449 (r) CRR - Financial support to securitization vehicles

We have not provided any implicit support to our securitization vehicles.

Remuneration policy (Article 450 CRR)

For details please refer to the section “Compensation Report” in our Annual Report 2020 on the pages 166 - 213.

Leverage (Article 451 CRR)

We manage our balance sheet on a Group level and, where applicable, locally in each region. In the allocation of financial resources we favor business portfolios with the highest positive impact on our profitability and shareholder value. We monitor and analyze balance sheet developments and track certain market-observed balance sheet ratios. Based on this we trigger discussion and management action by the Group Risk Committee (GRC).

Leverage Ratio according to CRR/CRD framework

The non-risk based leverage ratio is intended to act as a supplementary measure to the risk based capital requirements. Its objectives are to constrain the build-up of leverage in the banking sector, helping avoid destabilizing deleveraging processes which can damage the broader financial system and the economy, and to reinforce the risk based requirements with a simple, non-risk based "backstop" measure.

A minimum leverage ratio requirement of 3 % was introduced that will be effective starting June 28, 2021. From January 1, 2023 an additional leverage ratio buffer requirement of 50 % of the applicable G-SIB buffer rate will apply. It is currently expected that this additional requirement will equal 0.75 %.

We calculate our leverage ratio exposure in accordance with Article 429 of the CRR as per Delegated Regulation (EU) 2015/62 of October 10, 2014 published in the Official Journal of the European Union on January 17, 2015 and amended by Regulation (EU) 2020/873 published in the Official Journal of the European Union on June 24, 2020.

Our total leverage ratio exposure includes derivatives, securities financing transactions (SFTs), off-balance sheet exposure and other on-balance sheet exposure (excluding derivatives and SFTs).

The leverage exposure for derivatives is calculated by using the regulatory mark-to-market method for derivatives comprising the current replacement cost plus a regulatory defined add-on for the potential future exposure. Variation margin received in cash from counterparties is deducted from the current replacement cost portion of the leverage ratio exposure measure and variation margin paid to counterparties is deducted from the leverage ratio exposure measure related to receivables recognized as an asset on the balance sheet, provided certain conditions are met. Deductions of receivables for cash variation margin provided in derivatives transactions are shown under derivative exposure in the table "Leverage ratio common disclosure" below. The effective notional amount of written credit derivatives, i.e., the notional reduced by any negative fair value changes that have been incorporated in Tier 1 capital is included in the leverage ratio exposure measure; the resulting exposure measure is further reduced by the effective notional amount of purchased credit derivative protection on the same reference name provided certain conditions are met.

The securities financing transaction (SFT) component includes the gross receivables for SFTs, which are netted with SFT payables if specific conditions are met. In addition to the gross exposure a regulatory add-on for the counterparty credit risk is included.

The off-balance sheet exposure component follows the credit risk conversion factors (CCF) of the standardized approach for credit risk (0 %, 20 %, 50 %, or 100 %), which depend on the risk category subject to a floor of 10 %.

The on-balance sheet exposures (excluding derivatives and SFTs) component reflects the accounting values of the assets (excluding derivatives, SFTs and regular-way purchases and sales awaiting settlement) as well as regulatory adjustments for asset amounts deducted in determining Tier 1 capital. The exposure value of regular-way purchases and sales awaiting settlement is determined as offset between those cash receivables and cash payables where the related regular-way sales and purchases are both settlement on a delivery-versus payment basis.

The Group excludes certain Euro-based exposures to Eurosystem central banks from the leverage exposure having obtained permission from the European Central Bank in accordance with ECB's Decision (EU) 2020/1306. This temporary exclusion was firstly introduced in the third quarter of 2020 and currently applies until June 27, 2021.

The following tables show the leverage ratio exposure and the leverage ratio. The Leverage ratio common disclosure table provides the leverage ratio on a fully-loaded and phase-in basis with the fully-loaded and phase-in Tier 1 Capital, respectively, in the numerator. For further details on Tier 1 capital please also refer to the "Regulatory capital composition, prudential filters and deduction items" section in chapter "Own funds" on page 111 in this report.

Summary reconciliation of accounting assets and leverage ratio exposures

in € bn. (unless stated otherwise)	Dec 31, 2020	Jun 30, 2020
Total assets as per published financial statements	**1,325**	1,407
Adjustment for entities which are consolidated for accounting purposes but are outside the scope of regulatory consolidation	1	0
(Adjustment for fiduciary 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)	N/M	N/M
Adjustments for derivative financial instruments	(206)	(230)
Adjustment for securities financing transactions (SFTs)	10	8
Adjustment for off-balance sheet items (i.e. conversion to credit equivalent amounts of off-balance sheet exposures)	101	97
(Adjustment for intragroup exposures excluded from the leverage ratio total exposure measure in accordance with Article 429(7) of Regulation (EU) No 575/2013)	N/M	N/M
(Adjustment for exposures excluded from the leverage ratio total exposure measure in accordance with Article 429(14) of Regulation (EU) No 575/2013)	N/M	N/M
Other adjustments	(153)	(90)
Leverage ratio total exposure measure	**1,078**	1,192

N/M – Not meaningful

Leverage ratio common disclosure

in € bn. (unless stated otherwise)	Dec 31, 2020	Jun 30, 2020
On-balance sheet exposures (excluding derivatives and SFTs)		
On-balance sheet items (excluding derivatives, SFTs and fiduciary assets, but including collateral)	803	919
(Asset amounts deducted in determining Tier 1 capital)	(8)	(10)
Total on-balance sheet exposures (excluding derivatives, SFTs and fiduciary assets)	**795**	909
Derivative exposures		
Replacement cost associated with all derivatives transactions (i.e. net of eligible cash variation margin)	40	38
Add-on amounts for PFE associated with all derivatives transactions (mark-to-market method)	97	108
Exposure determined under Original Exposure Method	N/M	N/M
Gross-up for derivatives collateral provided where deducted from the balance sheet assets pursuant to the applicable accounting framework	0	0
(Deductions of receivables assets for cash variation margin provided in derivatives transactions)	(42)	(45)
(Exempted CCP leg of client-cleared trade exposures)	(6)	(8)
Adjusted effective notional amount of written credit derivatives	375	440
(Adjusted effective notional offsets and add-on deductions for written credit derivatives)	(366)	(431)
Total derivatives exposures	**99**	102
SFT exposures		
Gross SFT assets (with no recognition of netting), after adjusting for sales accounting transactions	151	157
(Netted amounts of cash payables and cash receivables of gross SFT assets)	(75)	(77)
Counterparty credit risk exposure for SFT assets	6	4
Derogation for SFTs: Counterparty credit risk exposure in accordance with Articles 429b(4) and 222 of Regulation (EU) No 575/2013	N/M	N/M
Agent transaction exposures	0	0
(Exempted CCP leg of client-cleared SFT exposure)	0	0
Total securities financing transaction exposures	**83**	85
Other off-balance sheet exposures		
Off-balance sheet exposures at gross notional amount	283	269
(Adjustments for conversion to credit equivalent amounts)	(182)	(173)
Other off-balance sheet exposures	**101**	97
Exempted exposures in accordance with Article 429 (7) and (14) of Regulation (EU) No 575/2013 (on and off balance sheet)		
(Intragroup exposures (solo basis) exempted in accordance with Article 429(7) of Regulation (EU) No 575/2013 (on and off balance sheet))	N/M	N/M
(Exposures exempted in accordance with Article 429 (14) of Regulation (EU) No 575/2013 (on and off balance sheet))	N/M	N/M
Capital and total exposure measure		
Tier 1 capital (fully loaded)	50.6	49.6
Leverage ratio total exposure measure	1,078	1,192
Leverage ratio (fully loaded, in %)	4.7	4.2
Tier 1 capital (phase-in)	51.7	50.7
Leverage ratio total exposure measure	1,078	1,192
Leverage ratio (phase-in, in %)	4.8	4.3

N/M – Not meaningful

Breakdown of on-balance sheet exposures (excluding derivatives and SFTs)

in € bn. (unless stated otherwise)	Dec 31, 2020	Jun 30, 2020
Total on-balance sheet exposures (excluding derivatives, SFTs, and exempted exposures)	**803**	919
of which:		
Trading book exposures	162	180
Banking book exposures	641	739
of which:		
Covered bonds	0	1
Exposures treated as sovereigns	148	226
Exposures to regional governments, MDB, international organizations and PSE not treated as sovereigns	1	1
Institutions	14	15
Secured by mortgages of immovable properties	209	210
Retail exposures	33	33
Corporate	171	183
Exposures in default	10	9
Other exposures (e.g. equity, securitizations, and other non-credit obligation assets)	54	61

Process used to manage the risk of excessive leverage

As described in the section “Risk management principles” and “Risk governance” on pages 58-61 of our Annual Report 2020, the Group Risk Committee (GRC) is mandated to oversee, control and monitor integrated planning our risk profile and capital capacity. The Group Asset and Liability Committee (ALCO) actively manages leverage exposure capacity within the Risk Appetite Framework via a limit setting process

– to allocate group leverage exposure capacity to businesses,
– to support business achievement of strategic performance plans,
– to provide a firm basis for achieving the target leverage ratio,
– to incentivize businesses to make appropriate decisions on their portfolios, with consideration to asset maturity and encumbrance amongst others, and
– to maintain risk discipline.

In the case of limit excess the respective business is charged. The limit excess charges are calculated in accordance with the Group-wide limit-setting framework for leverage.

For further details please also refer to the “Capital management” section contained in chapter “Risk and capital management” on page 58 of our Annual Report 2020.

Factors that had an impact on the leverage ratio in the second half of 2020

As of December 31, 2020, our fully loaded leverage ratio was 4.7 % compared to 4.2 % as of June 30, 2020. This takes, into account a fully loaded Tier 1 capital of € 50.6 billion over an applicable exposure measure of € 1,078 billion as of December 31, 2020 (€ 49.6 billion and € 1,192 billion as of June 30, 2020, respectively).

Our leverage ratio according to transitional provisions was 4.8 % as of December 31, 2020 (4.3 % as of June 30, 2020), calculated as Tier 1 capital according to transitional rules of € 51.7 billion over an applicable exposure measure of € 1,078 billion (€ 50.7 billion and € 1,192 billion as of June 30, 2020, respectively).

In the second half of 2020, our leverage exposure decreased by € 114 billion to € 1,078 billion, mainly driven by the application of the “quick fix” amendment of the CRR (Regulation (EU) 2020/873, Article 500b) implemented by ECB-Decision (EU) 2020/1306, allowing the temporary exclusion of certain central bank exposures contributing a reduction of € 85 billion. Without this temporary exclusion, our Leverage exposure decreased by € 29 billion in the second half of 2020, primarily reflecting the development of our balance sheet: decreases in Non-derivative trading assets by € 11 billion, Loans by € 10 billion, SFT-related items (Securities purchased under resale agreements, Securities borrowed and Receivables from prime brokerage) by € 2 billion and Cash and central bank/interbank balances by € 1 billion. The remaining asset items decreased by € 16 billion, largely related to Held-to-collect debt securities. Pending settlements, which are reflected in the leverage exposure on a net basis since 30. June 2020 following the “quick fix” amendment of the CRR (Regulation (EU) 2020/873, Article 500d), decreased by € 2 billion. This was partly offset by Financial assets at fair value through OCI which grew by € 9 billion. Furthermore, the leverage exposure related to derivatives decreased by € 2 billion (€ 6 billion excluding deductions of receivables assets for cash variation margin provided in derivatives transactions) mainly from lower add-ons for potential future exposure. Off-balance sheet exposures increased by € 5 billion corresponding to higher notional amounts for irrevocable lending commitments.

The decrease in leverage exposure in the second half of 2020 included a negative foreign exchange impact of € 35 billion mainly due to the strengthening of the Euro against the U.S. dollar. The effects from foreign exchange rate movements are embedded in the movement of the leverage exposure items discussed in this section.

For main drivers of the Tier 1 capital development please refer to section “Own funds” on page 25 in this report.

Unencumbered assets (Article 443 CRR)

On March 3, 2017 the EBA published the final guidelines on the disclosure of encumbered and unencumbered assets as mandated by Article 443 CRR.

In accordance to the guideline the data uses the median of the last four quarterly data points. Therefore, the sum of sub-components does not necessarily add up.

Encumbered assets primarily comprise those on- and off-balance sheet assets that are pledged as collateral against secured funding, collateral swaps, and other collateralized obligations. Additionally, in line with the EBA technical standards on regulatory asset encumbrance reporting, we consider default funds and initial margins as encumbered, as well as other assets pledged which cannot be freely withdrawn such as mandatory minimum reserves at central banks. We also include derivative margin receivable assets as encumbered under these EBA guidelines.

This section refers to asset encumbrance in the group of institutions consolidated for banking regulatory purposes pursuant to the German Banking Act. There under not included are insurance companies or companies outside the finance sector. Assets pledged by our insurance subsidiaries are included in the Annual Report 2020 in Note 20 “Transfer of financial assets, assets pledged and received as collateral” on page 305, and restricted assets held to satisfy obligations to insurance companies’ policy holders are included within Note 37 “Information on subsidiaries” on page 355 of the Annual Report 2020.

The below tables set out a breakdown of on- and off-balance sheet items, broken down between encumbered and unencumbered. Any securities borrowed or purchased under resale agreements are shown based on the fair value of collateral received. Following the European Commission’s disclosure guidance for asset encumbrance we have introduced the asset quality indicator concept “high-quality liquid assets” (HQLA) as defined under the Delegated Act on Liquidity Coverage Ratio for the first time on June 30, 2019.

For December 2020, € 227.5 billion of the Group's on-balance sheet assets were encumbered. These assets primarily relate to firm financing of trading inventory and other securities, funding (i.e. Pfandbriefe and covered bonds) secured against loan collateral and cash collateral for derivative margin requirements.

For December 2020, the Group had received securities as collateral with a fair value of € 241.1 billion, of which € 205.1 billion were sold or on pledged. These pledges typically relate to trades to facilitate client activity, including prime brokerage, collateral posted in respect of Exchange Traded Funds and derivative margin requirements.

‘Own debt securities issued other than covered bonds and asset backed securities’ refers to those own bond holdings that are not derecognized from the balance sheet by a non-IFRS institution. This is not applicable for Deutsche Bank Group.

EU AE1 – Encumbered and unencumbered assets

									Dec 31, 2020
		010	030	040	050	060	080	090	100
		Encumbered assets				Unencumbered assets			
		Carrying amount		Fair value		Carrying amount		Fair value	
	in € bn.		of which notionally eligible EHQLA and HQLA		of which notionally eligible EHQLA and HQLA		of which EHQLA and HQLA		of which EHQLA and HQLA
030	Equity instruments	6.5	3.6	–	–	6.7	1.2	–	–
040	Debt securities	61.5	52.8	61.5	52.8	95.2	67.4	95.2	67.4
	of which:								
050	Covered bonds	2.0	0.7	2.0	0.7	4.2	4.6	4.2	4.6
060	Asset-backed securities	2.4	1.1	2.4	1.1	5.1	1.3	5.1	1.3
070	Issued by general governments	51.2	47.8	51.2	47.8	62.7	59.7	62.7	59.7
080	Issued by financial corporations	7.5	2.4	7.5	2.4	21.0	6.0	21.0	6.0
090	Issued by non-financial corporations	2.8	1.1	2.8	1.1	11.2	0.5	11.2	0.5
120	Other assets	156.5	12.5	–	–	1,110.9	143.1	–	–
121	of which:								
122	Loans other than loans on demand	83.0	0	–	–	367.9	0	–	–
123	Securities purchased under resale agreements and securities borrowed	0	0	–	–	77.5	0	–	–
124	Cash margin receivables / prime brokerage receivables	59.0	0	–	–	5.4	0	–	–
010	Total	227.5	69.3	–	–	1,169.6	209.8	–	–

									Jun 30, 2020
		010	030	040	050	060	080	090	100
		Encumbered assets				Unencumbered assets			
		Carrying amount		Fair value		Carrying amount		Fair value	
	in € bn.		of which notionally eligible EHQLA and HQLA		of which notionally eligible EHQLA and HQLA		of which EHQLA and HQLA		of which EHQLA and HQLA
030	Equity instruments	7.8	4.9	–	–	9.5	2.1	–	–
040	Debt securities	60.3	50.4	60.3	50.4	104.9	69.4	104.9	69.4
	of which:								
050	Covered bonds	0.7	0.5	0.7	0.5	3.7	3.3	3.7	3.3
060	Asset-backed securities	2.0	0.6	2.0	0.6	5.1	1.0	5.1	1.0
070	Issued by general governments	48.2	46.6	48.2	46.6	64.2	60.5	64.2	60.5
080	Issued by financial corporations	7.9	2.4	7.9	2.4	27.0	5.5	27.0	5.5
090	Issued by non-financial corporations	3.0	1.1	3.0	1.1	12.2	0.7	12.2	0.7
120	Other assets	152.9	11.9	–	–	1,100.7	129.1	–	–
121	of which:								
122	Loans other than loans on demand	79.0	0	–	–	380.1	0	–	–
123	Securities purchased under resale agreements and securities borrowed	0	0	–	–	81.2	0	–	–
124	Cash margin receivables / prime brokerage receivables	59.4	0	–	–	6.3	0	–	–
010	Total	225.3	69.3	–	–	1,221.9	198.8	–	–

EU AE2 – Collateral received

					Dec 31, 2020
		010	030	040	060
				Unencumbered	
		Fair value of encumbered collateral received or own debt securities issued		Fair value of collateral received or own debt securities issued available for encumbrance	
	in € bn.		of which notionally eligible EHQLA and HQLA		of which EHQLA and HQLA
140	Loans on demand	0	0	0	0
150	Equity instruments	35.4	19.6	2.0	1.7
160	Debt securities	173.8	152.1	32.2	18.2
	of which:				
170	Covered bonds	3.3	3.3	0.9	0.5
180	Asset-backed securities	3.0	1.4	3.8	0.1
190	Issued by general governments	152.9	146.6	23.9	17.3
200	Issued by financial corporations	14.5	4.4	6.4	0.9
210	Issued by non-financial corporations	7.7	1.3	2.1	0.1
220	Loans and advances other than loans on demand	0	0	2.2	0
230	Other collateral received	0	0	0	0
130	Total collateral received	205.1	171.7	36.0	19.9
240	Own debt securities issued other than own covered bonds or asset-backed securities	0	0	0	0
241	Own covered bonds and asset-backed securities issued and not yet pledged	–	–	3.0	1.0
250	Total Assets, collateral received and own debt securities issued	432.7	243.4	–	–

					Jun 30, 2020
		010	030	040	060
				Unencumbered	
		Fair value of encumbered collateral received or own debt securities issued		Fair value of collateral received or own debt securities issued available for encumbrance	
	in € bn.		of which notionally eligible EHQLA and HQLA		of which EHQLA and HQLA
140	Loans on demand	0	0	0	0
150	Equity instruments	29.6	16.3	2.8	2.1
160	Debt securities	177.9	161.1	34.8	23.7
	of which:				
170	Covered bonds	2.8	2.8	0.5	0.5
180	Asset-backed securities	2.0	0.7	4.3	0.2
190	Issued by general governments	154.4	153.9	24.6	22.4
200	Issued by financial corporations	17.2	6.1	7.7	0.9
210	Issued by non-financial corporations	5.5	1.1	2.1	0.2
220	Loans and advances other than loans on demand	0	0	3.6	0
230	Other collateral received	0	0	0	0
130	Total collateral received	205.1	174.7	41.2	25.5
240	Own debt securities issued other than own covered bonds or asset-backed securities	0	0	0	0
241	Own covered bonds and asset-backed securities issued and not yet pledged	–	–	3.0	1.0
250	Total Assets, collateral received and own debt securities issued	432.7	244.0	–	–

The below table shows selected amounts for encumbered on- and off-balance sheet assets against the corresponding liabilities that have given rise to the encumbrance. These include assets pledged for derivatives margin, collateral required for repurchase agreements, and assets needed for the Group’s covered bond issuance portfolio and the ECB’s Targeted Longer Term Refinancing Operation.

EU AE3 – Sources of encumbrance

		Dec 31, 2020		Jun 30, 2020	
		010	030	010	030
	in € bn.	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
010	Carrying amount of selected financial liabilities	298.3	322.0	294.0	319.1
011	of which:				
012	Derivatives	72.6	74.1	73.7	75.2
013	Repurchase agreements	162.4	166.7	151.0	154.4
014	Collateralized central bank deposits and covered bonds issued	45.6	64.0	47.4	60.7

Liquidity

As part of the Basel 3 rules, the Basel Committee on Banking Supervision specified two minimum liquidity standards for banks:

The Liquidity Coverage Ratio (LCR):

The LCR is intended to promote the short-term resilience of a bank's liquidity risk profile over a 30 day stress scenario. The ratio is defined as the amount of High Quality Liquid Assets ("HQLA") that could be used to raise liquidity, measured against the total volume of net cash outflows, arising from both contractual and modelled exposures, in a stressed scenario.

This requirement has been implemented into European law, via the Commission Delegated Regulation (EU) 2015/61, adopted in October 2014. Compliance with the LCR was required in the EU from October 1, 2015.

Our average LCR of 142.05 % (twelve months average) has been calculated in accordance with the Commission Delegated Regulation (EU) 2015/61 and the EBA Guidelines on LCR disclosure to complement the disclosure of liquidity risk management under Article 435 CRR.

The year-end LCR as of December 31, 2020 stands at 144.78 % compared to 141.18 % as of December 31, 2019.

Concentration of funding and liquidity sources:

For an overview of funding concentration and liquidity sources please refer to the section "Liquidity risk exposure" in the Annual Report 2020 on page 155. The information is contained in the sub-section "Funding diversification", "Composition of external funding sources".

Derivative exposures and potential collateral calls:

The majority of outflows related to derivative exposures and other collateral requirements shown in item 11 are in relation to derivative contractual cash flows that are offset by Other cash inflows shown in item 19.

Other significant outflows relate to the impact of an adverse market scenario on derivatives based on the 24 month historical look back approach, and the potential posting of additional collateral as a result of a 3 notch downgrade of DB's credit rating (as per regulatory requirements).

Currency mismatch in the LCR:

The LCR is calculated in all significant currencies (make up at least 5 % of the total Balance Sheet EUR, USD and GBP). No explicit LCR risk appetite is set for specific currencies.

Approach to centralized group liquidity management and individual legal entity liquidity management:

Please refer to the section "Liquidity risk management" on page 104 in the Annual Report 2020.

Other items in the LCR calculation that are not captured in the LCR disclosure template but that the institution considers relevant for its liquidity profile:

The Pillar 3 disclosure obligations require Banks to disclose the 12 months rolling averages each quarter. We do not consider anything else relevant for disclosure.

EU LIQ1 - LCR disclosure template

	in € b.	Total unweighted value (average)				Total weighted value (average)			
	Quarter ending on	Dec 31, 2020	Sep 30, 2020	Jun 30, 2020	Mar 31, 2020	Dec 31, 2020	Sep 30, 2020	Jun 30, 2020	Mar 31, 2020
	Number of data points used in the calculation of averages	12	12	12	12	12	12	12	12
	High-quality liquid assets								
1	Total high-quality liquid assets (HQLA)	–	–	–	–	207	203	201	208
	Cash-outflows								
2	Retail deposits and deposits from small business costumers	249	225	202	180	16	16	16	16
	of which:								
3	Stable deposits	109	107	105	102	5	5	5	5
4	Less stable deposits	78	76	76	78	11	11	11	11
5	Unsecured wholesale funding	215	216	219	221	90	90	92	95
	of which:								
6	Operational deposits (all counterparties) and deposits in network of cooperative banks	83	83	83	83	21	21	21	21
7	Non-operational deposits (all counterparties)	130	132	134	136	68	68	70	72
8	Unsecured debt	2	1	1	2	2	1	1	2
9	Secured wholesale funding	–	–	–	–	17	16	15	18
10	Additional requirements	200	207	212	215	77	81	83	85
	of which:								
11	Outflows related to derivative exposures and other collateral requirements	38	42	43	43	37	41	42	43
12	Outflows related to loss of funding on debt products	0	0	0	0	0	0	0	0
13	Credit and liquidity facilities	162	164	168	172	40	40	41	42
14	Other contractual funding obligations	42	40	40	41	6	6	5	5
15	Other contingent funding obligations	111	111	109	115	6	6	6	8
16	Total cash outflows	–	–	–	–	212	215	217	227
	Cash - inflows								
17	Secured lending (e.g. reverse repos)	238	236	234	241	16	15	14	17
18	Inflows from fully performing exposures	43	47	50	55	32	35	38	43
19	Other cash inflows	25	28	29	29	25	28	29	29
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	–	–	–	–	6	7	9	9
EU 19b	Excess inflows from a related specialized credit institution	–	–	–	–	0	0	0	0
20	Total cash inflows	305	310	312	325	67	71	72	80
	of which:								
EU 20a	Fully exempt inflows	0	0	0	0	0	0	0	0
EU 20b	Inflows subject to 90 % cap	0	0	0	0	0	0	0	0
EU 20c	Inflows subject to 75 % cap	283	290	291	296	67	71	72	80
						Total adjusted value			
21	Liquidity buffer	–	–	–	–	207	203	201	208
22	Total net cash outflows	–	–	–	–	146	144	145	147
23	Liquidity coverage ratio (%)	–	–	–	–	142	142	139	142

The Net Stable Funding Ratio (NSFR):

Basel 3 also contains a proposal to introduce a net stable funding ratio (NSFR) to reduce medium to long-term funding risks by requiring banks to fund their activities with sufficiently stable sources of funding. The NSFR requires banks to maintain a stable funding profile in relation to their on- and off-balance sheet activities. The ratio is defined as the amount of Available Stable Funding (the portion of capital and liabilities expected to be a stable source of funding), relative to the amount of Required Stable Funding (a function of the liquidity characteristics of various assets held).

The Capital Requirements Regulation II ("CRR2"), the regulation which defines and implements the NSFR for the EU, was finalized in June 2019. Based on the published CRR II text, NSFR compliance will become effective on June 28, 2021 with no transition period, i.e. full implementation at 100 %. The EBA has submitted the final draft implementing standards (ITS) as regards supervisory reporting to the European Commission (EC) in June 2020, which has been adopted by the EC and is currently under scrutiny by legislators prior to being published in the Official Journal.

Business risk

Business risk economic capital includes a strategic risk component, which also implicitly captures elements of non-standard risks such as refinancing and reputational risk, a tax risk component and a capital charge for deferred tax assets on temporary differences and software assets.

Economic capital demand for business risk by business division

			2020 increase (decrease) from 2019	
in € m.	Dec 31, 2020	Dec 31, 2019	in € m.	in %
Corporate Bank	193	195	(2)	(1)
Investment Bank	2,767	4,914	(2,147)	(44)
Private Bank	80	71	9	13
Asset Management	0	0	0	N/M
Capital Release Unit	0	20	(20)	N/M
Corporate & Other	2,909	1,174	1,735	148
Total	**5,949**	6,374	(425)	(7)

The economic capital demand for business risk as of December 31, 2020 was € 5.9 billion, representing a € 0.4 billion or 7 % decrease compared to December 31, 2019. The economic capital demand for the strategic risk component totaled € 2.8 billion and was largely allocated to the Investment Bank. This amount was € 2.1 billion lower compared to year-end 2019, which primarily reflected the execution of the bank's transformation and the associated improvement in the earnings outlook. The decrease in strategic risk was partially offset by the introduction of a capital charge of € 1.8 billion to account for the risk associated with the software assets recognized in economic capital supply since December 2020. The economic capital demand for the tax risk component and the capital charge for IFRS deferred tax assets remained stable during the year.

The strategic risk economic capital model calculates potential unexpected operating losses under extreme adverse scenarios due to decreases in operating revenues that cannot be compensated by cost reductions. To avoid double-counting, revenue or cost fluctuations related to market risk, credit risk or operational risk are disregarded. The model reflects business-specific, historical revenue volatilities as well as the earnings expectations for the next 12 months. Key macro-economic and financial revenue drivers are included to model dependencies between the business units.

List of tables