



Pillar 3 Report as of June 30, 2019

Content

3 Regulatory Framework

- 3 Introduction
 - 3 Basel 3 and CRR/CRD
 - 4 TLAC and European MREL (SRMR/BRRD)
 - 4 ICAAP, ILAAP and SREP
 - 5 Prudential measures for non-performing exposure
-

6 Own funds

- 6 Article 437 (a,d-e) CRR – Regulatory capital composition, prudential filters and deduction items
 - 13 Article 437a (a-d) CRR – Own funds and eligible liabilities
 - 14 Article 437 (b-c) CRR – Main features of capital instruments
 - 14 Article 437 (f) CRR – Capital ratios different to CRR
-

15 Capital requirements

- 15 Article 438 (d-h) CRR – Overview of capital requirements
 - 16 Article 438 CRR – Specialized lending and equity exposures in the banking book
 - 17 Article 438 CRR – Other non-credit obligation assets in the banking book
 - 17 Article 440 CRR – Capital buffers
-

18 Credit risk and credit risk mitigation

- 18 General qualitative information on credit risk
 - 18 Article 442 (a) CRR – Definitions of past due and impairment
 - 18 Article 442 (b) CRR – Credit risk adjustments
 - 18 General quantitative information on credit risk
 - 18 Article 442 (c-e) CRR – Defaulted exposures by regulatory exposure class, industry and geographical area, non-performing and forbore exposures
 - 31 Article 442 (f) CRR – Development of credit risk adjustments and defaulted loans and debt securities
 - 32 General quantitative information on credit risk mitigation
 - 32 Article 453 (f-j) CRR – Overview of credit risk mitigation techniques
-

35 Credit risk exposure in the standardized approach

- 35 Article 444 (e) CRR – Credit risk exposure and credit risk mitigation in the standardized approach
-

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

- 38 Quantitative information on the use of the IRB approach
- 38 Article 452 (f-h) CRR – Advanced IRB exposure
- 47 Article 452 (f-h) CRR – Foundation IRB exposure
- 52 Article 453 (j) CRR – Total IRB exposure covered by credit derivatives
- 52 Article 438 (d) CRR – Development of Credit Risk RWA

54 Counterparty credit risk (CCR)

- 54 Article 439 (h-i) CRR – Counterparty credit risk exposures by model approach
 - 55 Article 444 (e) CRR – CCR exposures in the standardized approach
 - 57 Article 452 (f) CRR – CCR exposures within the advanced IRBA
 - 62 Article 452 (e) CRR – CCR exposures within the foundation IRBA
 - 65 Article 438 (d) CRR – Development of CCR RWA
 - 65 Article 439 (e-g) CRR – CCR exposures after credit risk mitigation
 - 66 Article 439 (j) CRR – Credit derivatives exposures
-

67 Market risk

- 67 Own funds requirements for market risk under the standardized approach
 - 67 Article 445 CRR – Market Risk Standardized Approach
 - 67 Own funds requirements for market risk under the IMA
 - 67 Article 455 (e) CRR – Regulatory capital requirements for market risk
 - 69 Other quantitative information for market risk under the internal models approach
 - 69 Article 455 (d) CRR – Overview of Value-at-Risk Metrics
 - 70 Article 455 (g) CRR – Comparison of end-of-day VaR measures with one-day changes in portfolio's value
-

72 Operational Risk

- 72 Article 446 CRR – Operational Risk Exposure
-

73 Exposure to securitization positions

- 73 Article 449 (k) CRR – Retained or purchased banking and trading book securitizations broken down by risk-weight bands
-

75 Leverage (Article 451 CRR)

- 75 Leverage Ratio according to CRR/CRD framework
 - 77 Process used to manage the risk of excessive leverage
 - 77 Factors that had an impact on the leverage ratio in the first half 2019
-

79 Unencumbered Assets (Article 443 CRR)

82 List of tables

Regulatory framework

Introduction

This Report provides Pillar 3 disclosures on the consolidated level of Deutsche Bank 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. On European level these are implemented in the disclosure requirements as laid down in Part Eight of the “Regulation (EU) 2019/876 on prudential requirements for credit institutions and investment firms” (Capital Requirements Regulation, or “CRR”) and the “Directive (EU) 2019/878 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 recently amended and have entered into force on June 27, 2019. Germany implemented the CRD 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 regulations. In addition, the CRD was implemented into German law by means of further amendments to the KWG and the German Solvency Regulation (SolV) 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 for credit risk, including counterparty credit risk, credit valuation adjustments, market risk and operational risk.

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. All securitization transactions originated before this date remain subject to the rules introduced by CRR/CRD as applicable until December 31, 2018 and will be subject to the new framework on January 1, 2020.

With the recent amendments to the CRR/CRD various changes are introduced to the credit risk RWA framework becoming applicable in June 2021. These relate 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).

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). 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.

Further capital components considered for regulatory purposes are Additional Tier 1 (AT1) and Tier 2 (T2) capital. However, for these certain transitional arrangements are still in place which were introduced by the CRR/CRD applicable until June 26, 2019. Capital instruments that no longer qualify as AT1 or T2 capital under these fully loaded rules are subject to grandfathering rules during the transitional period and are being phased out from 2013 to 2022 with their recognition capped at 40 % in 2018, 30 % in 2019 and the cap decreasing by ten percentage points every year thereafter.

We present in this report certain figures based on our definition of own funds (applicable for Additional Tier 1 capital and Tier 2 capital and figures based thereon, including Tier 1 capital and Leverage Ratio) on a “fully loaded” basis. The term “fully loaded” is defined as excluding the transitional arrangements for own funds introduced by the CRR/CRD applicable until June 26, 2019. However, it reflects the latest transitional arrangements introduced by the amendments to the CRR/CRD applicable from June 27, 2019.

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 pending settlement receivables may be netted with pending settlement payables subject to further requirements, and a minimum leverage ratio requirement of 3 % is introduced. From January 1, 2022 an additional leverage ratio buffer requirement of 50 % of the applicable G-SIB buffer rate applies. It is currently expected that this additional requirement equals 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 % is 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)

The key change regarding the amendments to CRR that is applicable from June 27, 2019 relates to the introduction of a total loss-absorbing capacity ("TLAC") requirement which implements the internationally agreed TLAC standard as documented in the Financial Stability Board's (FSB) TLAC Term sheet in Europe.

Global Systemically Important Banks (G-SIBs) in Europe now 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 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 on a case-by-case basis by the resolution authority in line with guidance provided by Commission Delegated Regulation (EU) 2016/1450. The Single Resolution Board ("SRB") as Deutsche Bank's resolution authority has issued further MREL policies clarifying how the SRB will exercise its discretion under the above European laws in setting MREL and in determining eligible liabilities. MREL is expressed as a percentage of Total Liabilities and Own Funds ("TLOF").

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).

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 for non-performing loans, which will result in a deduction from CET 1 capital when a minimum loss coverage requirement is not met. We expect first impacts on our CET 1 ratio in 2021, as these rules apply to newly originated assets after application date and foresee a two year grace period before the defined backstop requirements apply.

In addition, 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”. This guidance 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. In line with the ECB guidance we do not expect an impact earlier than in the third quarter of 2020.

In its 2019 SREP letter, ECB asks us to apply ECB’s non-performing backstop requirements to the stock of Non-Performing Loans starting year end 2020. Similar to the Addendum to the ECB Guidance to banks on non-performing loans this measure will be evaluated as part of the annual SREF process.

The aforementioned ECB’s “Addendum to the ECB Guidance to banks on non-performing loans: supervisory expectations for prudential provisioning of non-performing exposures” provides in Appendix 7 disclosure recommendations for non-performing loans (“NPLs”) to be considered in the banks Pillar 3 report starting year end 2018. In agreement with ECB, we are providing Templates 1, 3 and 4 of the EBA Guidelines on disclosure of non-performing and forborne exposures (EBA/GL/2018/10) published on December 17, 2018 to address the key disclosure recommendations of ECB’s Addendum to the ECB Guidance on NPLs (Appendix 7).

Own funds

Article 437 (a,d-e) CRR - Regulatory capital composition, prudential filters and deduction items

Development of regulatory capital

Our CRR/CRD Tier 1 capital as of June 30, 2019 amounted to €54.1 billion, consisting of a Common Equity Tier 1 (CET 1) capital of €46.5 billion and Additional Tier 1 (AT1) capital of €7.6 billion. The CRR/CRD Tier 1 capital was €1.0 billion lower than at the end of December 2018, driven by a decrease in CET 1 capital of €1.0 billion.

The €1.0 billion decrease of CRR/CRD CET 1 capital was driven by ECB feedback on the conclusion of one of its regular reviews in the second quarter of 2019, which resulted in an additional CET 1 capital deduction of €0.4 billion as of June 30, 2019. The adoption of IFRS 16 effective January 1, 2019 decreased capital by €0.1 billion. Furthermore, our CET 1 capital was reduced by €0.6 billion in the second quarter of 2019 due to the payment of our common share dividends for the financial year 2018 (€0.11/share following the Annual General Meeting) and the yearly AT1 coupon payment, which was partially offset by year end 2018 dividend and AT1 accruals of €0.3 billion following Article 26 (2) of Regulation (EU) 2019/876 and as per ECB Decision (EU) 2015/656. As of June 30, 2019 the net loss attributable to Deutsche Bank shareholders and additional equity components was €3.0 billion. The €3.0 billion net loss attributable to revaluation of deferred tax assets and the impairment of goodwill and other intangible assets in the second quarter of 2019 was largely capital neutral given that deferred tax assets and goodwill and other intangible assets were deducted from CET 1 capital. Since we did not include an interim profit in our CET 1 capital as a consequence of the negative net income in financial year 2019, no AT1 coupons were accrued in CET 1 capital in accordance with Article 26 (2) CRR.

Our fully loaded CRR/CRD Tier 1 capital as of June 30, 2019 was €51.1 billion, compared to €52.1 billion at the end of December 2018. Our fully loaded CRR/CRD CET 1 capital amounted to €46.5 billion as of June 30, 2019, compared to €47.5 billion as of December 31, 2018. Our fully loaded CRR/CRD Additional Tier 1 capital amounted to €4.6 billion as per end of June 2019, unchanged compared to December 2018.

Own funds template (incl. RWA and capital ratios)

in €m.	Jun 30, 2019		Dec 31, 2018		References ¹
	fully-loaded	CRR/CRD	fully loaded	CRR/CRD	
Common Equity Tier 1 (CET 1) capital: instruments and reserves					
1	Capital instruments, related share premium accounts and other reserves				
	45,583	45,583	45,515	45,515	A
	of which: Instrument type 1 (ordinary shares) ²				
	45,583	45,583	45,515	45,515	A
	of which: Instrument type 2				
	0	0	0	0	
	of which: Instrument type 3				
	0	0	0	0	
2	15,420	15,420	16,297	16,297	B
3	Accumulated other comprehensive income (loss), net of tax				
	661	661	382	382	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)				
	833	833	846	846	D
5a	Independently reviewed interim profits net of any foreseeable charge or dividend ³				
	(3,012)	(3,012)	0	0	B
6	Common Equity Tier 1 (CET 1) capital before regulatory adjustments				
	59,485	59,485	63,041	63,041	
Common Equity Tier 1 (CET 1) capital: regulatory adjustments					
7	Additional value adjustments (negative amount) ⁴				
	(1,693)	(1,693)	(1,504)	(1,504)	
8	Goodwill and other intangible assets (net of related tax liabilities) (negative amount)				
	(7,175)	(7,175)	(8,566)	(8,566)	E
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)				
	(1,080)	(1,080)	(2,758)	(2,758)	F
11	Fair value reserves related to gains or losses on cash flow hedges				
	(34)	(34)	(25)	(25)	
12	Negative amounts resulting from the calculation of expected loss amounts ⁵				
	(209)	(209)	(367)	(367)	
13	Any increase in equity that results from securitized assets (negative amount)				
	(0)	(0)	(1)	(1)	
14	Gains or losses on liabilities designated at fair value resulting from changes in own credit standing ⁶				
	(231)	(231)	(304)	(304)	
15	Defined benefit pension fund assets (negative amount)				
	(1,072)	(1,072)	(1,111)	(1,111)	G
16	Direct, indirect and synthetic holdings by an institution of own CET 1 instruments (negative amount) ⁷				
	(16)	(16)	(25)	(25)	
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) ⁸				
	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 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)				
	0	0	0	0	F
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	F
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 ⁹				
	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 ¹⁰				
	(1,450)	(1,450)	(895)	(895)	
28	Total regulatory adjustments to Common Equity Tier 1 (CET 1) capital				
	(12,962)	(12,962)	(15,555)	(15,555)	
29	Common Equity Tier 1 (CET 1) capital				
	46,523	46,523	47,486	47,486	

in € m.		Jun 30, 2019		Dec 31, 2018		References ¹
		fully-loaded	CRR/CRD	fully loaded	CRR/CRD	
Additional Tier 1 (AT1) capital: instruments						
30	Capital instruments and the related share premium accounts of which:	4,676	4,676	4,676	4,676	H
31	Classified as equity under applicable accounting standards	4,676	4,676	4,676	4,676	H
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	3,019	N/M	3,009	I
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	4,676	7,695	4,676	7,685	
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)	H
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) ⁸	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	E
	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	4,595	7,614	4,595	7,604	
45	Tier 1 capital (T1 = CET 1 + AT1)	51,119	54,138	52,082	55,091	
Tier 2 (T2) capital: instruments and provisions						
46	Capital instruments and the related share premium accounts ¹¹	9,170	6,151	9,340	6,331	J
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	J
48	Qualifying own funds instruments included in consolidated T2 capital issued by subsidiaries and held by third parties	22	22	23	23	J
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	9,192	6,172	9,363	6,354	
Tier 2 (T2) capital: regulatory adjustments						
52	Direct, indirect and synthetic holdings by an institution of own T2 instruments and subordinated loans (negative amount)	(154)	(154)	(152)	(152)	J
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) ⁸	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	
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	(154)	(154)	(152)	(152)	

in € m.	Jun 30, 2019		Dec 31, 2018		References ¹
	fully-loaded	CRR/CRD	fully loaded	CRR/CRD	
58 Tier 2 (T2) capital	9,037	6,018	9,211	6,202	
59 Total capital (TC = T1 + T2)	60,156	60,156	61,292	61,292	
60 Total risk-weighted assets	346,878	346,878	350,432	350,432	
of which:					
Credit Risk (including Settlement Risk)	227,431	227,431	212,913	212,913	
Credit Valuation Adjustment (CVA)	6,219	6,219	7,997	7,997	
Market Risk	29,033	29,033	37,535	37,535	
Operational Risk	84,195	84,195	91,989	91,989	
Capital ratios and buffers					
61 Common Equity Tier 1 capital ratio (as a percentage of risk-weighted assets)	13.4	13.4	13.6	13.6	
62 Tier 1 capital ratio (as a percentage of risk-weighted assets)	14.7	15.6	14.9	15.7	
63 Total capital ratio (as a percentage of risk-weighted assets)	17.3	17.3	17.5	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) ¹²	11.8	11.8	11.8	10.7	
of which:					
65 Capital conservation buffer requirement	2.5	2.5	2.5	1.875	
66 Countercyclical buffer requirement	0.07	0.07	0.07	0.07	
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	1.5	
68 Common Equity Tier 1 capital available to meet buffers (as a percentage of risk-weighted assets) ¹³	13.2	13.4	13.4	13.6	
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) ⁸	3,487	3,487	3,564	3,564	
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)	799	799	776	776	
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)	4,447	4,447	4,453	4,453	
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	244	244	247	247	
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	1,079	1,079	1,026	1,026	
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 ¹⁴	N/M	3,758	N/M	5,010	
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 ¹⁴	N/M	1,013	N/M	1,350	
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 (for more information refer to the Pillar 3 Report 2018 where this is reflected in the column "References" in the section "EU L11 – 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 No interim profits to be recognized as per ECB Decision (EU) 2015/656 in accordance with the Article 26 (2) of Regulation (EU) 2019/876.

⁴ The € 1.7 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 Based on Article 159 CRR and recent guidance provided by EBA (Q&A 2017_3426) published on January 18, 2019 only unearned credit spread additional value adjustments are used as specific credit risk adjustments.

⁶ 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.

⁷ Excludes holdings that are already considered in the accounting base of Common Equity.

⁸ Based on our current interpretation no deduction amount expected.

⁹ Prudential filter for fund for home loans and savings protection ("Fonds zur bauparotechnischen Absicherung").

¹⁰ Includes € 0.4 billion capital deduction effective from April 2019 based on regular ECB review, € 0.7 billion capital deduction based on ECB guidance and following the EBA Guidelines on irrevocable payment commitments related to the Single Resolution Fund and the Deposit Guarantee Scheme effective from January 2018 onwards and capital

deduction of €0.3 billion that was imposed on Deutsche Bank effective from October 2016 onwards based on a notification by the ECB pursuant to Article 16 (1) (c) and 16 (2) (d) of Regulation (EU) 1024/2013.

¹¹ Amortization is taken into account.

¹² Includes Pillar 2 Requirement.

¹³ Calculated as the CET 1 capital less any CET 1 items used to meet Tier 1 and Total capital requirements.

¹⁴ The phase out limit for AT1 and T2 for 2018 was mis-stated with a 50 % phase out rate instead of 40 %. December 2018 comparatives have been revised accordingly.

^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 € (3,012) million (December 2018: €267 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 dividend and AT1 coupons of €0 million (December 2018: € (267) 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 Phase-out of minority interests (i.e noncontrolling interests) at a rate of 0 % in 2018.

^E Regulatory applicable amount is goodwill and other intangible assets of € 7,513 million (December 2018: € 8,947 million) plus goodwill from equity method investments of € 74 million (December 2018: € 69 million) as per regulatory balance sheet reduced by deferred tax liabilities on other intangibles of € 411 million (December 2018: € 450 million).

Total CET 1 deduction amount is phased-in at a rate of 100 % in 2018. Residual amount is deducted from AT1 capital.

^F Differences to balance sheet position mainly driven by adjustments as set out in Article 38 (2) to (5) CRR (e.g. regulatory offsetting requirements).

^G Phase-in at a rate of 100 % in 2018.

^H Additional equity components reflects regulatory eligible AT1 capital instruments.

^I 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).

^J Difference to regulatory balance sheet driven by regulatory adjustments as set out in Articles 62 to 71 CRR (e.g. maturity deduction, noncontrolling interests).

Reconciliation of shareholders' equity to regulatory capital

in €m.	Jun 30, 2019	Dec 31, 2018
Total shareholders' equity per accounting balance sheet	58,742	62,495
Deconsolidation/Consolidation of entities	(89)	(33)
of which:		
Additional paid-in capital	(13)	(12)
Retained earnings	(216)	(150)
Accumulated other comprehensive income (loss), net of tax	140	130
Total shareholders' equity per regulatory balance sheet	58,653	62,462
Minority Interests (amount allowed in consolidated CET 1)	833	846
Accrual for dividend and AT1 coupons ¹	0	(267)
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	59,485	63,041
Prudential filters	(1,958)	(1,833)
of which:		
Additional value adjustments	(1,693)	(1,504)
Any increase in equity that results from securitized assets	0	(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	(265)	(329)
Regulatory adjustments relating to unrealized gains and losses pursuant to Art. 467 and 468 CRR	0	0
Regulatory adjustments	(11,004)	(13,722)
of which:		
Goodwill and other intangible assets (net of related tax liabilities)	(7,175)	(8,566)
Deferred tax assets that rely on future profitability	(1,080)	(2,758)
Negative amounts resulting from the calculation of expected loss amounts	(209)	(367)
Defined benefit pension fund assets	(1,072)	(1,111)
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	(1,467)	(920)
Common Equity Tier 1 capital	46,523	47,486
Additional Tier 1 capital	7,614	7,604
Additional Tier 1 Notes (AT1 Notes)	4,595	4,595
Per balance sheet	4,675	4,675
Deconsolidation/Consolidation of entities	0	0
Regulatory adjustments to balance sheet position	(80)	(79)
Hybrid capital securities	3,019	3,009
Per balance sheet	3,269	3,168
Deconsolidation/Consolidation of entities	0	0
Regulatory adjustments to balance sheet position	(250)	(159)
Other regulatory adjustments	0	0
Deductions from Additional Tier 1 capital	0	0
Tier 1 capital	54,138	55,091
Tier 2 capital	6,018	6,202
Subordinated debt	5,739	5,918
Per balance sheet	7,307	7,144
Deconsolidation/Consolidation of entities	0	0
Regulatory adjustments to balance sheet position	(1,568)	(1,226)
of which:		
Amortization according to Art. 64 CRR	(851)	(801)
Other	(717)	(425)
Other regulatory adjustments	279	284
Deductions from Tier 2 capital	0	0
Total capital	60,156	61,292

¹ No interim profits to be recognized as per ECB Decision (EU) 2015/656 in accordance with the Article 26 (2) of Regulation (EU) 2019/876.

² Includes €0.4 billion capital deduction effective from April 2019 based on regular ECB review, €0.7 billion capital deduction based on ECB guidance and following the EBA Guidelines on irrevocable payment commitments related to the Single Resolution Fund and the Deposit Guarantee Scheme effective from January 2018 onwards and capital deduction of €0.3 billion that was imposed on Deutsche Bank effective from October 2016 onwards based on a notification by the ECB pursuant to Article 16 (1) (c) and 16 (2) (d) of Regulation (EU) 1024/2013.

Development of regulatory capital

in € m.	six months ended Jun 30, 2019	six months ended Dec 31, 2018
Common Equity Tier 1 (CET 1) capital - opening amount	47,486	47,884
Common shares, net effect	0	0
of which:		
New shares issued (+)	0	0
Shares retired (-)	0	0
Additional paid-in capital	65	108
Retained earnings	(3,889)	(277)
of which:		
Actuarial gains (losses) rel. to defined benefit plans, net of tax and Currency Translation Adjustment (CTA)	(385)	(56)
Net income attributable to Deutsche Bank Shareholders	(3,012)	(214)
Common shares in treasury, net effect/(+) sales (-) purchase	3	60
Movements in accumulated other comprehensive income	279	(67)
of which:		
Foreign currency translation, net of tax	(24)	136
Unrealized gains and losses	290	(197)
Other	13	(5)
Accrual for dividend and Additional Tier 1 (AT1) coupons ¹	0	214
of which:		
Gross dividends (deduction)	0	378
Shares issued in lieu of dividends (add back)	0	0
Gross AT1 coupons (deduction)	0	(163)
Additional value adjustments	(190)	(290)
Goodwill and other intangible assets (net of related tax liabilities)	1,390	(66)
Deferred tax assets that rely on future profitability (excluding those arising from temporary differences)	1,678	107
Negative amounts resulting from the calculation of expected loss amounts	158	(176)
Removal of gains/losses resulting from changes in own credit standing in liabilities designated at fair value (net of tax)	73	134
Defined benefit pension fund assets	38	(68)
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)	0	0
Other, including regulatory adjustments	(569)	(78)
Common Equity Tier 1 (CET 1) capital - closing amount	46,523	47,486
Additional Tier 1 (AT1) capital - opening amount	7,604	7,568
New Additional Tier 1 eligible capital issues	0	0
Matured and called instruments	0	0
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	10	36
Additional Tier 1 (AT1) capital - closing amount	7,614	7,604
Tier 1 capital (T1 = CET 1 + AT1)	54,138	55,091
Tier 2 (T2) capital - opening amount	6,202	6,260
New Tier 2 eligible capital issues	0	0
Matured and called instruments	(1)	(3)
Amortization adjustments	(95)	(127)
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	(88)	72
Tier 2 (T2) capital - closing amount	6,018	6,202
Total regulatory capital (TC = T1 + T2)	60,156	61,292

¹ No interim profits to be recognized as per ECB Decision (EU) 2015/656 in accordance with the Article 26 (2) of Regulation (EU) 2019/876.

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

Our own funds and eligible liabilities as of June 30, 2019, amounted to € 121 billion, consisting of a total loss absorbing capacity (TLAC) of € 120 billion and further eligible liabilities from senior preferred liabilities instruments of € 1 billion.

Own funds and eligible liabilities disclosure ordered by insolvency hierarchy

in € m.

(unless stated otherwise)

	Jun 30, 2019
Regulatory capital elements of TLAC/MREL	
Common Equity Tier 1 capital (CET 1)	46,523
Additional Tier 1 (AT1) capital instruments eligible under TLAC/MREL	7,614
Tier 2 (T2) capital instruments eligible under TLAC/MREL	
Tier 2 (T2) capital instruments before TLAC/MREL adjustments	6,018
Tier 2 (T2) capital instruments adjustments for TLAC/MREL	9
Tier 2 (T2) capital instruments eligible under TLAC/MREL	6,027
Total regulatory capital elements of TLAC/MREL	60,165
Other elements of TLAC/MREL	
Senior non-preferred plain vanilla	
Residual maturity >= 1 year and <2 years (Article 437a(a))	14,791
Residual maturity >= 2 years (Article 437a(a))	44,697
Senior non-preferred plain vanilla	59,488
Holdings of eligible liabilities instruments of other G-SIIs (TLAC only)	(35)
Total Loss Absorbing Capacity (TLAC)	119,618
Senior preferred plain vanilla	
Residual maturity >= 1 year and <2 years (Article 437a(a))	0
Residual maturity >= 2 years (Article 437a(a))	1,045
Senior preferred plain vanilla	1,045
Available Minimum Own Funds and Eligible Liabilities (MREL)	120,698
Total amount of liabilities excluded from eligible liabilities items (Article 437a(d))	0
Total liabilities and own funds after prudential netting (TLOF)	1,104,731
Risk-Weighted Assets	346,878
Leverage Exposure Measure	1,304,162
TLAC ratio	
TLAC ratio (as percentage of RWA)	34.48
TLAC ratio (as percentage of Leverage Exposure)	9.17
MREL ratio	
MREL ratio (as percentage of TLOF)	10.93

As of June 30, 2019, our total loss absorbing capacity (TLAC) was € 120 billion and the corresponding TLAC ratios were 34.5 % (RWA based) and 9.2 % (leverage exposure based). This means that Deutsche Bank has a comfortable buffer of € 41 billion over its total loss absorbing capacity minimum requirement of € 79 billion (22.9 % RWA based and 6 % leverage exposure based).

As of June 30, 2019, total liabilities and own funds (TLOF) were € 1,105 billion and available MREL were € 121 billion, corresponding to a ratio of 10.9 %, compared to € 1,058 billion TLOF and € 118 billion MREL and a ratio of 11.1 % as of December 31, 2018. This means that Deutsche Bank has a comfortable buffer of own funds and eligible liabilities which is € 20 billion above our MREL. The change was driven by a seasonal increase of the balance sheet and new issuance activities in the second quarter 2019.

Main features of eligible liabilities instruments

As of June 30, 2019, 60% of DB's senior non-preferred MREL/TLAC eligible instruments in terms of volume with remaining tenor of > 1 year are public benchmarks with volume-weighted average original tenor of 4.8 years. 80% out of these senior non-preferred benchmarks have a fixed coupon rate with a volume-weighted average coupon of 2.7% and remaining maturity of 2.9 years. The main funding currencies are € and \$, which provide more than 90% of our senior non-preferred public benchmarks. Further, in August 2018 DB issued one € senior preferred MREL eligible instrument with an initial tenor of 5 years and with a fixed coupon rate of 1.125%.

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 Art. 72b (2) or are grandfathered pursuant to 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 Article 72b (3) and (4).

Ranking of liabilities in an insolvency proceeding under German law

Rank	Label of claims	Code
1	Common equity Tier 1 instruments	Section 199 of the Insolvency Code
2	Additional Tier 1 instruments	
3	Tier 2 instruments	
4	Claims subordinated by virtue of a contractual subordination clause not specifying the pertinent rank (other than Additional Tier 1 or Tier 2 instruments)	Section 39 (2) of the Insolvency Code
5	Claims for repayment of shareholder loans and accrued interest thereon	Section 39 (1) no. 5 of the Insolvency Code
6	Claims for the delivery of goods or provision of services free of charge	Section 39 (1) no. 4 of the Insolvency Code
7	Criminal and administrative fines	Section 39 (1) no. 3 of the Insolvency Code
8	Creditors' costs related to the insolvency proceeding	Section 39 (1) no. 2 of the Insolvency Code
9	Interest and late payment surcharges accrued after the opening of insolvency proceedings	Section 39 (1) no. 1 of the Insolvency Code
10	Claims subordinated by virtue of a contractual subordination clause which specifies the relevant ranking	Section 39 (2) of the Insolvency Code
11	<p>Non-preferred creditor claims arising from non-subordinated, unsecured non-structured debt instruments which</p> <p>(i) are issued before 21 July 2018 and are neither deposits within the positions of no. 13 and 14 nor money market instruments</p> <p>(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</p>	
12	General creditors' claims	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
13	Deposits not covered, but preferential	Section 46f (4) no. 2 of the Banking Act
14	Deposits covered and preferential	Section 46f (4) no. 1 of the Banking Act
15	Costs of proceeding and obligations binding on the estate	Sections 53 to 55 of the Insolvency Code
16	Claims subject to a right of separation in insolvency proceedings	Sections 49 to 51 of the Insolvency Code
17	Claims subject to a right of segregation in insolvency proceedings	Sections 47 and 48 of the Insolvency Code

Article 437 (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 (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 (d-h) 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

in €m.		Jun 30, 2019		Mar 31, 2019		
		a1	b1	a2	b2	
		RWA	Minimum capital requirements	RWA	Minimum capital requirements	
	1	Credit risk (excluding CCR)	177,184	14,175	171,405	13,712
		of which:				
Art 438(c)(d)	2	The standardized approach	18,212	1,457	19,586	1,567
Art 438(c)(d)	3	The foundation IRB (FIRB) approach	3,728	298	3,684	295
Art 438(c)(d)	4	The advanced IRB (AIRB) approach	148,115	11,849	141,362	11,309
Art 438(d)	5	Equity IRB under the simple risk-weighted approach or the IMA	7,129	570	6,773	542
Art 107	6	Counterparty credit risk (CCR)				
Art 438(c)(d)			32,320	2,586	34,945	2,796
		of which:				
Art 438(c)(d)	7	Mark to market	4,119	330	4,522	362
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)	2,704	216	2,840	227
	10	Internal model method (IMM)	18,823	1,506	20,087	1,607
Art 438(c)(d)	11	Risk exposure amount for contributions to the default fund of a CCP	454	36	433	35
Art 438(c)(d)	12	Credit Valuation Adjustment (CVA)	6,219	498	7,063	565
Art 438(e)	13	Settlement risk	269	22	118	9
Art 449(o)(i)	14	Securitization exposures in the banking book (after the cap)	10,763	861	10,468	837
		of which:				
	15	IRB approach	8,833	707	8,860	709
		of which:				
	16	IRB supervisory formula approach (SFA)	4,820	386	5,167	413
	17	Internal assessment approach (IAA)	0	0	0	0
	18	Standardized approach	1,930	154	1,608	129
	19	Market risk	29,033	2,323	31,027	2,482
		of which:				
	20	Standardized approach	3,702	296	4,582	367
	21	IMA	25,331	2,026	26,445	2,116
Art 438(e)	22	Large exposures	0	0	0	0
Art 438(f)	23	Operational risk	84,195	6,736	85,633	6,851
		of which:				
	24	Basic indicator approach	0	0	0	0
	25	Standardized approach	0	0	0	0
	26	Advanced measurement approach	84,195	6,736	85,633	6,851
Art 437(2), 48,60	27	Amounts below the thresholds for deduction (subject to 250 % risk weight)	13,115	1,049	13,880	1,110
Art 500	28	Floor adjustment	0	0	0	0
	29	Total	346,878	27,750	347,475	27,798

Our RWA were €346.9 billion as of June 30, 2019, compared to €347.5 billion as of March 31, 2019. The decrease of €0.6 billion was primarily driven by RWA for market and operational risk partly offset by increased RWA for credit risk. The operational risk RWA reduction of €1.4 billion was mostly driven by a lighter internal loss profile feeding into our capital model. The market risk RWA reduction of €2.0 billion primarily resulted from decreases in the stressed VaR component driven by decreases in interest risk as well as securitizations in the trading book as an outcome of de-risking and disposals. The CVA RWA reduction of €0.8 billion was driven by model updates. Credit risk RWA increased by €5.8 billion as a result of business growth and model updates in CIB and PCB as well as the introduction of IFRS 16. Moreover, the credit risk RWA increase was partly offset by favorable parameter developments and foreign exchange movements.

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 52, for counterparty credit risk in section "Article 438 (d) CRR - Development of CCR RWA" on page 65 and for market risk in section "Article 455 (e) CRR - Regulatory capital requirements for market risk" on page 67.

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. Additional credit risk mitigation techniques have not been applied.

For specific exposures in the advanced IRBA we are required to apply regulatory defined risk weights. In the following section we summarize our IRBA exposures for equities and other non-credit obligation assets falling under this requirement. Credit risk mitigation techniques have not been applied.

EU CR10 – IRB (specialized lending and equities)

in € m.
(unless stated otherwise)

Jun 30, 2019

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	154	100	50 %	252	124	0
	Equal to or more than 2.5 years	729	128	70 %	885	616	3
Category 2	Less than 2.5 years	52	28	70 %	73	51	0
	Equal to or more than 2.5 years	88	54	90 %	131	118	1
Category 3	Less than 2.5 years	2	0	115 %	3	3	0
	Equal to or more than 2.5 years	25	0	115 %	26	30	1
Category 4	Less than 2.5 years	(0)	0	250 %	0	0	0
	Equal to or more than 2.5 years	10	0	250 %	10	26	1
Category 5	Less than 2.5 years	11	0	–	17	0	9
	Equal to or more than 2.5 years	17	0	–	20	0	10
Total	Less than 2.5 years	219	128	–	344	178	9
	Equal to or more than 2.5 years	868	183	–	1,072	789	16

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	477	0	190 %	477	906	73
Exchange-traded equity exposures	29	0	290 %	29	85	7
All other equity exposures	1,626	35	370 %	1,659	6,137	491
Total	2,133	35	–	2,165	7,129	570

in € m.
(unless stated otherwise)

Dec 31, 2018

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	235	93	50 %	307	154	0
	Equal to or more than 2.5 years	800	87	70 %	919	643	3
Category 2	Less than 2.5 years	38	39	70 %	66	46	0
	Equal to or more than 2.5 years	94	89	90 %	138	124	1
Category 3	Less than 2.5 years	1	0	115 %	2	3	0
	Equal to or more than 2.5 years	28	0	115 %	30	34	1
Category 4	Less than 2.5 years	8	0	250 %	8	19	1
	Equal to or more than 2.5 years	8	0	250 %	9	21	1
Category 5	Less than 2.5 years	3	0	–	10	0	5
	Equal to or more than 2.5 years	15	0	–	19	0	10
Total	Less than 2.5 years	285	132	–	393	221	6
	Equal to or more than 2.5 years	946	177	–	1,114	822	16

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	450	0	190 %	450	855	68
Exchange-traded equity exposures	166	0	290 %	166	482	39
All other equity exposures	1,545	48	370 %	1,593	5,893	472
Total	2,160	48	–	2,209	7,229	578

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

in €m.	Risk Weight	Jun 30, 2019		Dec 31, 2018	
		EAD	RWA	EAD	RWA
Risk Position					
Other non-credit obligation assets - cash	0 %	2,588	0	2,828	0
Other non-credit obligation assets - other	100 %	7,417	7,417	3,276	3,276
DTA and FSE	250 %				
Total	–	10,005	7,417	6,104	3,276

Our RWA for other non-credit obligation assets were at €7.4 billion as of June 30, 2019, compared to €3.3 billion at the end of 2018. The increase of €4.1 billion was driven by the transition to IFRS 16.

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.

In addition to these minimum capital requirements, the following combined capital buffer requirements are fully effective beginning 2019. The G-SII buffer requirement is 2.00 % CET 1 capital of RWA. The capital conservation buffer requirement implemented in Section 10c German Banking Act, based on Article 129 CRD is 2.50 % CET 1 capital of RWA in 2019. 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 of June 30, 2019, the countercyclical capital buffer rate was at 0.07 %.

Additionally, Deutsche Bank AG has been classified by BaFin as an “other systemically important institution” (O-SII) with an additional buffer requirement of 2.00 % that has to be met on a consolidated level. For Deutsche Bank, the O-SII buffer amounts to 2.00 % in 2019. Unless certain exceptions apply, only the higher of the systemic risk buffer (currently not applicable), G-SII buffer and O-SII buffer must be applied.

On February 8, 2019, Deutsche Bank was informed by ECB of its decision regarding prudential minimum capital requirements for 2019, following the results of the 2018 SREP. Beginning from January 1, 2019, the decision requires Deutsche Bank to maintain a CET 1 ratio, which as of June 30, 2019 is at least 11.82 % on a consolidated basis. This CET 1 capital requirement comprises the Pillar 1 minimum capital requirement of 4.50 %, the pillar 2 requirement (SREP Add-on) of 2.75 %, the capital conservation buffer of 2.50 %, the countercyclical buffer (currently 0.07 %) and the G-SII buffer of 2.00 %.

Further information about minimum capital requirements, additional capital buffers as well as Pillar 2 requirements (SREP) applicable to us can be found in our Annual Report 2018.

Credit risk and credit risk mitigation

General qualitative information on credit risk

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

Loans 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 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).

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" in our Annual Report 2018 on page 223 and 61.

General quantitative information on credit risk

Article 442 (c-e) CRR - Defaulted exposures by regulatory exposure class, industry and geographical area, non-performing and forborne exposures

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

								Jun 30, 2019						
								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, 2019 ¹	Net values (a+b-c-d)							
1	Central governments and central banks	69	127,831	16	0	0	127,885							
2	Institutions	19	24,680	16	0	4	24,683							
3	Corporates	5,610	386,174	1,738	0	243	390,046							
	Of which:													
5	SMEs	478	18,558	236	0	54	18,801							
4	Specialized Lending	1,517	40,511	237	0	10	41,791							
5a	Other	3,615	327,105	1,266	0	89	329,454							
6	Retail	3,522	217,642	2,140	0	156	219,024							
	Of which:													
8	Secured by real estate property SMEs	112	9,201	60	0	1	9,253							
9	Secured by real estate property Non-SMEs	1,604	156,420	569	0	1	157,455							
10	Qualifying Revolving	76	16,305	70	0	6	16,312							
12	Other SMEs	260	5,703	236	0	20	5,728							
13	Other Non-SMEs	1,470	30,012	1,205	0	129	30,277							
14	Equity	1	2,067	0	0	0	2,068							
14a	Other non-credit obligation asset	0	10,034	0	0	0	10,033							
15	Total IRB approach	9,221	768,429	3,911	0	314	773,739							
16	Central governments or central banks	1	83,150	2	0	0	83,149							
17	Regional governments or local authorities	0	8,310	2	0	0	8,308							
18	Public sector entities	0	7,089	0	0	0	7,088							
19	Multilateral Development Banks	0	4,155	0	0	0	4,154							
20	International Organizations	0	2,295	0	0	0	2,295							
21	Institutions	0	2,747	10	0	0	2,737							
22	Corporates	624	18,960	72	0	6	19,512							
24	Retail	360	4,881	277	0	15	4,964							
26	Secured by mortgages on immovable property	208	4,502	15	0	0	4,694							
28	Exposures in default ²	1,402	0	429	0	19	973							
29	Items associated with particularly high risk	208	316	141	0	1	382							
30	Covered bonds	0	0	0	0	0	0							
31	Claims on institutions and corporates with a short- term credit assessment	0	0	0	0	0	0							
32	Collective investments undertakings (CIU)	0	0	0	0	0	0							
33	Equity exposures	0	52	0	0	0	52							
34	Other items	0	8	0	0	0	8							
35	Total standardized approach	1,402	136,464	522	0	22	137,344							
36	Total	10,622	904,893	4,433	0	336	911,082							
	Of which:													
37	Loans	9,649	399,837	4,029	0	316	405,457							
38	Debt Securities	180	70,250	21	0	5	70,410							
39	Off-balance sheet exposures	701	234,764	302	0	12	235,164							

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

² In line with EBA guidance (Q&A 2017_3481) we present the total of defaulted exposure in line 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.

							Dec 31, 2018						
							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, 2018 ¹	Net values (a+b-c-d)						
1	Central governments and central banks	87	118,377	19	0	0	118,444						
2	Institutions	23	26,195	11	0	2	26,207						
3	Corporates	4,901	378,166	1,690	0	241	381,377						
	Of which:												
5	SMEs	474	16,411	223	0	2	16,661						
4	Specialized Lending	1,545	33,532	279	0	36	34,797						
5a	Other	2,882	328,224	1,188	0	203	329,918						
6	Retail	3,713	216,626	2,275	0	130	218,063						
	Of which:												
8	Secured by real estate property SMEs	120	9,377	64	0	(8)	9,433						
9	Secured by real estate property Non-SMEs	1,608	155,268	579	0	(98)	156,297						
10	Qualifying Revolving	71	16,474	80	0	(10)	16,466						
12	Other SMEs	250	5,666	218	0	11	5,698						
13	Other Non-SMEs	1,664	29,840	1,335	0	231	30,169						
14	Equity	1	2,135	0	0	0	2,137						
14a	Other non-credit obligation asset	0	6,894	0	0	(1)	6,893						
15	Total IRB approach	8,724	748,393	3,996	0	375	753,121						
16	Central governments or central banks	0	112,425	2	0	(1)	112,424						
17	Regional governments or local authorities	0	10,088	3	0	1	10,085						
18	Public sector entities	3	5,333	1	0	(1)	5,336						
19	Multilateral Development Banks	0	3,344	0	0	0	3,344						
20	International Organizations	0	1,496	0	0	0	1,496						
21	Institutions	0	1,423	11	0	0	1,412						
22	Corporates	583	18,982	66	0	(8)	19,499						
24	Retail	433	4,178	331	0	1	4,280						
26	Secured by mortgages on immovable property	179	4,315	13	0	2	4,481						
28	Exposures in default ²	1,414	0	476	0	4	938						
29	Items associated with particularly high risk	216	264	141	0	(1)	339						
30	Covered bonds	0	0	0	0	0	0						
31	Claims on institutions and corporates with a short- term credit assessment	0	0	0	0	0	0						
32	Collective investments undertakings (CIU)	0	0	0	0	0	0						
33	Equity exposures	0	50	0	0	0	50						
34	Other items	0	12	0	0	0	12						
35	Total standardized approach	1,414	161,911	568	0	(7)	162,758						
36	Total	10,139	910,304	4,564	0	368	915,879						
	Of which:												
37	Loans	9,119	389,831	4,180	0	351	394,771						
38	Debt Securities	121	57,335	10	0	0	57,447						
39	Off-balance sheet exposures	721	240,290	283	0	(2)	240,728						

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

² In line with EBA guidance (Q&A 2017_3481) we present the total of defaulted exposure in line 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

		Jun 30, 2019						
		a	b	c	d	e	f	g
		Gross carrying values of					Credit risk adjustment charges of the period six months ended Jun 30, 2019 ¹	Net values (a+b-c-d)
in €m.		Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs		
1	Agriculture, forestry and fishing	51	1,391	12	0	2	(1)	1,430
2	Mining and quarrying	203	9,426	26	0	0	4	9,603
3	Manufacturing	1,284	90,506	617	0	83	65	91,173
4	Electricity, gas, steam and air conditioning supply	101	11,111	22	0	1	4	11,189
5	Water supply, sewerage, waste management and remediation activities	11	1,348	8	0	0	1	1,351
6	Construction	571	9,141	268	0	35	8	9,444
7	Wholesale and retail trade, repair of motor vehicles and motorcycles	692	39,166	456	0	129	66	39,402
8	Transport and storage	460	11,258	157	0	122	2	11,561
9	Accommodation and food service activities	118	4,084	26	0	0	1	4,176
10	Information and communication	218	23,828	77	0	6	8	23,969
10a	Financial and insurance activities	1,059	314,939	396	0	13	(1)	315,603
11	Real estate activities	880	48,271	174	0	15	3	48,976
12	Professional, scientific and technical activities	560	14,885	127	0	17	16	15,317
13	Administrative and support service activities	252	12,456	43	0	10	9	12,665
14	Public administration and defense, compulsory social security	70	54,836	18	0	0	(1)	54,887
15	Education	3	748	3	0	3	0	748
16	Human health services and social work activities	17	6,053	24	0	0	3	6,046
17	Arts, entertainment and recreation	8	1,994	11	0	1	2	1,991
18	Other service activities	139	22,363	42	0	11	22	22,460
18a	Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use	3,924	222,737	1,924	0	586	126	224,737
18b	Activities of extraterritorial organizations and bodies	1	4,352	1	0	0	0	4,352
19	Total	10,622	904,893	4,433	0	1,033	336	911,082

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

		Dec 31, 2018						
		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, 2018 ¹	Net values (a+b-c-d)
1	Agriculture, forestry and fishing	77	1,146	25	0	3	1	1,199
2	Mining and quarrying	195	11,109	26	0	24	14	11,278
3	Manufacturing	988	90,803	567	0	137	54	91,224
4	Electricity, gas, steam and air conditioning supply	90	10,551	30	0	2	(4)	10,611
5	Water supply, sewerage, waste management and remediation activities	11	1,337	8	0	0	0	1,340
6	Construction	541	9,278	294	0	46	19	9,525
7	Wholesale and retail trade, repair of motor vehicles and motorcycles	719	39,830	465	0	119	18	40,084
8	Transport and storage	612	12,153	221	0	308	23	12,545
9	Accommodation and food service activities	144	3,881	26	0	3	1	4,000
10	Information and communication	58	25,280	72	0	10	15	25,266
10a	Financial and insurance activities	1,245	341,052	328	0	19	113	341,968
11	Real estate activities	824	42,859	159	0	23	35	43,524
12	Professional, scientific and technical activities	364	16,709	107	0	44	(10)	16,967
13	Administrative and support service activities	133	13,128	35	0	12	7	13,227
14	Public administration and defense, compulsory social security	88	47,632	21	0	1	1	47,699
15	Education	8	637	9	0	6	0	637
16	Human health services and social work activities	30	5,545	21	0	0	(3)	5,553
17	Arts, entertainment and recreation	14	1,855	10	0	4	1	1,859
18	Other service activities	154	13,799	49	0	7	9	13,904
18a	Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use	3,842	221,234	2,092	0	648	72	222,984
18b	Activities of extraterritorial organizations and bodies	1	486	1	0	0	0	487
19	Total	10,139	910,304	4,564	0	1,416	368	915,879

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

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 regions 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

		Jun 30, 2019						
		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, 2019 ¹	Net values (a+b-c-d)
1	Europe	8,698	560,387	3,878	0	861	225	565,207
	Of which:							
2	Germany	3,755	372,711	1,875	0	424	90	374,590
3	United Kingdom	354	23,935	54	0	9	13	24,235
4	France	28	11,455	20	0	1	4	11,463
5	Luxembourg	66	20,617	23	0	0	5	20,660
6	Italy	1,538	30,369	1,108	0	122	67	30,798
7	Netherlands	465	20,640	216	0	48	4	20,890
8	Spain	951	23,652	401	0	203	23	24,202
9	Ireland	648	5,478	38	0	(2)	3	6,088
10	Switzerland	509	19,591	27	0	1	1	20,074
11	Poland	75	5,400	39	0	3	1	5,435
12	Belgium	7	6,355	4	0	1	0	6,358
13	Other Europe	302	20,184	72	0	51	14	20,414
14	North America	935	240,883	263	0	45	45	241,556
	Of which:							
15	U.S.	529	224,061	232	0	45	42	224,358
16	Cayman Islands	158	3,595	8	0	0	1	3,745
17	Canada	23	4,133	9	0	0	2	4,147
18	Other North America	226	9,096	15	0	0	1	9,306
19	Asia/Pacific	796	85,338	229	0	44	24	85,905
	Of which:							
20	Japan	89	13,042	(3)	0	(2)	(1)	13,134
21	Australia	68	4,357	9	0	0	1	4,415
22	India	423	16,021	119	0	4	10	16,326
23	China	1	8,594	3	0	28	11	8,591
24	Singapore	27	9,660	10	0	0	1	9,676
25	Hong Kong	91	8,491	5	0	0	1	8,577
26	Other Asia/Pacific	96	25,174	85	0	14	2	25,185
27	Other geographical areas	194	18,285	63	0	83	43	18,415
28	Total	10,622	904,893	4,433	0	1,033	336	911,082

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

		Dec 31, 2018						
		a	b	c	d	e	f	g
		Gross carrying values of					Credit risk adjustment charges of the period six months ended Dec 31, 2018 ¹	Net values (a+b-c-d)
in €m.		Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs		
1	Europe	8,661	578,036	3,972	0	1,222	199	582,725
	Of which:							
2	Germany	3,578	391,557	1,906	0	376	97	393,228
3	United Kingdom	393	23,033	46	0	18	4	23,380
4	France	13	11,576	13	0	3	2	11,576
5	Luxembourg	25	20,934	17	0	0	8	20,942
6	Italy	1,612	30,155	1,126	0	291	23	30,640
7	Netherlands	509	20,041	261	0	30	14	20,289
8	Spain	1,146	23,120	397	0	351	41	23,869
9	Ireland	552	6,063	28	0	1	13	6,587
10	Switzerland	326	17,934	25	0	0	0	18,235
11	Poland	64	6,188	41	0	31	(22)	6,212
12	Belgium	7	5,014	3	0	2	(2)	5,018
13	Other Europe	437	22,420	108	0	119	21	22,748
14	North America	633	243,035	240	0	119	105	243,428
	Of which:							
15	U.S.	251	227,332	199	0	95	93	227,383
16	Cayman Islands	137	3,062	8	0	0	3	3,191
17	Canada	27	3,677	7	0	0	5	3,697
18	Other North America	218	8,964	25	0	24	4	9,157
19	Asia/Pacific	604	74,191	266	0	22	36	74,529
	Of which:							
20	Japan	100	7,225	(3)	0	(11)	1	7,328
21	Australia	30	3,957	8	0	0	2	3,979
22	India	319	14,107	135	0	9	8	14,291
23	China	23	8,333	27	0	0	2	8,329
24	Singapore	41	10,282	10	0	0	5	10,312
25	Hong Kong	7	6,633	5	0	0	2	6,635
26	Other Asia/Pacific	85	23,654	84	0	23	15	23,655
27	Other geographical areas	241	15,042	86	0	54	28	15,197
28	Total	10,139	910,304	4,564	0	1,416	368	915,879

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

in €m.	Jun 30, 2019			Dec 31, 2018		
	1	2	3	1	2	3
	Loans	Debt Securities	Total exposures	Loans	Debt Securities	Total exposures
a ≤ 30 days	2,952	0	2,952	2,235	0	2,235
b > 30 days ≤ 60 days	575	0	575	437	0	437
c > 60 days ≤ 90 days	318	0	318	289	0	289
d > 90 days ≤ 180 days	1,035	0	1,035	817	0	817
e > 180 days ≤ 1 year	677	0	677	650	0	650
f > 1 year	2,210	1	2,211	2,383	0	2,383

Table EU CR1-E provides details of the Group's non-performing and forborne exposures as per EBA definitions as well as of 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 2018 on page 123.

EU CR1-E – Non-performing and forborne exposures

in € m.	Jun 30, 2019			Dec 31, 2018		
	010	020	030	010	020	030
	Debt securities	Loans and advances	Off-balance-sheet exposures	Debt securities	Loans and advances	Off-balance-sheet exposures
a	69,558	806,302	254,258	57,555	785,342	261,705
b	0	648	0	0	529	0
c	0	2,052	189	0	1,794	184
d	182	10,018	760	87	9,458	730
e	182	9,794	759	87	9,236	729
f	141	9,582	730	77	9,040	719
g	10	3,151	123	6	2,989	80
h	19	1,088	208	10	1,023	200
i	0	61	2	0	64	2
j	2	3,029	89	0	3,256	83
k	0	935	6	0	963	3
l	0	3,753	95	0	3,284 ¹	55 ¹
m	0	2,117	38	0	2,000	65

¹ Collaterals & financial guarantees received on Loans & advances and Off-balance sheet exposures for December 31, 2018 have been restated.

The following tables (NPL1, 3 and 4) are of 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 its 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, exposures 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.

NPL1 – Credit quality of forborne exposures

in € m.	Jun 30, 2019						
	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
	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	
Loans and advances	2,052	3,151	3,058	3,058	61	935	2,117
Central banks	0	0	0	0	0	0	0
General governments	0	5	5	5	0	3	0
Credit institutions	2	0	0	0	0	0	0
Other financial corporations	102	51	50	50	1	34	69
Non-financial corporations	1,033	1,987	1,967	1,967	19	652	1,243
Households	915	1,107	1,037	1,037	40	246	805
Debt securities	0	10	10	0	0	0	0
Loan commitments given	189	123	123	0	2	6	38
Total	2,240	3,284	3,191	3,058	62	941	2,155

Dec 31, 2018

in € m.	Gross carrying amount of forbore exposures				Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions		Collateral received and financial guarantees received on forbore exposures
	Performing forbore	Non-performing forbore	Non-performing forbore, of which defaulted	Non-performing forbore, of which impaired	on performing forbore exposures	on non-performing forbore exposures	
Loans and advances	1,794	2,989	2,885	2,878	64	963	2,000
Central banks	0	0	0	0	0	0	0
General governments	0	5	5	5	0	3	0
Credit institutions	2	0	0	0	0	0	0
Other financial corporations	17	57	56	56	0	12	20
Non-financial corporations	813	1,858	1,836	1,829	25	632	1,160
Households	961	1,068	988	988	39	316	820
Debt securities	0	6	6	0	0	0	0
Loan commitments given	184	80	80	0	2	3	65
Total	1,978	3,075	2,971	2,878	66	966	2,065

NPL4 - Performing and non-performing exposures and related provisions

Jun 30, 2019

in € m.	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 negative changes in fair value due to credit risk and provisions			Accumulated partial write-off	Collaterals and financial guarantees received on non-performing exposures	
		Total	of which: stage 2		of which: stage 3	Total	of which: stage 2			of which: stage 3
Loans and advances										
Central banks	161,092	0	0	0	2	0	0	0	0	
General governments	18,192	69	0	69	9	4	0	4	0	
Credit institutions	66,238	4	0	4	22	0	0	0	0	
Other financial corporations	185,851	1,194	117	1,077	55	122	0	121	7	
Non-financial corporations	172,996	4,797	144	4,653	349	1,662	1	1,661	157	
of which: SMEs	22,078	1,194	10	1,184	59	610	0	0	0	
Households	191,915	3,954	175	3,779	652	1,242	5	1,237	29	
Total Loans and advances	796,284	10,018	436	9,582	1,088	3,029	6	3,023	193	3,753
Debt securities										
Central banks	1,354	0	0	0	0	0	0	0	0	
General governments	42,205	0	0	0	4	0	0	0	0	
Credit institutions	14,965	0	0	0	1	0	0	0	0	
Other financial corporations	4,113	93	2	92	7	0	0	0	0	
Non-financial corporations	6,739	88	39	50	5	2	0	2	0	
Total Debt securities	69,376	182	40	142	19	2	0	2	0	0
Off-balance sheet exposures										
Central banks	175	0	0	0	0	0	0	0	0	
General governments	1,238	0	0	0	1	0	0	0	0	
Credit institutions	6,283	4	0	4	4	0	0	0	0	
Other financial corporations	44,831	15	0	15	24	0	0	0	0	
Non-financial corporations	170,267	700	30	670	160	79	1	79	0	
Households	30,704	42	1	41	18	9	(0)	9	0	
Total Off-balance sheet exposures	253,498	760	30	730	208	89	1	88	0	95
Total	1,119,158	10,960	507	10,453	1,315	3,119	6	3,113	193	3,848

Dec 31, 2018

in € m.	Gross carrying amount/nominal amount				Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions					Collaterals and financial guarantees received on non-performing exposures
	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			Accumulated partial write-off		
		Total	of which: stage 2		of which: stage 3	Total	of which: stage 2		of which: stage 3	
Loans and advances										
Central banks	188,441	19	0	19	5	0	0	0	0	0
General governments	16,954	84	3	80	11	5	0	5	0	56
Credit institutions	50,999	0	0	0	19	0	0	0	0	0
Other financial corporations	169,514	973	159	813	58	79	0	79	4	49
Non-financial corporations	161,648	4,497	158	4,339	324	1,690	1	1,689	122	1,430
of which: SMEs	20,130	1,241	12	1,229	56	647	0	0	0	486
Households	188,328	3,885	98	3,788	606	1,482	5	1,477	19	1,750
Total Loans and advances	775,884	9,458	418	9,040	1,023	3,256	6	3,250	144	3,284
Debt securities										
Central banks	1,443	0	0	0	0	0	0	0	0	0
General governments	35,540	0	0	0	4	0	0	0	0	0
Credit institutions	11,794	0	0	0	1	0	0	0	0	0
Other financial corporations	3,529	28	0	28	2	0	0	0	0	0
Non-financial corporations	5,162	59	10	49	2	0	0	0	0	0
Total Debt securities	57,468	87	10	77	10	0	0	0	0	0
Off-balance sheet exposures										
Central banks	98	0	0	0	0	0	0	0	0	0
General governments	1,318	0	0	0	1	0	0	0	0	0
Credit institutions	6,732	4	0	4	2	0	0	0	0	0
Other financial corporations	47,111	232	0	232	21	0	0	0	0	1
Non-financial corporations	175,516	461	10	451	162	80	0	80	0	53
Households	30,201	33	0	32	12	3	0	3	0	2
Total Off-balance sheet exposures	260,975	730	10	719	200	83	0	83	0	55
Total	1,094,327	10,275	439¹	9,836¹	1,232	3,339	6	3,333	144	3,340

¹ The Total numbers for Non-performing exposures of which stage 2 and of which stage 3 have been restated.

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

Jun 30, 2019

in € m.	Performing exposures			Non-performing exposure							
	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 <=5yrs	Past due >5 years	of which defaulted	of which impaired
Loans and advances											
Central banks	161,092	161,092	0	0	0	0	0	0	0	0	0
General governments	18,192	18,192	0	69	68	0	0	0	1	69	69
Credit institutions	66,238	66,193	45	4	4	0	0	0	0	4	4
Other financial corporations	185,851	185,833	18	1,194	1,038	36	70	46	4	1,184	1,077
Non-financial corporations	172,996	172,798	199	4,797	3,045	589	157	559	446	4,662	4,653
Households	191,915	191,529	387	3,954	2,017	348	447	778	364	3,875	3,779
Total Loans and advances	796,284	795,636	648	10,018	6,172	973	675	1,383	815	9,794	9,582
Debt securities											
Central banks	1,354	1,354	0	0	0	0	0	0	0	0	0
General governments	42,205	42,205	0	0	0	0	0	0	0	0	0
Credit institutions	14,965	14,965	0	0	0	0	0	0	0	0	0
Other financial corporations	4,113	4,113	0	93	93	0	0	0	0	93	92
Non-financial corporations	6,739	6,739	0	88	88	0	0	0	0	88	50
Total Debt securities	69,376	69,376	0	182	182	0	0	0	0	182	142
Off-balance sheet exposures											
Central banks	175	0	0	0	0	0	0	0	0	0	0
General governments	1,238	0	0	0	0	0	0	0	0	0	0
Credit institutions	6,283	0	0	4	0	0	0	0	0	4	4
Other financial corporations	44,831	0	0	15	0	0	0	0	0	15	15
Non-financial corporations	170,267	0	0	700	0	0	0	0	0	700	670
Households	30,704	0	0	42	0	0	0	0	0	41	41
Total Off-balance sheet exposures	253,498	0	0	760	0	0	0	0	0	759	730
Total	1,119,158	865,012	648	10,960	6,354	973	675	1,383	815	10,735	10,453

Dec 31, 2018

in €m.	Performing exposures				Non-performing exposure						
	Total	Not past due or past due <= 30 days	Past due >30d and <=90 d	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 >7yrs	of which defaulted	of which impaired
Loans and advances											
Central banks	188,441	188,441	0	19	19	0	0	0	0	19	19
General governments	16,954	16,954	0	84	82	0	0	0	1	84	80
Credit institutions	50,999	50,999	0	0	0	0	0	0	0	0	0
Other financial corporations	169,514	169,491	24	973	830	39	50	50	3	946	813
Non-financial corporations	161,648	161,542	106	4,497	2,884	456	172	593	392	4,394	4,339
Households	188,328	187,929	399	3,885	1,742	316	426	1,050	352	3,793	3,788
Total Loans and advances	775,884	775,356	529	9,458	5,558	811	648	1,693	748	9,236	9,040
Debt securities											
Central banks	1,443	1,443	0	0	0	0	0	0	0	0	0
General governments	35,540	35,540	0	0	0	0	0	0	0	0	0
Credit institutions	11,794	11,794	0	0	0	0	0	0	0	0	0
Other financial corporations	3,529	3,529	0	28	28	0	0	0	0	28	28
Non-financial corporations	5,162	5,162	0	59	59	0	0	0	0	59	49
Total Debt securities	57,468	57,468	0	87	87	0	0	0	0	87	77
Off-balance sheet exposures											
Central banks	98	0	0	0	0	0	0	0	0	0	0
General governments	1,318	0	0	0	0	0	0	0	0	0	0
Credit institutions	6,732	0	0	4	0	0	0	0	0	4	4
Other financial corporations	47,111	0	0	232	0	0	0	0	0	232	232
Non-financial corporations	175,516	0	0	461	0	0	0	0	0	461	451
Households	30,201	0	0	33	0	0	0	0	0	32	32
Total Off-balance sheet exposures	260,975	0	0	730	0	0	0	0	0	729	719
Total	1,094,327	832,823	529	10,275	5,645	811	648	1,693	748	10,052	9,836

Article 442 (f) 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 first half of 2019 compared to the second half of 2018. 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

	Jun 30, 2019		Dec 31, 2018	
	a	b	a	b
	Accumulated specific credit risk adjustment	Accumulated general credit risk adjustment	Accumulated specific credit risk adjustment	Accumulated general credit risk adjustment
in €m.				
1 Opening balance	3,250	0	3,503	0
2 Increases due to amounts set aside for estimated loan losses during the period	816	0	668	0
3 Decreases due to amounts reversed for estimated loan losses during the period	(589)	0	(315)	0
4 Decreases due to amounts taken against accumulated credit risk adjustments	(463)	0	(598)	0
5 Transfers between credit risk adjustments	5	0	(73)	0
6 Impact of exchange rate differences	4	0	15	0
7 Business combinations, including acquisitions and disposals of subsidiaries	0	0	0	0
8 Other adjustments	2	0	51	0
9 Closing balance	3,025	0	3,250	0
10 Recoveries on credit risk adjustments recorded directly to the statement of profit or loss	(41)	0	(62)	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 decreased by €225 million or 7 % driven by a portfolio sale in former Postbank along with disposals in the shipping business.

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 first half of 2019 compared to the second half of 2018. 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

	Jun 30, 2019	Dec 31, 2018
	a	a
	Gross carrying value defaulted exposures	Gross carrying value defaulted exposures
in €m.		
1 Opening balance	9,240	10,106
2 Loans and debt securities that have defaulted or impaired since the last reporting period	2,186	1,613
3 Returned to non-defaulted status	(1,148)	(1,904)
4 Amounts written off	(463)	(598)
5 Other changes	13	23
6 Closing balance	9,829	9,240

Defaulted or impaired loans and debt securities subject to the credit risk framework increased by €589 million or 6 % driven by the held-for-trading assets along with the defaults on single positions in the Wealth Management sector.

For IFRS-based asset quality information please refer to the section "Asset quality" in our Interim Report 2019.

General quantitative information on credit risk mitigation

Article 453 (f-j) 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 of the secured exposures. Moreover, no overcollateralization is considered.

EU CR3 – CRM techniques – Overview

		Jun 30, 2019				
		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	131,128	274,329	236,143	16,564	761
2	Total Debt securities	69,673	737	314	416	0
3	Total exposures	200,801	275,066	236,457	16,979	761
4	of which: defaulted	2,864	4,013	3,342	230	0

		Dec 31, 2018				
		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	122,182	272,589	230,734	15,911	787
2	Total Debt securities	56,981	465	49	416	0
3	Total exposures	179,164	273,054	230,783	16,328	787
4	of which: defaulted	2,439	3,549	2,891	220	0

While comparing June 2019 with December 2018, loans and debt increased during the period. Loans primarily increased at amortized cost, driven by new client-driven activity during the period and increased drawdowns from existing facilities. The increase in debt securities was observed as a result of increased trading activities.

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 which are in default.

CRM techniques by exposure class

	Jun 30, 2019				
	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	125,064	2,817	102	2,281	0
Institutions	22,192	1,953	1,321	320	34
Corporates	244,104	139,020	89,968	18,060	5,003
of which:					
SMEs	9,027	9,688	5,716	1,810	0
Specialized lending	8,182	32,320	27,843	812	0
Other	226,895	97,012	56,409	15,438	5,003
Retail	61,896	157,128	140,503	2,254	0
of which:					
Secured by real estate property SMEs	928	8,325	6,959	175	0
Secured by real estate property non-SMEs	14,359	143,096	131,113	536	0
Qualifying revolving	16,252	60	32	1	0
Other retail SMEs	3,534	2,194	441	1,264	0
Other retail non-SMEs	26,823	3,454	1,959	279	0
Equity	2,068	0	0	0	0
Other non-credit obligation asset	10,033	0	0	0	0
Total advanced IRBA	465,356	300,919	231,894	22,915	5,037
Foundation IRBA					
Central governments and central banks	4	0	0	0	0
Institutions	538	0	0	0	0
Corporates	5,389	1,538	788	597	0
of which:					
SMEs	81	4	0	3	0
Specialized lending	520	769	756	0	0
Other	4,788	764	33	594	0
Total foundation IRBA	5,931	1,538	788	597	0
Standardized approach					
Central governments or central banks	83,147	2	1	1	0
Regional governments or local authorities	8,286	22	8	1	0
Public sector entities	7,088	1	0	0	0
Multilateral development banks	4,154	0	0	0	0
International organizations	2,295	0	0	0	0
Institutions	2,721	17	9	7	0
Corporates	15,012	4,495	4,109	94	0
Retail	4,353	611	370	65	0
Secured by mortgages on immovable property	(187)	4,881	4,411	58	0
Exposures in default ¹	599	374	357	12	0
Items associated with particularly high risk	(98)	480	464	5	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	52	0	0	0	0
Other items	8	0	0	0	0
Total standardized approach	126,831	10,508	9,372	232	0
Total	598,118	312,965	242,055	23,744	5,037

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.

	Dec 31, 2018				
	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	115,921	2,506	37	2,124	0
Institutions	21,347	4,220	3,363	346	47
Corporates	240,552	133,644	82,853	18,154	5,120
of which:					
SMEs	8,481	8,157	4,420	1,695	0
Specialized lending	6,044	27,262	23,171	761	0
Other	226,027	98,225	55,261	15,698	5,120
Retail	52,817	165,246	140,560	1,929	0
of which:					
Secured by real estate property SMEs	987	8,446	6,866	184	0
Secured by real estate property non-SMEs	7,194	149,103	128,959	320	0
Qualifying revolving	16,414	52	26	1	0
Other retail SMEs	3,550	2,148	483	1,165	0
Other retail non-SMEs	24,673	5,496	4,225	260	0
Equity	2,137	0	0	0	0
Other non-credit obligation asset	6,893	0	0	0	0
Total advanced IRBA	439,668	305,617	226,813	22,553	5,167
Foundation IRBA					
Central governments and central banks	17	0	0	0	0
Institutions	639	0	0	0	0
Corporates	4,867	2,314	1,212	665	0
of which:					
SMEs	23	0	0	0	0
Specialized lending	22	1,470	1,189	0	0
Other	4,822	844	23	665	0
Total foundation IRBA	5,523	2,314	1,212	665	0
Standardized approach					
Central governments or central banks	112,422	2	1	1	0
Regional governments or local authorities	10,050	35	13	15	0
Public sector entities	5,336	0	0	0	0
Multilateral development banks	3,344	0	0	0	0
International organizations	1,496	0	0	0	0
Institutions	1,394	18	11	7	0
Corporates	14,552	4,947	4,288	156	0
Retail	3,126	1,155	963	82	0
Secured by mortgages on immovable property	160	4,321	3,959	55	0
Exposures in default ¹	542	396	356	10	0
Items associated with particularly high risk	33	306	289	4	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	50	0	0	0	0
Other items	12	0	0	0	0
Total standardized approach	151,973	10,784	9,524	321	0
Total	597,164	318,714	237,549	23,538	5,167

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.

Credit risk exposure in the standardized approach

Article 444 (e) CRR - Credit risk exposure and credit risk mitigation in the standardized approach

The table below shows our credit risk exposure before credit conversion factors and credit risk mitigation obtained in the form of eligible financial collateral, guarantees and credit derivatives and 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

							Jun 30, 2019					
							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						83,170	55	83,218	12	1	0%
2	Regional government or local authorities						7,958	398	7,968	68	8	0.10%
3	Public sector entities						7,045	42	7,044	16	62	0.88%
4	Multilateral development banks						4,155	0	4,154	0	0	0%
5	International organizations						2,296	0	2,296	0	0	0%
6	Institutions						1,417	60	1,417	64	184	12.45%
7	Corporates						13,197	4,618	10,439	872	11,005	97.29%
8	Retail						3,115	1,531	2,691	56	2,040	74.26%
9	Secured by mortgages on immovable property						3,876	74	3,866	36	1,486	38.09%
10	Exposures in default						1,233	10	928	2	1,286	138.25%
11	Items associated with particularly high risk						505	21	182	1	274	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						52	0	52	0	52	100.00%
16	Other items						8	1,812	8	1,812	1,813	99.63%
17	Total						128,027	8,621	124,263	2,938	18,212	14.32%

							Dec 31, 2018					
							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
1	Central governments or central banks						113,545	15	113,584	11	2	0%
2	Regional government or local authorities						9,816	336	9,812	52	14	0.15%
3	Public sector entities						5,292	48	5,289	13	77	1.44%
4	Multilateral development banks						3,348	0	3,347	0	0	0%
5	International organizations						1,500	0	1,499	0	0	0%
6	Institutions						1,129	303	1,129	152	58	4.49%
7	Corporates						13,362	3,592	10,574	823	10,817	94.91%
8	Retail						3,193	1,492	2,925	32	2,196	74.25%
9	Secured by mortgages on immovable property						3,674	66	3,663	31	1,418	38.39%
10	Exposures in default						1,183	11	837	3	1,154	137.35%
11	Items associated with particularly high risk						275	26	137	1	208	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						50	0	50	0	50	100.00%
16	Other items						12	2,319	12	2,319	2,322	99.59%
17	Total						156,379	8,209	152,859	3,437	18,315	11.72%

¹ Please note that some of the %-figures show rounding differences compared to the 2018 Pillar 3 report.

In the following table 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 prior to the shift to the exposure class of the protection seller.

EU CR5 – Standardized approach

in €m.							Jun 30, 2019
							Risk Weight
Exposure classes		0%	2%	4%	10%	20%	35%
1	Central governments or central banks	83,228	0	0	0	0	0
2	Regional governments or local authorities	8,003	0	0	0	27	0
3	Public sector entities	6,762	0	0	0	289	0
4	Multilateral development banks	4,154	0	0	0	0	0
5	International organizations	2,296	0	0	0	0	0
6	Institutions	813	0	0	0	548	0
7	Corporates	0	0	0	0	314	0
8	Retail	0	0	0	0	0	0
9	Secured by mortgages on immovable property	0	0	0	0	0	3,096
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	8	0
17	Total	105,258	0	0	0	1,186	3,096

in €m.							Jun 30, 2019
							Risk Weight
Exposure classes		50%	70%	75%	100%	150%	250%
1	Central governments or central banks	0	0	0	1	0	0
2	Regional governments or local authorities	5	0	0	0	0	0
3	Public sector entities	9	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	88	0	0	30	0	0
7	Corporates	91	0	0	10,822	84	0
8	Retail	0	0	2,747	0	0	0
9	Secured by mortgages on immovable property	806	0	0	0	0	0
10	Exposures in default	0	0	0	218	711	0
11	Items associated with particularly high risk	0	0	0	0	183	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	52	0	0
16	Other items	0	0	0	1,812	0	0
17	Total	999	0	2,747	12,937	978	0

in €m.							Jun 30, 2019
		Risk Weight					Of which: unrated
Exposure classes		370%	1250%	Others	Deducted	Total	
1	Central governments or central banks	0	0	0	0	83,230	78,949
2	Regional governments or local authorities	0	0	0	0	8,036	4,424
3	Public sector entities	0	0	0	0	7,060	6,754
4	Multilateral development banks	0	0	0	0	4,154	3,715
5	International organizations	0	0	0	0	2,296	2,022
6	Institutions	0	0	0	0	1,480	1,448
7	Corporates	0	0	0	0	11,311	11,156
8	Retail	0	0	0	0	2,747	2,747
9	Secured by mortgages on immovable property	0	0	0	0	3,902	3,902
10	Exposures in default	0	0	0	0	930	930
11	Items associated with particularly high risk	0	0	0	0	183	183
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	52	52
16	Other items	0	0	0	0	1,820	1,820
17	Total	0	0	0	0	127,201	118,102

in €m.	Dec 31, 2018					
	Risk Weight					
Exposure classes	0%	2%	4%	10%	20%	35%
1 Central governments or central banks	113,592	0	0	0	0	0
2 Regional governments or local authorities	9,820	0	0	0	27	0
3 Public sector entities	4,993	0	0	0	267	0
4 Multilateral development banks	3,347	0	0	0	0	0
5 International organizations	1,499	0	0	0	0	0
6 Institutions	946	0	0	0	193	0
7 Corporates	0	0	0	0	762	0
8 Retail	0	0	0	0	0	0
9 Secured by mortgages on immovable property	0	0	0	0	0	2,772
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	12	0
17 Total	134,198	0	0	0	1,262	2,772

in €m.	Dec 31, 2018					
	Risk Weight					
Exposure classes	50%	70%	75%	100%	150%	250%
1 Central governments or central banks	3	0	0	0	0	0
2 Regional governments or local authorities	17	0	0	0	0	0
3 Public sector entities	36	0	0	5	0	0
4 Multilateral development banks	0	0	0	0	0	0
5 International organizations	0	0	0	0	0	0
6 Institutions	53	0	0	4	0	0
7 Corporates	42	0	0	10,465	116	0
8 Retail	0	0	2,941	0	0	0
9 Secured by mortgages on immovable property	896	0	0	0	0	0
10 Exposures in default	0	0	0	212	628	0
11 Items associated with particularly high risk	0	0	0	0	139	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	50	0	0
16 Other items	0	0	0	2,319	0	0
17 Total	1,047	0	2,941	13,056	882	0

in €m.	Dec 31, 2018					
	Risk Weight					Of which: unrated
Exposure classes	370%	1250%	Others	Deducted	Total	
1 Central governments or central banks	0	0	0	0	113,595	113,595
2 Regional governments or local authorities	0	0	0	0	9,865	9,847
3 Public sector entities	0	0	0	0	5,302	5,302
4 Multilateral development banks	0	0	0	0	3,347	3,347
5 International organizations	0	0	0	0	1,499	1,499
6 Institutions	0	0	0	0	1,196	1,161
7 Corporates	0	0	0	0	11,385	11,024
8 Retail	0	0	0	0	2,941	2,941
9 Secured by mortgages on immovable property	0	0	0	0	3,668	3,668
10 Exposures in default	0	0	0	0	840	840
11 Items associated with particularly high risk	0	0	0	0	139	139
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	50	50
16 Other items	0	0	0	0	2,331	2,331
17 Total	0	0	0	0	156,157	155,744

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

Quantitative information on the use of the IRB approach

Article 452 (f-h) 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 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, 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

Jun 30, 2019												
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
Central governments and central banks												
0.00 to <0.15	114,364	98	43.33	123,466	0.00	0.1	49.97	1.4	1,960	1.59	2	–
0.15 to <0.25	4,372	0	72.93	4,407	0.23	<0.1	50.00	1.7	1,993	45.23	5	–
0.25 to <0.50	284	103	99.97	201	0.39	<0.1	44.58	2.9	53	26.52	0	–
0.50 to <0.75	532	2	78.29	474	0.64	<0.1	45.67	1.6	327	69.00	2	–
0.75 to <2.50	269	84	29.11	130	1.36	<0.1	44.54	3.3	132	101.18	1	–
2.50 to <10.00	2,548	251	99.99	934	5.16	<0.1	48.51	4.0	621	66.47	5	–
10.00 to <100.00	421	138	100.00	59	13.00	<0.1	20.39	1.1	57	95.97	2	–
100.00 (Default)	69	0	0	10	100.00	<0.1	54.70	3.9	9	94.64	4	–
Sub-total	122,859	677	45.98	129,682	0.07	0.2	49.92	1.4	5,153	3.97	21	13
Dilution risk	27	0	100.00	27	10.45	0	2.41	1.0	3	10.18	0	0
Sub-total incl. dilution risk	122,885	677	45.98	129,709	0.07	0.2	49.91	1.4	5,156	3.98	21	13
Institutions												
0.00 to <0.15	13,437	4,155	38.14	18,610	0.06	0.5	44.72	1.6	2,097	11.27	3	–
0.15 to <0.25	960	289	36.02	1,030	0.23	0.1	32.85	1.5	344	33.37	1	–
0.25 to <0.50	489	285	33.53	614	0.39	0.1	44.35	0.8	314	51.14	1	–
0.50 to <0.75	946	309	47.12	1,280	0.64	0.1	30.25	2.5	781	61.05	3	–
0.75 to <2.50	1,017	233	41.82	1,021	1.47	0.1	39.74	1.2	540	52.93	2	–
2.50 to <10.00	1,070	206	64.04	1,028	3.18	<0.1	10.08	3.2	313	30.42	4	–
10.00 to <100.00	91	74	26.86	103	13.11	<0.1	5.27	1.0	25	24.05	1	–
100.00 (Default)	204	3	20.00	205	100.00	<0.1	0.86	1.3	20	9.80	0	–
Sub-total	18,215	5,556	38.37	23,889	1.21	0.8	41.17	1.7	4,434	18.56	15	7
Dilution risk	188	0	25.00	171	10.45	0	2.41	1.0	17	10.16	0	0
Sub-total incl. dilution risk	18,403	5,557	38.37	24,060	1.28	0.8	40.90	1.7	4,451	18.50	15	7
Corporates												
0.00 to <0.15	63,940	120,155	28.42	99,437	0.08	19.6	32.85	2.0	17,421	17.52	25	–
0.15 to <0.25	18,731	23,519	30.12	26,774	0.22	6.3	32.81	2.3	9,525	35.58	20	–
0.25 to <0.50	15,710	13,170	28.38	19,542	0.39	5.7	27.86	2.3	7,325	37.48	21	–
0.50 to <0.75	14,308	11,124	29.85	17,036	0.65	4.9	25.43	2.7	7,411	43.50	29	–
0.75 to <2.50	29,134	24,114	29.88	33,759	1.42	6.6	23.10	2.8	18,095	53.60	108	–
2.50 to <10.00	24,928	27,329	31.30	29,930	4.89	3.5	16.69	2.8	17,227	57.56	229	–
10.00 to <100.00	8,600	5,534	31.83	9,576	16.42	0.9	10.21	1.8	4,962	51.82	168	–
100.00 (Default)	10,119	1,168	55.21	10,387	100.00	1.7	40.65	2.0	2,402	23.12	4,353	–
Sub-total	185,471	226,113	29.32	246,441	5.77	49.2	28.09	2.3	84,367	34.23	4,954	4,845
Dilution risk	3,438	107	29.06	3,648	10.45	0	2.48	1.0	384	10.51	9	0
Sub-total incl. dilution risk	188,909	226,220	29.32	250,089	5.84	49.2	27.72	2.3	84,751	33.89	4,963	4,845

Jun 30, 2019

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
of which:												
SMEs												
0.00 to <0.15	4,519	3,009	30.47	5,667	0.08	6.4	31.08	2.8	965	17.03	2	–
0.15 to <0.25	1,860	907	41.70	2,204	0.22	2.6	36.97	2.9	759	34.44	2	–
0.25 to <0.50	1,690	979	35.79	1,977	0.39	2.6	33.08	2.8	789	39.92	3	–
0.50 to <0.75	1,247	652	35.42	1,435	0.65	2.1	39.89	2.9	908	63.29	4	–
0.75 to <2.50	1,901	911	28.66	2,061	1.42	2.9	36.66	2.8	1,486	72.11	12	–
2.50 to <10.00	1,121	515	33.95	1,059	4.78	1.3	32.11	2.6	905	85.46	18	–
10.00 to <100.00	240	60	21.58	209	19.02	0.2	42.52	2.4	358	171.29	16	–
100.00 (Default)	423	43	28.25	442	100.00	0.3	42.90	2.0	113	25.57	179	–
Sub-total	13,002	7,077	33.05	15,053	3.90	18.5	34.39	2.8	6,283	41.74	236	216
Dilution risk	1	0	0	17	10.45	0	2.43	1.0	2	10.78	0	0
Sub-total incl. dilution risk	13,003	7,077	33.05	15,069	3.91	18.5	34.35	2.8	6,285	41.71	236	216
Specialized Lending												
0.00 to <0.15	1,833	190	75.54	1,859	0.09	0.1	10.71	3.3	139	7.49	0	–
0.15 to <0.25	2,553	115	38.36	2,586	0.20	0.2	7.96	3.1	233	9.01	0	–
0.25 to <0.50	2,256	42	70.67	2,156	0.39	0.1	15.12	3.1	555	25.72	1	–
0.50 to <0.75	1,945	1,185	34.22	2,289	0.66	0.1	11.95	3.7	527	23.03	2	–
0.75 to <2.50	7,609	1,094	54.30	7,919	1.46	0.3	11.40	2.7	2,284	28.84	13	–
2.50 to <10.00	10,845	1,650	29.29	10,966	5.47	0.3	6.32	2.5	2,441	22.26	35	–
10.00 to <100.00	6,783	1,467	26.01	7,038	15.94	0.2	6.42	1.6	2,290	32.54	76	–
100.00 (Default)	2,404	54	25.33	2,404	100.00	0.2	44.75	1.8	445	18.50	853	–
Sub-total	36,229	5,798	36.44	37,217	11.48	1.3	11.09	2.5	8,914	23.95	980	955
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	36,229	5,798	36.44	37,217	11.48	1.3	11.09	2.5	8,914	23.95	980	955
Other												
0.00 to <0.15	57,588	116,956	28.30	91,911	0.08	13.2	33.26	1.9	16,317	17.75	23	–
0.15 to <0.25	14,318	22,496	29.61	21,984	0.23	3.6	35.31	2.2	8,533	38.81	18	–
0.25 to <0.50	11,764	12,148	27.64	15,409	0.39	3.0	28.98	2.1	5,981	38.81	17	–
0.50 to <0.75	11,116	9,287	28.90	13,313	0.64	2.7	26.19	2.4	5,975	44.89	23	–
0.75 to <2.50	19,623	22,109	28.76	23,779	1.41	3.4	25.82	2.9	14,325	60.24	84	–
2.50 to <10.00	12,961	25,163	31.39	17,905	4.55	1.9	22.13	3.0	13,881	77.53	176	–
10.00 to <100.00	1,577	4,008	33.87	2,329	17.65	0.5	18.78	2.3	2,314	99.35	77	–
100.00 (Default)	7,292	1,071	57.81	7,541	100.00	1.2	39.21	2.1	1,844	24.46	3,320	–
Sub-total	136,239	213,238	29.01	194,171	4.82	29.5	30.86	2.2	69,170	35.62	3,738	3,674
Dilution risk	3,437	107	29.06	3,631	10.45	0	2.48	1.0	382	10.51	9	0
Sub-total incl. dilution risk	139,676	213,345	29.01	197,802	4.92	29.5	30.34	2.2	69,552	35.16	3,747	3,674

Jun 30, 2019

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	25,839	16,334	62.56	35,499	0.09	2,728.2	14.90	10.0	1,410	3.97	8	–
0.15 to <0.25	32,322	6,276	74.31	36,633	0.22	1,282.9	16.10	6.5	2,865	7.82	16	–
0.25 to <0.50	36,266	4,440	60.94	39,044	0.39	858.9	17.11	7.4	4,732	12.12	28	–
0.50 to <0.75	35,512	3,484	68.01	37,969	0.67	918.1	18.60	7.0	7,293	19.21	52	–
0.75 to <2.50	35,346	3,646	68.88	37,960	1.46	1,481.3	24.32	8.1	13,586	35.79	147	–
2.50 to <10.00	18,045	1,804	77.79	19,246	4.53	860.1	28.63	6.2	11,481	59.65	261	–
10.00 to <100.00	3,810	174	69.03	3,841	20.15	187.9	29.16	5.9	3,869	100.73	239	–
100.00 (Default)	3,980	45	55.22	4,163	100.00	158.5	41.66	2.8	1,104	26.52	1,891	–
Sub-total	191,120	36,203	66.75	214,354	3.21	8,475.8	19.84	7.5	46,340	21.62	2,641	2,599
Dilution risk	0	0	0	0	0	0	0	0	0	N/M	0	0
Sub-total incl. dilution risk	191,120	36,203	66.75	214,354	3.21	8,475.8	19.84	7.5	46,340	21.62	2,641	2,599
of which:												
Secured by real estate property SMEs												
0.00 to <0.15	1,434	143	59.87	1,516	0.12	7.1	11.74	14.7	45	2.96	0	–
0.15 to <0.25	1,562	112	56.40	1,621	0.23	7.7	11.29	14.9	75	4.65	0	–
0.25 to <0.50	1,743	100	57.82	1,790	0.39	8.4	11.38	15.0	124	6.90	1	–
0.50 to <0.75	1,429	75	54.07	1,459	0.64	7.2	11.22	15.0	139	9.51	1	–
0.75 to <2.50	1,623	70	52.05	1,633	1.34	8.4	11.55	15.3	257	15.77	3	–
2.50 to <10.00	715	30	48.35	706	4.39	3.6	10.99	14.4	211	29.88	3	–
10.00 to <100.00	144	4	54.36	141	20.89	0.9	11.46	14.1	80	56.94	3	–
100.00 (Default)	111	0	9.95	115	100.00	0.4	35.56	10.5	21	18.14	47	–
Sub-total	8,763	534	56.27	8,982	2.44	43.7	11.71	14.9	952	10.60	59	60
Dilution risk	0	0	0	0	0	0	0	0	0	N/M	0	0
Sub-total incl. dilution risk	8,763	534	56.27	8,982	2.44	43.7	11.71	14.9	952	10.60	59	60
Secured by real estate property non-SMEs												
0.00 to <0.15	22,134	640	64.74	22,569	0.10	231.3	12.43	14.1	783	3.47	3	–
0.15 to <0.25	28,475	1,274	84.97	29,562	0.22	243.5	14.69	6.7	2,073	7.01	10	–
0.25 to <0.50	31,640	1,441	80.65	32,802	0.39	252.2	14.86	7.5	3,566	10.87	20	–
0.50 to <0.75	30,447	1,655	80.47	31,773	0.67	229.4	15.59	7.1	5,443	17.13	36	–
0.75 to <2.50	23,759	2,009	84.11	25,448	1.42	193.3	14.45	9.7	6,591	25.90	55	–
2.50 to <10.00	9,576	1,138	93.70	10,660	4.53	87.3	13.49	8.0	5,007	46.97	69	–
10.00 to <100.00	2,045	82	92.00	2,120	19.98	16.8	14.85	8.1	1,922	90.64	68	–
100.00 (Default)	1,553	12	80.18	1,645	100.00	14.0	20.90	4.9	584	35.52	364	–
Sub-total	149,629	8,250	82.80	156,579	2.13	1,267.8	14.53	8.6	25,970	16.59	625	569
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	149,629	8,250	82.80	156,579	2.13	1,267.8	14.53	8.6	25,970	16.59	625	569

Jun 30, 2019

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
Qualifying Revolving												
0.00 to <0.15	73	10,216	88.47	7,267	0.07	2,244.9	11.40	0.0	205	2.83	3	–
0.15 to <0.25	88	3,079	91.84	2,311	0.19	835.4	6.14	0.0	159	6.89	3	–
0.25 to <0.50	132	989	79.25	800	0.38	396.4	15.13	0.0	88	11.02	2	–
0.50 to <0.75	165	644	73.39	580	0.67	422.5	18.37	0.0	100	17.27	2	–
0.75 to <2.50	272	531	71.14	609	1.49	454.4	22.21	0.0	189	31.04	5	–
2.50 to <10.00	188	185	73.57	306	4.66	239.2	23.48	0.0	229	74.98	8	–
10.00 to <100.00	53	18	73.06	64	20.17	49.5	25.96	0.0	95	148.13	7	–
100.00 (Default)	41	2	61.87	42	100.00	29.0	33.25	0.0	23	55.16	29	–
Sub-total	1,011	15,664	86.94	11,979	0.79	4,671.3	11.98	0.0	1,090	9.10	59	70
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	1,011	15,664	86.94	11,979	0.79	4,671.3	11.98	0.0	1,090	9.10	59	70
Other retail SMEs												
0.00 to <0.15	404	2,406	17.93	1,068	0.11	33.9	42.35	3.8	99	9.30	0	–
0.15 to <0.25	418	1,072	26.76	804	0.23	37.5	41.21	4.0	125	15.58	1	–
0.25 to <0.50	563	1,186	21.48	938	0.39	38.0	45.20	3.6	228	24.30	2	–
0.50 to <0.75	576	579	28.40	861	0.65	25.0	51.67	2.9	319	37.07	3	–
0.75 to <2.50	966	565	30.73	1,250	1.36	24.8	53.53	3.0	664	53.14	10	–
2.50 to <10.00	694	276	31.65	600	4.52	14.6	53.58	2.5	409	68.18	15	–
10.00 to <100.00	193	41	29.75	120	22.28	4.5	50.81	2.6	119	99.05	15	–
100.00 (Default)	255	11	38.16	298	100.00	3.6	60.31	3.0	95	31.99	197	–
Sub-total	4,071	6,136	23.27	5,939	6.42	182.0	48.56	3.3	2,059	34.67	242	236
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	4,071	6,136	23.27	5,939	6.42	182.0	48.56	3.3	2,059	34.67	242	236
Other retail non-SMEs												
0.00 to <0.15	1,793	2,929	30.70	3,078	0.09	375.8	33.28	3.6	277	9.01	1	–
0.15 to <0.25	1,779	739	66.18	2,335	0.22	226.8	38.46	4.2	431	18.47	2	–
0.25 to <0.50	2,188	724	65.47	2,713	0.39	233.6	38.86	4.8	726	26.76	4	–
0.50 to <0.75	2,894	530	66.99	3,295	0.67	295.0	42.38	4.0	1,292	39.22	10	–
0.75 to <2.50	8,726	472	47.81	9,021	1.59	885.1	50.59	3.6	5,884	65.23	74	–
2.50 to <10.00	6,871	175	51.41	6,974	4.55	557.1	51.64	3.3	5,625	80.65	165	–
10.00 to <100.00	1,374	30	53.30	1,396	20.15	125.3	50.97	2.3	1,654	118.43	146	–
100.00 (Default)	2,020	20	49.96	2,062	100.00	115.4	53.87	0.8	380	18.44	1,255	–
Sub-total	27,646	5,619	45.58	30,875	9.21	2,814.1	46.66	3.5	16,270	52.69	1,656	1,663
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	27,646	5,619	45.58	30,875	9.21	2,814.1	46.66	3.5	16,270	52.69	1,656	1,663
All exposure classes												
Dilution risk	3,653	107	29.07	3,845	10.45	0.4	2.47	1.0	404	10.50	10	0
Total incl. dilution risk	521,317	268,656	35.01	618,211	3.54	8,525.0	30.15	3.9	140,699	22.76	7,641	7,464

Dec 31, 2018

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
Central governments and central banks												
0.00 to <0.15	107,189	250	41.68	115,108	0.01	0.1	49.97	3.4	1,598	1.39	3	–
0.15 to <0.25	3,496	0	100.00	3,527	0.23	<0.1	50.00	1.5	1,547	43.86	4	–
0.25 to <0.50	837	110	100.00	762	0.39	<0.1	50.00	1.4	450	59.04	1	–
0.50 to <0.75	289	0	99.86	276	0.64	<0.1	49.58	1.1	199	71.83	1	–
0.75 to <2.50	307	80	33.92	150	1.23	<0.1	43.68	2.4	148	98.62	1	–
2.50 to <10.00	1,144	263	100.00	513	4.35	<0.1	48.41	2.7	438	85.27	5	–
10.00 to <100.00	496	65	100.00	43	13.00	<0.1	19.96	1.5	40	92.83	2	–
100.00 (Default)	88	0	0	32	100.00	<0.1	22.91	3.2	22	68.72	5	–
Sub-total	113,845	769	44.74	120,412	0.07	0.2	49.94	3.3	4,441	3.69	21	21
Dilution risk	44	4	100.00	48	10.45	0	2.42	1.0	5	10.18	0	0
Sub-total incl. dilution risk	113,889	773	44.81	120,460	0.07	0.2	49.92	3.3	4,446	3.69	21	21
Institutions												
0.00 to <0.15	13,177	4,857	40.40	19,491	0.05	0.5	45.35	1.7	2,204	11.31	3	–
0.15 to <0.25	618	485	38.67	785	0.23	0.1	27.10	1.6	213	27.09	1	–
0.25 to <0.50	581	393	49.04	801	0.39	0.1	29.53	1.6	368	45.89	1	–
0.50 to <0.75	879	209	61.27	1,167	0.64	<0.1	30.48	2.5	675	57.84	2	–
0.75 to <2.50	1,512	292	40.96	1,562	1.57	0.1	21.22	1.2	620	39.73	4	–
2.50 to <10.00	1,242	263	75.07	1,354	3.44	<0.1	10.83	2.6	413	30.49	5	–
10.00 to <100.00	118	68	21.19	126	13.77	<0.1	4.48	1.1	28	22.30	1	–
100.00 (Default)	263	4	28.87	264	100.00	<0.1	17.25	1.5	19	7.14	44	–
Sub-total	18,390	6,572	41.27	25,551	1.47	0.8	39.82	1.7	4,540	17.77	61	55
Dilution risk	104	0	0	104	10.45	0	2.41	1.0	11	10.16	0	0
Sub-total incl. dilution risk	18,494	6,572	41.27	25,655	1.51	0.8	39.66	1.7	4,550	17.74	61	55
Corporates												
0.00 to <0.15	57,688	123,134	27.73	92,905	0.08	19.2	31.46	2.0	16,446	17.70	26	–
0.15 to <0.25	19,136	24,353	30.08	26,753	0.23	6.2	33.77	2.2	9,031	33.76	20	–
0.25 to <0.50	14,618	15,409	29.56	19,272	0.39	5.8	26.50	2.3	6,809	35.33	19	–
0.50 to <0.75	14,042	11,422	31.71	17,022	0.65	4.7	24.63	2.5	7,189	42.23	31	–
0.75 to <2.50	26,568	24,270	31.13	32,188	1.46	6.5	23.45	2.9	17,119	53.18	106	–
2.50 to <10.00	22,381	27,022	32.21	27,750	4.84	3.6	19.12	2.7	17,590	63.39	230	–
10.00 to <100.00	7,895	4,873	31.27	8,774	17.62	0.9	9.68	1.9	4,265	48.61	150	–
100.00 (Default)	7,462	794	50.78	7,675	100.00	1.3	42.91	1.8	1,515	19.74	3,089	–
Sub-total	169,789	231,278	29.26	232,339	4.89	48.1	27.79	2.3	79,965	34.42	3,671	3,087
Dilution risk	4,214	605	33.64	4,578	10.45	0	2.47	1.0	476	10.41	12	0
Sub-total incl. dilution risk	174,003	231,883	29.27	236,917	4.99	48.1	27.30	2.3	80,441	33.95	3,683	3,087

Dec 31, 2018

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
of which:												
SMEs												
0.00 to <0.15	3,149	3,082	29.89	4,220	0.09	6.1	34.43	2.9	822	19.47	1	–
0.15 to <0.25	1,343	897	39.00	1,734	0.23	2.3	36.04	3.0	560	32.31	1	–
0.25 to <0.50	1,464	939	35.37	1,705	0.39	2.5	33.33	2.9	669	39.25	2	–
0.50 to <0.75	1,269	738	34.74	1,410	0.65	2.1	36.75	3.2	784	55.56	3	–
0.75 to <2.50	1,940	827	30.99	1,937	1.44	2.7	36.95	2.8	1,361	70.26	10	–
2.50 to <10.00	1,020	499	33.48	934	4.72	1.3	31.71	2.7	728	78.00	14	–
10.00 to <100.00	254	66	18.27	215	20.64	0.3	27.65	2.8	250	116.27	13	–
100.00 (Default)	475	61	24.62	456	100.00	0.3	44.69	1.6	104	22.70	196	–
Sub-total	10,914	7,107	32.54	12,612	4.73	17.5	35.21	2.9	5,277	41.84	242	227
Dilution risk	2	0	0	5	10.45	0	5.09	1.0	1	21.48	0	0
Sub-total incl. dilution risk	10,916	7,107	32.54	12,617	4.73	17.5	35.19	2.9	5,278	41.84	242	227
Specialized Lending												
0.00 to <0.15	1,433	8	24.33	1,374	0.09	0.1	4.94	3.4	52	3.81	0	–
0.15 to <0.25	2,136	121	46.04	2,180	0.22	0.1	9.22	3.0	225	10.33	0	–
0.25 to <0.50	1,920	30	82.60	1,729	0.39	0.1	14.51	3.4	456	26.40	1	–
0.50 to <0.75	2,165	375	43.15	2,268	0.66	0.1	12.29	3.2	578	25.49	2	–
0.75 to <2.50	6,045	601	68.56	6,279	1.41	0.3	11.13	2.7	1,795	28.59	10	–
2.50 to <10.00	8,267	1,645	30.54	8,356	5.38	0.3	7.72	2.3	2,269	27.15	31	–
10.00 to <100.00	6,131	1,260	26.87	6,452	16.57	0.2	5.93	1.7	1,996	30.94	66	–
100.00 (Default)	2,510	128	26.30	2,528	100.00	0.2	45.40	1.9	470	18.58	1,110	–
Sub-total	30,605	4,169	36.58	31,166	13.36	1.2	11.79	2.5	7,842	25.16	1,220	1,072
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	30,605	4,169	36.58	31,166	13.36	1.2	11.79	2.5	7,842	25.16	1,220	1,072
Other												
0.00 to <0.15	53,106	120,044	27.67	87,311	0.08	13.0	31.73	1.9	15,573	17.84	25	–
0.15 to <0.25	15,657	23,336	29.63	22,839	0.23	3.8	35.94	2.1	8,246	36.10	19	–
0.25 to <0.50	11,234	14,440	29.08	15,838	0.39	3.2	27.07	2.1	5,683	35.88	16	–
0.50 to <0.75	10,609	10,310	31.16	13,343	0.64	2.5	25.45	2.3	5,827	43.67	26	–
0.75 to <2.50	18,582	22,842	30.11	23,972	1.47	3.5	25.59	2.9	13,963	58.24	86	–
2.50 to <10.00	13,094	24,878	32.30	18,460	4.60	2.0	23.64	2.9	14,593	79.05	185	–
10.00 to <100.00	1,510	3,547	33.30	2,107	20.52	0.4	19.33	2.3	2,019	95.85	70	–
100.00 (Default)	4,478	605	58.46	4,690	100.00	0.8	41.39	1.8	942	20.08	1,782	–
Sub-total	128,270	220,002	29.02	188,562	3.50	29.4	29.93	2.2	66,845	35.45	2,209	1,788
Dilution risk	4,212	605	33.64	4,573	10.45	0	2.47	1.0	475	10.40	12	0
Sub-total incl. dilution risk	132,482	220,607	29.03	193,135	3.66	29.4	29.28	2.2	67,321	34.86	2,220	1,788

Dec 31, 2018

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	25,612	16,092	63.58	35,186	0.10	2,751.2	15.00	10.3	1,371	3.90	9	–
0.15 to <0.25	31,883	6,093	77.10	36,146	0.22	1,302.1	15.79	6.8	2,681	7.42	15	–
0.25 to <0.50	35,807	4,041	66.11	38,530	0.39	863.7	16.74	7.8	4,405	11.43	26	–
0.50 to <0.75	35,463	3,241	68.66	37,728	0.67	845.4	18.21	7.5	6,766	17.93	48	–
0.75 to <2.50	35,656	3,539	70.40	38,136	1.46	1,433.4	23.45	8.6	12,777	33.50	139	–
2.50 to <10.00	18,276	1,870	79.37	19,494	4.52	867.3	27.34	6.5	11,014	56.50	248	–
10.00 to <100.00	4,015	180	70.52	4,022	20.71	188.6	27.55	6.4	3,805	94.60	234	–
100.00 (Default)	4,081	55	58.38	4,097	100.00	165.7	43.57	3.0	659	16.08	1,750	–
Sub-total	190,795	35,111	68.69	213,340	3.22	8,417.2	19.44	7.9	43,477	20.38	2,469	2,634
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	190,795	35,111	68.69	213,340	3.22	8,417.2	19.44	7.9	43,477	20.38	2,469	2,634
of which:												
Secured by real estate property SMEs												
0.00 to <0.15	1,145	132	59.41	1,221	0.12	6.7	11.33	14.8	35	2.89	0	–
0.15 to <0.25	1,573	120	58.29	1,637	0.23	7.9	11.25	15.3	76	4.62	0	–
0.25 to <0.50	1,774	99	55.68	1,820	0.39	8.6	11.49	15.7	126	6.91	1	–
0.50 to <0.75	1,558	71	53.46	1,581	0.64	7.4	11.64	15.7	157	9.91	1	–
0.75 to <2.50	1,835	101	55.29	1,867	1.34	9.1	11.57	15.9	296	15.85	3	–
2.50 to <10.00	775	24	52.07	775	4.31	3.9	10.79	15.0	224	28.86	4	–
10.00 to <100.00	152	3	42.47	147	21.91	0.9	11.99	14.6	86	58.54	4	–
100.00 (Default)	120	0	45.94	119	100.00	0.4	34.70	11.2	18	14.89	41	–
Sub-total	8,931	552	56.58	9,167	2.53	45.0	11.72	15.4	1,017	11.09	54	64
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	8,931	552	56.58	9,167	2.53	45.0	11.72	15.4	1,017	11.09	54	64
Secured by real estate property non-SMEs												
0.00 to <0.15	22,242	551	68.76	22,615	0.10	239.3	12.81	14.5	766	3.39	3	–
0.15 to <0.25	27,992	1,203	86.21	29,024	0.22	245.8	14.36	7.1	1,905	6.56	9	–
0.25 to <0.50	31,187	1,357	82.09	32,289	0.39	253.5	14.45	7.9	3,267	10.12	18	–
0.50 to <0.75	30,225	1,423	83.95	31,396	0.67	232.7	15.19	7.6	4,952	15.77	32	–
0.75 to <2.50	23,955	1,887	87.10	25,555	1.43	197.0	14.08	10.2	6,119	23.94	51	–
2.50 to <10.00	9,830	1,223	94.44	10,959	4.53	89.9	13.35	8.3	4,881	44.54	67	–
10.00 to <100.00	2,279	85	92.10	2,338	20.97	18.4	14.81	8.6	1,973	84.36	74	–
100.00 (Default)	1,582	14	84.83	1,591	100.00	14.3	20.92	5.6	211	13.27	333	–
Sub-total	149,292	7,744	85.41	155,768	2.16	1,290.9	14.28	9.1	24,073	15.45	589	594
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	149,292	7,744	85.41	155,768	2.16	1,290.9	14.28	9.1	24,073	15.45	589	594

Dec 31, 2018

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
Qualifying Revolving												
0.00 to <0.15	51	10,272	88.55	7,277	0.07	2,250.9	11.19	0.0	214	2.94	4	–
0.15 to <0.25	98	3,142	92.03	2,365	0.19	847.9	6.07	0.0	163	6.90	3	–
0.25 to <0.50	142	1,005	79.21	819	0.38	396.5	14.99	0.0	90	11.00	2	–
0.50 to <0.75	175	650	73.32	592	0.67	348.5	18.08	0.0	102	17.30	2	–
0.75 to <2.50	290	531	71.01	626	1.49	422.9	21.66	0.0	194	31.07	5	–
2.50 to <10.00	195	185	73.16	313	4.68	242.8	22.20	0.0	220	70.22	8	–
10.00 to <100.00	53	18	75.42	64	20.11	50.3	24.26	0.0	95	147.95	7	–
100.00 (Default)	70	2	61.51	71	100.00	34.4	60.96	0.0	48	67.56	43	–
Sub-total	1,073	15,803	87.03	12,126	1.03	4,594.3	11.96	0.0	1,126	9.29	74	80
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	1,073	15,803	87.03	12,126	1.03	4,594.3	11.96	0.0	1,126	9.29	74	80
Other retail SMEs												
0.00 to <0.15	362	2,314	18.90	1,019	0.11	31.7	42.19	3.9	95	9.28	0	–
0.15 to <0.25	409	904	31.02	779	0.23	36.1	42.06	3.9	122	15.69	1	–
0.25 to <0.50	535	871	28.64	910	0.39	34.7	46.26	3.7	221	24.32	2	–
0.50 to <0.75	581	568	29.39	857	0.65	25.5	51.89	3.0	307	35.83	3	–
0.75 to <2.50	979	555	33.42	1,230	1.36	25.0	54.91	2.8	636	51.75	9	–
2.50 to <10.00	674	252	35.05	562	4.45	14.3	52.90	2.6	355	63.19	13	–
10.00 to <100.00	181	40	36.72	110	21.42	4.3	51.04	2.9	100	91.46	12	–
100.00 (Default)	244	13	37.24	241	100.00	3.4	62.59	2.1	50	20.58	150	–
Sub-total	3,965	5,518	26.01	5,708	5.57	174.9	49.10	3.3	1,887	33.05	191	223
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	3,965	5,518	26.01	5,708	5.57	174.9	49.10	3.3	1,887	33.05	191	223
Other retail non-SMEs												
0.00 to <0.15	1,814	2,823	30.97	3,054	0.09	411.4	32.79	3.5	261	8.55	1	–
0.15 to <0.25	1,812	723	66.37	2,340	0.22	237.1	37.76	4.5	416	17.76	2	–
0.25 to <0.50	2,169	709	66.10	2,693	0.39	243.2	38.38	5.0	700	26.01	4	–
0.50 to <0.75	2,924	529	65.28	3,302	0.67	295.2	41.33	4.3	1,248	37.81	9	–
0.75 to <2.50	8,597	464	47.96	8,859	1.58	867.4	48.76	3.8	5,532	62.44	70	–
2.50 to <10.00	6,801	185	46.09	6,886	4.54	558.2	49.63	3.3	5,335	77.48	155	–
10.00 to <100.00	1,351	35	53.67	1,362	20.11	123.9	49.36	2.3	1,550	113.80	136	–
100.00 (Default)	2,066	26	54.61	2,075	100.00	117.3	58.64	0.8	332	16.02	1,184	–
Sub-total	27,533	5,494	45.69	30,571	9.30	2,853.8	45.50	3.6	15,375	50.29	1,562	1,672
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	27,533	5,494	45.69	30,571	9.30	2,853.8	45.50	3.6	15,375	50.29	1,562	1,672
All exposure classes												
Dilution risk	4,363	609	34.10	4,730	10.45	0.4	2.47	1.0	492	10.40	12	0
Total incl. dilution risk	497,181	274,339	35.19	596,372	3.22	8,465.3	29.59	4.5	132,915	22.29	6,235	5,797

The credit risk RWA in our advanced IRB portfolio were at € 140.7 billion as of June 30, 2019, compared to € 132.9 billion as of December 31, 2018. The increase of € 7.8 billion is mainly driven by our portfolio in the exposure class corporates showing the increase in business volumes in our CIB and PCB segments in addition to increased credit risk RWA due to regulatory updates to relevant parameters.

Article 452 (f-h) 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 54 to 66.

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, maturity as well as the 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)

Jun 30, 2019

	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	4	7	0	4	0	<0.1	12.33	2.5	0	0	0	–
0.15 to <0.25	0	0	0	0	0	0	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	0	0	0	0	0	–
100.00 (Default)	0	0	0	0	0	0	0	0	0	0	0	–
Sub-total	4	7	0	4	0	<0.1	12.33	2.5	0	0	0	0
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	4	7	0	4	0	<0.1	12.33	2.5	0	0	0	0
Institutions												
0.00 to <0.15	0	3	0	0	0.06	<0.1	15.10	2.5	0	11.31	0	–
0.15 to <0.25	0	0	0	0	0.23	<0.1	42.69	2.5	0	47.60	0	–
0.25 to <0.50	0	0	0	0	0.38	<0.1	42.69	2.5	0	61.52	0	–
0.50 to <0.75	0	0	0	0	0.69	<0.1	42.69	2.5	0	80.47	0	–
0.75 to <2.50	0	0	0	0	1.23	<0.1	42.69	2.5	0	99.69	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	2.5	1	286.68	0	–
100.00 (Default)	0	0	0	0	0	0	0	0	0	0	0	–
Sub-total	1	3	0	0	14.60	<0.1	37.81	2.5	1	213.60	0	0
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	1	3	0	0	14.60	<0.1	37.81	2.5	1	213.60	0	0
Corporates												
0.00 to <0.15	1,471	1,342	0	1,955	0.07	7.2	15.51	2.5	242	12.36	0	–
0.15 to <0.25	1,566	1,187	74.43	1,585	0.20	2.1	38.18	2.5	651	41.06	1	–
0.25 to <0.50	989	1,155	74.98	913	0.38	2.4	33.75	2.5	465	50.97	1	–
0.50 to <0.75	483	515	75.00	384	0.68	1.4	32.46	2.5	248	64.64	1	–
0.75 to <2.50	353	403	75.00	266	1.44	0.6	22.38	2.5	166	62.63	1	–
2.50 to <10.00	87	75	75.00	74	4.67	0.1	20.75	2.5	55	74.66	1	–
10.00 to <100.00	33	57	73.28	54	17.01	0.1	32.57	2.5	100	185.68	3	–
100.00 (Default)	105	9	100.00	105	100.00	0.1	43.09	2.5	0	0	45	–
Sub-total	5,088	4,744	73.28	5,336	17.01	14.0	32.57	2.5	1,928	36.12	53	76
Dilution risk	3,484	8,365	6.45	3,764	0.13	58.3	75.00	1.0	832	22.11	4	0
Sub-total incl. dilution risk	8,572	13,109	30.63	9,100	10.03	72.3	50.12	1.9	2,760	30.33	57	76

Jun 30, 2019												
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
of which:												
SMEs												
0.00 to <0.15	0	0	0	0	0.07	<0.1	12.33	2.5	0	5.34	0	–
0.15 to <0.25	17	9	75.00	20	0.23	<0.1	42.94	2.5	7	35.01	0	–
0.25 to <0.50	26	18	75.00	24	0.38	<0.1	41.51	2.5	13	53.83	0	–
0.50 to <0.75	8	7	75.00	9	0.69	<0.1	34.99	2.5	4	45.31	0	–
0.75 to <2.50	6	11	0	6	1.40	<0.1	26.72	2.5	3	53.56	0	–
2.50 to <10.00	13	9	75.00	14	3.92	<0.1	35.61	2.5	10	67.95	0	–
10.00 to <100.00	1	2	75.00	1	18.83	<0.1	31.44	2.5	1	128.49	0	–
100.00 (Default)	36	0	0	36	100.00	<0.1	44.77	2.5	0	0	16	–
Sub-total	107	56	75.00	111	33.63	0.1	40.67	2.5	38	34.18	17	22
Dilution risk	311	3,083	7.10	526	0.12	45.1	75.00	1.0	111	21.10	0	0
Sub-total incl. dilution risk	418	3,139	8.31	637	5.96	45.3	69.01	1.3	149	23.38	17	22
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	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	0	0	0	0	0	0	0	0	9
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	0	0	0	0	0	0	0	0	0	0	0	9
Other												
0.00 to <0.15	1,471	1,342	0	1,955	0.07	7.2	15.51	2.5	242	12.36	0	–
0.15 to <0.25	1,549	1,179	74.41	1,565	0.20	2.1	38.12	2.5	644	41.13	1	–
0.25 to <0.50	963	1,137	74.98	888	0.38	2.4	33.53	2.5	452	50.89	1	–
0.50 to <0.75	475	508	75.00	375	0.68	1.4	32.40	2.5	244	65.13	1	–
0.75 to <2.50	347	392	75.00	260	1.45	0.6	22.28	2.5	163	62.83	1	–
2.50 to <10.00	74	66	75.00	60	4.84	0.1	17.26	2.5	46	76.24	0	–
10.00 to <100.00	33	55	73.28	53	16.99	0.1	32.58	2.5	99	186.33	3	–
100.00 (Default)	69	9	100.00	69	100.00	0.1	42.20	2.5	0	0	29	–
Sub-total	4,980	4,688	75.00	5,225	0.68	13.9	32.40	2.5	1,890	36.16	37	45
Dilution risk	3,174	5,282	4.94	3,238	0.13	13.2	75.00	1.0	721	22.27	3	0
Sub-total incl. dilution risk	8,154	9,970	37.88	8,463	0.47	27.1	48.70	1.9	2,611	30.85	40	45
All exposure classes												
Dilution risk	3,484	8,365	6.45	3,764	0.13	58.3	75.00	1.0	832	22.11	4	0
Total incl. dilution risk	8,576	13,119	10.66	9,104	1.51	72.3	47.26	1.9	2,761	30.32	57	76

Dec 31, 2018												
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 ¹
Central governments and central banks												
0.00 to <0.15	17	4	0	17	0	<0.1	12.33	2.5	0	0	0	–
0.15 to <0.25	0	0	0	0	0	0	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	0	0	0	0	0	–
100.00 (Default)	0	0	0	0	0	0	0	0	0	0	0	–
Sub-total	17	4	0	17	0	<0.1	12.33	2.5	0	0	0	0
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	17	4	0	17	0	<0.1	12.33	2.5	0	0	0	0
Institutions												
0.00 to <0.15	1	5	0	1	0.08	<0.1	12.79	2.5	0	12.43	0	–
0.15 to <0.25	0	1	0	0	0.21	<0.1	42.69	2.5	0	44.48	0	–
0.25 to <0.50	0	0	0	0	0.38	<0.1	42.69	2.5	0	61.52	0	–
0.50 to <0.75	0	0	0	0	0.69	<0.1	42.69	2.5	0	80.47	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	15	0	0	15	20.00	<0.1	45.00	2.5	39	252.53	1	–
100.00 (Default)	0	0	0	0	0	0	0	0	0	0	0	–
Sub-total	16	6	0	16	19.13	<0.1	43.62	2.5	39	242.02	1	0
Dilution risk	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total incl. dilution risk	16	6	0	16	19.13	<0.1	43.62	2.5	39	242.02	1	0
Corporates												
0.00 to <0.15	1,930	1,295	0	1,931	0.07	6.2	15.91	2.5	244	12.65	0	–
0.15 to <0.25	1,394	1,113	74.35	1,518	0.21	2.1	38.32	2.5	631	41.57	1	–
0.25 to <0.50	896	1,079	74.98	955	0.38	2.4	32.44	2.5	470	49.26	1	–
0.50 to <0.75	481	477	75.00	485	0.67	1.5	28.50	2.5	278	57.34	1	–
0.75 to <2.50	286	321	100.00	286	1.53	0.7	18.88	2.5	158	55.31	1	–
2.50 to <10.00	92	63	75.00	95	5.08	0.1	22.05	2.5	86	90.75	1	–
10.00 to <100.00	52	42	73.37	55	17.70	0.1	31.91	2.5	103	186.56	3	–
100.00 (Default)	68	8	100.00	68	100.00	0.1	41.69	2.5	0	0	28	–
Sub-total	5,200	4,399	73.37	5,394	17.70	13.0	31.91	2.5	1,972	36.55	37	51
Dilution risk	3,590	7,294	6.52	3,824	0.15	49.3	59.69	1.0	655	17.12	3	0
Sub-total incl. dilution risk	8,790	11,693	31.67	9,218	10.42	62.3	43.43	1.9	2,626	28.49	40	51

Dec 31, 2018												
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 ¹
of which:												
SMEs												
0.00 to <0.15	0	0	0	0	0	0	0	0	0	0	0	–
0.15 to <0.25	1	3	0	1	0.19	<0.1	12.33	2.5	0	8.85	0	–
0.25 to <0.50	6	7	75.00	7	0.38	<0.1	39.42	2.5	3	44.82	0	–
0.50 to <0.75	5	5	75.00	7	0.69	<0.1	42.73	2.5	4	55.60	0	–
0.75 to <2.50	3	1	0	3	1.23	<0.1	39.59	2.5	3	83.68	0	–
2.50 to <10.00	0	0	0	0	0	0	0	0	0	0	0	–
10.00 to <100.00	1	1	0	1	19.82	<0.1	43.51	2.5	1	159.24	0	–
100.00 (Default)	1	0	0	1	100.00	<0.1	45.00	2.5	0	0	0	–
Sub-total	17	15	75.00	19	6.61	0.1	39.78	2.5	11	55.83	1	1
Dilution risk	260	2,413	7.26	434	0.18	37.9	59.69	1.0	61	14.01	0	0
Sub-total incl. dilution risk	277	2,428	7.68	454	0.46	38.0	58.84	1.1	72	15.79	1	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	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	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0
Other												
0.00 to <0.15	1,930	1,295	0	1,931	0.07	6.2	15.91	2.5	244	12.65	0	–
0.15 to <0.25	1,393	1,111	74.35	1,517	0.21	2.1	38.33	2.5	631	41.59	1	–
0.25 to <0.50	890	1,072	74.98	948	0.38	2.3	32.39	2.5	467	49.29	1	–
0.50 to <0.75	477	472	75.00	478	0.67	1.5	28.30	2.5	274	57.37	1	–
0.75 to <2.50	283	321	100.00	283	1.54	0.6	18.65	2.5	156	55.00	1	–
2.50 to <10.00	92	63	75.00	95	5.08	0.1	22.05	2.5	86	90.75	1	–
10.00 to <100.00	51	41	73.37	54	17.67	0.1	31.73	2.5	102	186.98	3	–
100.00 (Default)	67	8	100.00	67	100.00	0.1	41.64	2.5	0	0	28	–
Sub-total	5,183	4,383	75.00	5,375	0.67	13.0	28.30	2.5	1,961	36.48	36	50
Dilution risk	3,330	4,881	5.04	3,390	0.14	11.4	59.69	1.0	594	17.52	3	0
Sub-total incl. dilution risk	8,513	9,264	38.14	8,764	0.47	24.3	40.44	1.9	2,555	29.15	39	50
All exposure classes												
Dilution risk	3,590	7,294	6.52	3,824	0.15	49.3	59.69	1.0	655	17.12	3	0
Total incl. dilution risk	8,823	11,703	11.11	9,251	1.16	62.4	40.53	1.9	2,665	28.81	42	51

Article 453 (j) 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 to credit risk mitigation as well as after recognition 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

in € m.	Jun 30, 2019		Dec 31, 2018	
	a	b	a	b
	pre-credit derivatives RWA	Actual RWA	pre-credit derivatives RWA	Actual RWA
7 Exposures under AIRB				
8 Central governments and central banks	16,274	16,274	15,579	15,579
9 Institutions	4,399	4,445	4,479	4,550
9a Corporates	85,674	84,757	81,570	80,441
of which:				
10 SMEs	6,285	6,285	5,278	5,278
11 Specialized lending	8,914	8,914	7,842	7,842
12 Other	70,475	69,558	68,450	67,321
12a Retail	46,340	46,340	43,477	43,477
of which:				
13 Secured by real estate property SMEs	952	952	1,017	1,017
14 Secured by real estate property non-SMEs	25,970	25,970	24,073	24,073
15 Qualifying revolving	1,090	1,090	1,126	1,126
16 Other retail SMEs	2,059	2,059	1,887	1,887
17 Other retail non-SMEs	16,270	16,270	15,375	15,375
18 Equity	9,126	9,126	9,170	9,170
19 Other non-credit obligation asset	7,417	7,417	3,276	3,276
19a Sub-total AIRB	169,230	168,358	157,551	156,494
1 Exposures under FIRB				
2 Central governments and central banks	0	0	0	0
3 Institutions	1	1	39	39
3a Corporates	3,727	3,727	3,670	3,670
of which:				
4 SMEs	149	149	72	72
5 Specialized lending	967	967	1,044	1,044
6 Other	2,611	2,611	2,555	2,555
6a Sub-total FIRB	3,728	3,728	3,709	3,709
20 Total	172,958	172,086	161,260	160,203

Our RWA in the IRB approach were at € 172.1 billion as of June 30, 2019, compared to € 160.2 billion at the end of 2018. The overall increase of € 11.8 billion is mainly driven by the corporates portfolio of € 4.3 billion, mostly resulting from risen loan volumes in our Corporate & Investment Bank. Moreover, other non-credit obligation assets rose by € 4.1 billion due to the transition to IFRS 16 and our RWA within the retail portfolio increased by € 2.9 billion, mainly in our Private & Commercial Bank as a result of business growth and model updates.

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 the RWA by an 8 % capital ratio.

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

in €m.	Three months ended Jun 30, 2019		Three months ended Mar 31, 2019	
	a	b	a	b
	RWA	Capital requirements	RWA	Capital requirements
1 Credit risk RWA opening balance	145,046	11,604	139,901	11,192
2 Book size	7,039	563	76	6
3 Book quality	(401)	(32)	(1,246)	(100)
4 Model updates	1,355	108	146	12
5 Methodology and policy	0	0	4,775	382
6 Acquisitions and disposals	(300)	(24)	0	0
7 Foreign exchange movements	(896)	(72)	1,395	112
8 Other	0	0	0	0
9 Credit risk RWA closing balance	151,842	12,147	145,046	11,604

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” is reserved to 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 increase in RWA for credit risk exposures under the IRB approach by 4.7 % or €6.8 billion since March 31, 2019 is primarily driven by the increase in the category “Book size” reflecting business driven growth in our CIB and PCB segments. Additional increase is driven by the category “Model updates” showing the impact from recent regulatory updates in PCB. These increases were partly offset by favorable movements in the categories “Foreign exchange movements” and “Book Quality”, the latter reflecting favorable risk parameter developments. The disposal of our Portugal retail business is shown under the category “Acquisitions and disposals”.

Counterparty credit risk (CCR)

Article 439 (h-i) 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 CCR2 and 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 futures market values across all asset classes also includes the impact from regulatory netting and collateralization. For details regarding the calculation method under IMM including the estimation of the alpha factor please refer to introductory section on Counterparty Credit Risk in our annual Pillar 3 Report 2018 on page 122.

EU CCR1 – Analysis of CCR exposure by approach

		Jun 30, 2019						
		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	–	4,905	5,063	–	–	9,963	4,090
2	Original exposure	0	–	–	–	–	0	0
3	Standardized approach	–	0	–	–	0	0	0
4	IMM (for derivatives and SFTs)	–	–	–	88,479	1.2	106,175	18,639
of which:		–	–	–				
5	Securities Financing Transactions	–	–	–	57,546	1.2	69,055	4,303
6	Derivatives & Long Settlement Transactions	–	–	–	30,933	1.2	37,120	14,335
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)	–	–	–	–	–	20,056	2,699
10	VaR for SFTs	–	–	–	–	–	0	0
11	Total	–	–	–	–	–	–	25,428

		Dec 31, 2018						
		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	–	6,469	5,514	–	–	11,977	3,831
2	Original exposure	0	–	–	–	–	0	0
3	Standardized approach	–	0	–	–	0	0	0
4	IMM (for derivatives and SFTs)	–	–	–	103,115	1.2	123,738	17,884
of which:		–	–	–				
5	Securities Financing Transactions	–	–	–	73,247	1.2	87,896	4,441
6	Derivatives & Long Settlement Transactions	–	–	–	29,868	1.2	35,841	13,443
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)	–	–	–	–	–	17,256	2,682
10	VaR for SFTs	–	–	–	–	–	0	0
11	Total	–	–	–	–	–	–	24,397

The table below 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 advanced method, driving the reported CVA RWA of € 6.2 billion (90 %), whilst the standardized method covers only € 555 million (10 %) 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 reduction in exposure was primarily driven by methodology changes.

EU CCR2 – CVA capital charge

in € m.	Jun 30, 2019		Dec 31, 2018	
	a	b	a	b
	Exposure value	RWA	Exposure value	RWA
1 Total portfolios subject to the Advanced Method	93,187	5,663	99,516	7,698
2 (i) VaR component (including the 3x multiplier)	–	781	–	588
3 (ii) Stressed VaR component (including the 3x multiplier)	–	4,882	–	7,110
4 All portfolios subject to the Standardized Method	1,619	556	920	299
EU4 Based on Original Exposure Method	0	0	0	0
5 Total subject to the CVA capital charge	94,807	6,219	100,436	7,997

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 June 30, 2019 and December 31, 2018, we only report exposures to qualifying central counterparties (QCCP) as defined in Article 4 (88) CRR.

EU CCR8 – Exposures to CCPs

in € m.	Jun 30, 2019		Dec 31, 2018	
	a	b	a	b
	EAD post CRM	RWA	EAD post CRM	RWA
1 Exposures to QCCPs (total)	–	687	–	633
2 Exposures for trades at QCCPs (excluding initial margin and default fund contributions)	6,787	136	6,573	131
of which:				
3 (i) OTC derivatives	1,808	36	1,485	30
4 (ii) Exchange-traded derivatives	2,275	46	2,364	47
5 (iii) Securities financing transactions	2,704	54	2,725	54
6 (iv) Netting sets where cross-product netting has been approved	0	0	0	0
7 Segregated initial margin	5,453	–	5,265	–
8 Non-segregated initial margin	4,816	96	6,103	122
9 Pre-funded default fund contributions	986	454	931	380
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

		Jun 30, 2019						
in €m.		Risk Weight						
Exposure classes		0%	2%	4%	10%	20%	50%	70%
1	Central governments or central banks	3,113	0	0	0	0	0	0
2	Regional governments or local authorities	218	0	0	0	0	0	0
3	Public sector entities	260	0	0	0	2	0	0
4	Multilateral development banks	745	0	0	0	0	0	0
5	International organizations	0	0	0	0	0	0	0
6	Institutions	0	13,181	0	0	78	2	0
7	Corporates	0	0	0	0	11	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	154	0	0	0	0	0
11	Total	4,336	13,335	0	0	91	2	0

		Jun 30, 2019					
in €m.		Risk Weight					
Exposure classes		75%	100%	150%	Others	Total	Of which: unrated
1	Central governments or central banks	0	0	0	0	3,113	3,113
2	Regional governments or local authorities	0	0	0	0	218	218
3	Public sector entities	0	0	0	0	262	262
4	Multilateral development banks	0	0	0	0	745	745
5	International organizations	0	0	0	0	0	0
6	Institutions	0	22	0	0	13,282	13,339
7	Corporates	0	898	0	0	909	865
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	19	0	0	174	168
11	Total	3	938	0	0	18,706	18,714

		Dec 31, 2018						
in €m.		Risk Weight						
Exposure classes		0%	2%	4%	10%	20%	50%	70%
1	Central governments or central banks	2,977	0	0	0	0	0	0
2	Regional governments or local authorities	174	0	0	0	616	0	0
3	Public sector entities	456	0	0	0	1	0	0
4	Multilateral development banks	1,068	0	0	0	0	0	0
5	International organizations	0	0	0	0	0	0	0
6	Institutions	0	12,473	0	0	34	6	0
7	Corporates	0	0	0	0	35	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	302	0	0	0	0	0
11	Total	4,676	12,775	0	0	687	6	0

		Dec 31, 2018					
in €m.		Risk Weight					
Exposure classes		75%	100%	150%	Others	Total	Of which: unrated
1	Central governments or central banks	0	0	0	0	2,977	2,977
2	Regional governments or local authorities	0	0	0	0	791	833
3	Public sector entities	0	0	0	0	458	458
4	Multilateral development banks	0	0	0	0	1,068	1,068
5	International organizations	0	0	0	0	0	0
6	Institutions	0	66	0	0	12,579	12,551
7	Corporates	0	1,037	0	0	1,072	943
8	Retail	6	0	0	0	6	6
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	302	302
11	Total	6	1,103	0	0	19,252	19,138

Article 452 (f) 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

Jun 30, 2019

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	6,152	0.02	0.1	40.96	1.1	354	5.75
0.15 to <0.25	494	0.23	<0.1	49.31	0.3	154	31.20
0.25 to <0.50	22	0.39	<0.1	50.00	4.5	22	99.48
0.50 to <0.75	9	0.64	<0.1	30.00	5.0	7	76.21
0.75 to <2.50	40	1.75	<0.1	30.00	5.0	40	100.55
2.50 to <10.00	1,536	4.00	<0.1	16.52	2.9	915	59.55
10.00 to <100.00	0	0	0	0	0	0	0
100.00 (Default)	0	0	0	0	0	0	0
Sub-total	8,253	0.79	0.1	36.87	1.4	1,491	18.07
Institutions							
0.00 to <0.15	17,983	0.06	0.5	41.58	1.0	3,133	17.42
0.15 to <0.25	241	0.23	<0.1	45.80	3.6	187	77.90
0.25 to <0.50	427	0.39	0.1	52.98	1.2	277	64.87
0.50 to <0.75	396	0.64	<0.1	54.88	1.2	378	95.48
0.75 to <2.50	502	1.41	<0.1	59.03	0.9	654	130.29
2.50 to <10.00	184	3.69	<0.1	29.72	1.9	178	96.73
10.00 to <100.00	17	14.16	<0.1	57.79	3.6	52	309.70
100.00 (Default)	0	0	0	0	0	0	0
Sub-total	19,749	0.16	0.7	42.49	1.0	4,859	24.60
Corporates							
0.00 to <0.15	84,479	0.04	10.1	33.55	0.7	7,053	8.35
0.15 to <0.25	2,693	0.23	0.7	28.05	2.9	968	35.95
0.25 to <0.50	3,796	0.39	0.8	33.65	1.7	1,895	49.93
0.50 to <0.75	3,761	0.64	0.9	29.74	1.5	1,980	52.65
0.75 to <2.50	3,683	1.30	1.2	40.87	2.6	3,591	97.51
2.50 to <10.00	1,760	4.63	0.5	31.29	3.2	1,985	112.76
10.00 to <100.00	571	15.22	0.1	10.89	1.1	333	58.41
100.00 (Default)	25	100.00	<0.1	22.48	2.3	17	70.01
Sub-total	100,768	0.32	14.3	33.36	0.9	17,824	17.69
of which:							
SMEs							
0.00 to <0.15	683	0.06	0.2	49.27	2.0	168	24.65
0.15 to <0.25	68	0.23	0.1	44.64	2.9	34	49.84
0.25 to <0.50	52	0.39	0.1	43.66	2.7	32	62.01
0.50 to <0.75	114	0.64	0.1	50.38	0.5	57	50.19
0.75 to <2.50	37	1.30	0.1	50.68	3.2	41	110.67
2.50 to <10.00	30	4.65	0.1	53.57	1.9	37	122.52
10.00 to <100.00	3	17.06	<0.1	42.85	3.8	6	195.05
100.00 (Default)	0	100.00	<0.1	89.08	2.9	0	7.18
Sub-total	987	0.43	0.5	48.97	2.0	375	38.00
Specialized Lending							
0.00 to <0.15	98	0.07	<0.1	52.18	4.4	43	43.34
0.15 to <0.25	32	0.23	<0.1	43.19	4.0	20	61.08
0.25 to <0.50	60	0.39	<0.1	36.53	3.6	36	59.08
0.50 to <0.75	36	0.64	<0.1	48.39	4.6	42	116.65
0.75 to <2.50	112	1.37	0.1	40.75	4.1	130	115.35
2.50 to <10.00	401	4.83	<0.1	20.31	4.8	329	81.89
10.00 to <100.00	27	13.61	<0.1	19.76	1.9	28	101.75
100.00 (Default)	6	100.00	<0.1	49.28	4.5	1	10.15
Sub-total	774	4.08	0.2	31.06	4.4	626	80.94
Other							
0.00 to <0.15	83,698	0.04	9.9	33.40	0.7	6,842	8.17
0.15 to <0.25	2,593	0.23	0.6	27.42	2.9	915	35.28
0.25 to <0.50	3,684	0.39	0.7	33.47	1.6	1,828	49.61
0.50 to <0.75	3,611	0.64	0.9	28.90	1.5	1,881	52.09
0.75 to <2.50	3,534	1.30	1.0	40.77	2.5	3,421	96.80
2.50 to <10.00	1,329	4.58	0.4	34.10	2.8	1,620	121.86
10.00 to <100.00	540	15.29	<0.1	10.26	1.0	299	55.43
100.00 (Default)	18	100.00	<0.1	11.97	1.6	17	91.86
Sub-total	99,007	0.29	13.6	33.22	0.9	16,822	16.99

Jun 30, 2019

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	13	0.06	0.2	58.30	1.4	1	9.87
0.15 to <0.25	1	0.23	<0.1	57.69	6.2	0	24.88
0.25 to <0.50	4	0.39	<0.1	57.31	7.2	1	34.92
0.50 to <0.75	11	0.64	0.1	57.42	1.4	5	47.06
0.75 to <2.50	17	1.33	0.1	56.82	2.6	11	63.61
2.50 to <10.00	12	4.79	0.1	56.47	1.0	9	77.13
10.00 to <100.00	2	25.62	<0.1	57.00	1.0	2	90.92
100.00 (Default)	0	100.00	<0.1	16.50	0.3	0	206.25
Sub-total	60	2.26	0.6	57.25	2.1	30	49.34
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	0.13	<0.1	56.67	2.0	0	16.92
0.15 to <0.25	1	0.23	<0.1	57.49	2.8	0	21.19
0.25 to <0.50	2	0.39	<0.1	56.85	1.9	1	29.02
0.50 to <0.75	4	0.64	<0.1	57.07	1.1	1	38.09
0.75 to <2.50	5	1.50	0.1	55.68	1.7	3	52.99
2.50 to <10.00	6	4.79	<0.1	55.91	0.9	4	66.15
10.00 to <100.00	1	18.54	<0.1	57.00	1.0	1	95.50
100.00 (Default)	0	100.00	<0.1	16.50	0.3	0	206.25
Sub-total	19	3.49	0.2	56.32	1.3	10	53.31
Other retail non-SMEs							
0.00 to <0.15	13	0.05	0.2	58.35	1.3	1	9.64
0.15 to <0.25	1	0.23	<0.1	57.88	9.7	0	28.56
0.25 to <0.50	2	0.39	<0.1	57.66	11.1	1	39.35
0.50 to <0.75	7	0.64	<0.1	57.61	1.6	4	51.83
0.75 to <2.50	12	1.26	0.1	57.30	3.0	8	68.06
2.50 to <10.00	6	4.80	<0.1	57.08	1.1	5	89.01
10.00 to <100.00	0	51.63	<0.1	57.00	0.7	0	74.12
100.00 (Default)	0	0	0	0	0	0	0
Sub-total	41	1.68	0.4	57.68	2.5	19	47.47
Total (all exposure classes)	128,831	0.32	15.7	35.00	1.0	24,204	18.79

Dec 31, 2018

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	5,941	0.02	0.1	41.16	1.1	385	6.48
0.15 to <0.25	66	0.23	<0.1	49.85	0.1	19	28.30
0.25 to <0.50	92	0.39	<0.1	47.33	3.0	71	76.54
0.50 to <0.75	8	0.64	<0.1	30.00	5.0	6	76.04
0.75 to <2.50	32	1.75	<0.1	30.00	4.9	32	100.21
2.50 to <10.00	1,387	4.11	<0.1	20.77	2.8	1,149	82.85
10.00 to <100.00	0	0	0	0	0	0	0
100.00 (Default)	21	100.00	<0.1	0.60	4.8	3	12.50
Sub-total	7,547	1.06	0.1	37.40	1.5	1,664	22.05
Institutions							
0.00 to <0.15	22,717	0.05	0.5	42.21	1.2	3,778	16.63
0.15 to <0.25	212	0.23	<0.1	46.86	3.2	150	70.86
0.25 to <0.50	403	0.39	0.1	53.23	1.8	315	78.19
0.50 to <0.75	402	0.64	<0.1	44.12	2.1	349	86.77
0.75 to <2.50	193	1.53	0.1	59.53	1.3	279	144.40
2.50 to <10.00	125	3.66	<0.1	22.36	1.3	80	64.07
10.00 to <100.00	21	20.75	<0.1	57.62	4.5	81	377.99
100.00 (Default)	0	100.00	<0.1	7.00	5.0	0	87.50
Sub-total	24,074	0.12	0.7	42.52	1.2	5,033	20.91
Corporates							
0.00 to <0.15	99,617	0.04	10.7	33.68	0.6	6,847	6.87
0.15 to <0.25	2,505	0.23	0.7	25.27	3.0	860	34.34
0.25 to <0.50	3,472	0.39	0.8	32.73	1.7	1,675	48.23
0.50 to <0.75	3,842	0.64	0.9	27.50	1.7	1,818	47.32
0.75 to <2.50	3,151	1.33	1.1	40.32	2.6	2,977	94.49
2.50 to <10.00	1,463	4.80	0.5	34.08	3.1	1,638	111.96
10.00 to <100.00	655	17.93	0.1	15.48	1.7	516	78.81
100.00 (Default)	18	100.00	<0.1	12.99	1.5	14	76.58
Sub-total	114,722	0.29	14.7	33.34	0.8	16,345	14.25
of which:							
SMEs							
0.00 to <0.15	494	0.07	0.2	49.44	2.2	134	27.21
0.15 to <0.25	70	0.23	0.1	47.33	2.4	35	49.45
0.25 to <0.50	47	0.39	0.1	40.61	3.2	30	63.08
0.50 to <0.75	67	0.64	0.1	50.51	0.6	36	53.60
0.75 to <2.50	18	1.31	0.1	50.61	3.1	20	110.41
2.50 to <10.00	23	5.01	0.1	50.59	2.8	33	140.71
10.00 to <100.00	2	29.35	<0.1	43.09	3.6	4	217.03
100.00 (Default)	0	100.00	<0.1	99.89	1.7	0	0.16
Sub-total	721	0.47	0.5	48.83	2.2	291	40.33
Specialized Lending							
0.00 to <0.15	83	0.07	<0.1	53.51	3.7	33	39.07
0.15 to <0.25	21	0.23	<0.1	43.10	4.0	13	60.93
0.25 to <0.50	46	0.39	<0.1	48.85	3.7	37	81.37
0.50 to <0.75	25	0.64	<0.1	51.53	3.6	27	107.82
0.75 to <2.50	61	1.27	<0.1	47.40	3.5	78	127.63
2.50 to <10.00	309	4.75	<0.1	18.57	4.8	229	74.26
10.00 to <100.00	127	30.50	<0.1	10.28	3.7	78	61.03
100.00 (Default)	1	100.00	<0.1	18.90	1.9	0	22.24
Sub-total	674	8.34	0.2	27.99	4.2	495	73.49
Other							
0.00 to <0.15	99,040	0.04	10.5	33.59	0.6	6,680	6.74
0.15 to <0.25	2,414	0.23	0.6	24.48	3.0	813	33.68
0.25 to <0.50	3,379	0.39	0.7	32.40	1.7	1,608	47.57
0.50 to <0.75	3,750	0.64	0.8	26.93	1.7	1,755	46.80
0.75 to <2.50	3,072	1.33	1.0	40.12	2.6	2,879	93.74
2.50 to <10.00	1,131	4.81	0.4	37.97	2.6	1,376	121.66
10.00 to <100.00	526	14.85	<0.1	16.65	1.3	435	82.63
100.00 (Default)	16	100.00	<0.1	10.51	1.5	13	83.32
Sub-total	113,328	0.24	14.0	33.28	0.8	15,559	13.73

Dec 31, 2018

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	12	0.05	0.2	58.27	1.2	1	9.11
0.15 to <0.25	2	0.23	<0.1	56.71	1.8	0	22.82
0.25 to <0.50	5	0.39	0.1	56.99	1.4	2	33.54
0.50 to <0.75	6	0.64	0.1	57.43	1.3	3	47.20
0.75 to <2.50	8	1.35	0.1	57.05	1.5	5	62.28
2.50 to <10.00	8	4.32	0.1	56.19	1.2	6	78.64
10.00 to <100.00	1	25.62	<0.1	56.64	1.1	1	93.33
100.00 (Default)	0	100.00	<0.1	16.50	1.0	0	206.25
Sub-total	41	1.82	0.6	57.25	1.3	18	43.88
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	0.11	<0.1	56.18	1.3	0	12.37
0.15 to <0.25	1	0.23	<0.1	56.56	1.7	0	21.94
0.25 to <0.50	3	0.39	<0.1	57.02	1.2	1	29.26
0.50 to <0.75	2	0.64	<0.1	57.17	1.4	1	38.42
0.75 to <2.50	3	1.29	0.1	56.73	1.4	2	51.21
2.50 to <10.00	4	4.17	0.1	55.15	1.2	2	67.31
10.00 to <100.00	0	19.20	<0.1	55.31	1.4	0	89.62
100.00 (Default)	0	100.00	<0.1	16.50	1.0	0	206.25
Sub-total	14	1.93	0.2	56.37	1.3	6	46.06
Other retail non-SMEs							
0.00 to <0.15	11	0.05	0.2	58.32	1.2	1	9.03
0.15 to <0.25	0	0.23	<0.1	57.57	1.8	0	27.97
0.25 to <0.50	3	0.39	<0.1	56.96	1.6	1	37.92
0.50 to <0.75	4	0.64	<0.1	57.57	1.3	2	51.69
0.75 to <2.50	5	1.39	<0.1	57.28	1.6	3	70.18
2.50 to <10.00	4	4.45	<0.1	57.05	1.2	4	87.98
10.00 to <100.00	1	27.36	<0.1	57.00	1.0	1	94.33
100.00 (Default)	0	0	0	0	0	0	0
Sub-total	28	1.76	0.3	57.67	1.3	12	42.83
Total (all exposure classes)	146,385	0.30	16.1	35.07	0.9	23,060	15.75

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.							Jun 30, 2019
(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	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	5	0.07	<0.1	45.00	2.5	1	28.18
0.15 to <0.25	93	0.22	0.2	45.00	2.5	45	47.92
0.25 to <0.50	35	0.38	0.1	45.00	2.5	22	63.87
0.50 to <0.75	5	0.69	<0.1	45.00	2.5	4	76.50
0.75 to <2.50	2	1.48	<0.1	45.00	2.5	2	98.73
2.50 to <10.00	1	3.81	<0.1	45.00	2.5	1	141.98
10.00 to <100.00	0	18.72	<0.1	45.00	2.5	0	201.78
100.00 (Default)	3	100.00	<0.1	45.00	2.5	0	0
Sub-total¹	246	2.35	0.4	45.00	2.5	166	67.69
of which:							
SMEs							
0.00 to <0.15	0	0	0	0	0	0	0
0.15 to <0.25	5	0.21	0.1	45.00	2.5	2	36.88
0.25 to <0.50	2	0.38	<0.1	45.00	2.5	1	51.01
0.50 to <0.75	2	0.69	<0.1	45.00	2.5	1	63.21
0.75 to <2.50	1	1.44	<0.1	45.00	2.5	1	88.06
2.50 to <10.00	0	4.13	<0.1	45.00	2.5	0	105.78
10.00 to <100.00	0	18.72	<0.1	45.00	2.5	0	201.78
100.00 (Default)	0	0	0	0	0	0	0
Sub-total	10	0.78	0.1	45.00	2.5	5	53.34
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	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-total¹	102	0	0.1	0	0	91	89.51
Other							
0.00 to <0.15	5	0.07	<0.1	45.00	2.5	1	28.18
0.15 to <0.25	89	0.22	0.1	45.00	2.5	43	48.49
0.25 to <0.50	32	0.38	<0.1	45.00	2.5	21	64.85
0.50 to <0.75	3	0.69	<0.1	45.00	2.5	2	85.13
0.75 to <2.50	1	1.52	<0.1	45.00	2.5	1	111.31
2.50 to <10.00	1	3.78	<0.1	45.00	2.5	1	145.46
10.00 to <100.00	0	0	0	0	0	0	0
100.00 (Default)	3	100.00	<0.1	45.00	2.5	0	0
Sub-total	134	2.47	0.2	45.00	2.5	70	52.19
Total	246	2.35	0.4	45.00	2.5	166	67.69

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.

in € m.							Dec 31, 2018
(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	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	4	0.07	<0.1	45.00	2.5	1	27.87
0.15 to <0.25	60	0.22	0.2	45.00	2.5	29	47.98
0.25 to <0.50	29	0.38	0.1	45.00	2.5	19	63.83
0.50 to <0.75	5	0.69	<0.1	45.00	2.5	4	82.55
0.75 to <2.50	4	1.31	<0.1	45.00	2.5	4	104.85
2.50 to <10.00	0	6.47	<0.1	45.00	2.5	1	163.37
10.00 to <100.00	0	0	0	0	0	0	0
100.00 (Default)	0	100.00	<0.1	45.00	2.5	0	0
Sub-total¹	177	0.57	0.4	45.00	2.5	127	71.66
of which:							
SMEs							
0.00 to <0.15	0	0	0	0	0	0	0
0.15 to <0.25	2	0.22	<0.1	45.00	2.5	1	37.85
0.25 to <0.50	2	0.38	<0.1	45.00	2.5	1	51.13
0.50 to <0.75	1	0.69	<0.1	45.00	2.5	0	67.93
0.75 to <2.50	0	1.51	<0.1	45.00	2.5	0	91.92
2.50 to <10.00	0	3.85	<0.1	45.00	2.5	0	103.85
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	0.52	0.1	45.00	2.5	3	53.24
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	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-total¹	74	0	0.1	0	0	69	93.52
Other							
0.00 to <0.15	4	0.07	<0.1	45.00	2.5	1	27.87
0.15 to <0.25	58	0.22	0.1	45.00	2.5	28	48.25
0.25 to <0.50	27	0.38	<0.1	45.00	2.5	18	64.85
0.50 to <0.75	5	0.69	<0.1	45.00	2.5	4	84.83
0.75 to <2.50	3	1.29	<0.1	45.00	2.5	3	106.26
2.50 to <10.00	0	7.26	<0.1	45.00	2.5	1	181.41
10.00 to <100.00	0	0	0	0	0	0	0
100.00 (Default)	0	100.00	<0.1	45.00	2.5	0	0
Sub-total	98	0.58	0.2	45.00	2.5	55	55.93
Total	177	0.57	0.4	45.00	2.5	127	71.66

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 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 the RWA by an 8 % capital ratio.

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

in €m.	Three months ended Jun 30, 2019		Three months ended Mar 31, 2019	
	a	b	a	b
	RWA	Capital requirements	RWA	Capital requirements
1 Counterparty credit risk RWA under the IMM opening balance	20,087	1,607	18,077	1,446
2 Book size	(1,011)	(81)	2,043	164
3 Book quality	(24)	(2)	(31)	(3)
4 Model updates	0	0	0	0
5 Methodology and policy	0	0	(250)	(20)
6 Acquisitions and disposals	0	0	0	0
7 Foreign exchange movements	(229)	(18)	248	20
8 Other	0	0	0	0
9 Counterparty credit risk RWA under the IMM closing balance	18,823	1,506	20,087	1,607

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 decrease in RWA for counterparty credit risk exposures under the IMM by 6.3 % or € 1.3 billion since March 31, 2019 is predominantly driven by the category “Book size” reflecting reduced business activities mainly in CIB.

Article 439 (e-g) 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

in €m.	Jun 30, 2019				
	a	b	c	d	e
	Gross positive fair value or net carrying amount	Netting benefits	Netted current credit exposure	Collateral held	Net credit exposure
1 Derivatives	408,769	327,473	81,296	79,325	1,971
2 Securities Financing Transactions	521,384	434,671	86,713	9,070	77,642
3 Cross-product netting	0	0	0	0	0
4 Total	930,153	762,144	168,009	88,396	79,614

		Dec 31, 2018				
		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	353,424	278,622	74,802	66,917	7,885
2	Securities Financing Transactions	495,036	393,746	101,290	8,069	93,221
3	Cross-product netting	0	0	0	0	0
4	Total	848,460	672,368	176,091	74,986	101,106

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

		Jun 30, 2019					
		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	2,057	95,046	0	60,088	171,901	209,022
	Bonds	1,723	23,505	967	18,637	186,742	163,797
	Equity securities	332	10,026	0	0	131,099	143,472
	Other collateral	4,697	1,308	4,487	0	6,063	5,093
	Total	8,809	129,885	5,453	78,725	495,805	521,384

		Dec 31, 2018					
		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	2,120	72,442	15	49,823	152,633	189,381
	Bonds	1,776	24,655	818	16,094	157,517	141,715
	Equity securities	156	10,115	0	0	146,983	158,645
	Other collateral	4,219	551	4,432	0	6,389	5,294
	Total	8,272	107,764	5,265	65,917	463,521	495,036

For further details on derivative exposure please also refer to our Annual Report 2018 table “Maximum exposure to credit risk” on page 104 and table “Credit exposure from derivatives” on page 120.

Article 439 (j) 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

		Jun 30, 2019			Dec 31, 2018		
		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	7,274	239	209,424	8,641	279	265,744
	Index credit default swaps	0	0	565,306	0	0	531,065
	Total return swaps	0	16	10,993	0	0	10,055
	Credit options	0	0	69,860	0	0	34,363
	Total notionals	7,274	255	855,583	8,641	279	841,227
Fair values							
	Positive fair value (asset)	159	18	10,150	182	14	8,253
	Negative fair value (liability)	533	24	11,040	118	24	8,169

Market risk

Own funds requirements for market risk under the standardized approach

Article 445 CRR - Market Risk Standardized Approach

As of June 30, 2019, the securitization positions, for which the specific interest rate risk is calculated using the market risk standardized approach, generated capital requirements of €269 million corresponding to risk weighted-assets of €3.4 billion. As of December 31, 2018 these positions generated capital requirements of €418 million corresponding to risk weighted-assets of €5.2 billion.

For nth-to-default credit default swaps the capital requirement was €1.3 million corresponding to risk weighted-assets of €16 million compared with €2.6 million and €33 million as of December 31, 2018.

The capital requirement for Collective Investment Undertakings under the market risk standardized approach was €7 million corresponding to risk weighted-assets of €87 million as of June 30, 2019, compared with €14 million and €180 million as of December 31, 2018.

The capital requirement for longevity risk under the market risk standardized approach was €15 million corresponding to risk-weighted assets of €183 million as of June 30, 2019, compared with €14 million and €180 million as of December 31, 2018.

EU MR1 – Market risk under the standardized approach

in €m.	Jun 30, 2019		Dec 31, 2018	
	a	b	a	b
	RWA	Capital requirements	RWA	Capital requirements
Outright products				
1 Interest rate risk (general and specific)	0	0	0	0
2 Equity risk (general and specific) ¹	69	6	144	12
3 Foreign exchange risk ²	88	7	125	10
4 Commodity risk	0	0	0	0
4a Longevity risk	183	15	180	14
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) ³	3,361	269	5,224	418
9 Total	3,702	296	5,673	454

¹ Equity risk RWA of €69 million is from collective investment undertakings.

² Foreign Exchange risk RWA includes €71 million from the former Postbank portfolio and €17 million from collective investment undertakings.

³ Securitization RWA of €3,361 million includes the nth to default component.

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. Further details on the movements on the various components can be found in the section “Development of risk-weighted assets” on page 96 of our Annual Report 2018.

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

in €m.	Jun 30, 2019		Dec 31, 2018	
	a	b	a	b
	RWA	Capital requirements	RWA	Capital requirements
1 VaR (higher of values a and b)	4,835	387	5,368	429
a) Previous day's VaR (Article 365(1) (VaRt-1))	–	98	–	118
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)	–	387	–	429
2 SVaR (higher of values a and b)	13,787	1,103	16,426	1,314
a) Latest SVaR (Article 365(2) (sVaRt-1))	–	294	–	347
b) Average of the SVaR (Article 365(2) during the preceding sixty business days (sVaRavg) x multiplication factor (ms) (Article 366)	–	1,103	–	1,314
3 Incremental risk charge -IRC (higher of values a and b)	6,709	537	10,068	805
a) Most recent IRC value (incremental default and migration risks calculated in accordance with Article 370 and Article 371 of the CRR)	–	537	–	805
b) Average of the IRC number over the preceding 12 weeks	–	415	–	694
4 Comprehensive Risk Measure – CRM (higher of values a, b and c)	0	0	0	0
a) Most recent risk number for the correlation trading portfolio (article 377 of the CRR)	–	0	–	0
b) Average of the risk number for the correlation trading portfolio over the preceding 12-weeks	–	0	–	0
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)	–	0	–	0
5 Other	0	0	0	0
6 Total	25,331	2,026	31,862	2,549

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 the RWA by an 8 % capital ratio.

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

in €m.	Three months ended Jun 30, 2019						
	a	b	c	d	e	f	g
	VaR	SVaR	IRC	Comprehensive risk measure	Other	Total RWA	Total capital requirements
1 Market Risk RWA opening balance ¹	4,570	14,696	7,179	0	0	26,445	2,116
1a Regulatory adjustment ²	(3,517)	(11,546)	(193)	0	0	(15,256)	(1,220)
1b RWA at the previous quarter-end (end of the day) ³	1,053	3,150	6,986	0	0	11,189	895
2 Movement in risk levels	80	528	(1,802)	0	0	(1,194)	(96)
3 Model updates/changes	0	0	0	0	0	0	0
4 Methodology and policy	0	0	0	0	0	0	0
5 Acquisitions and disposals	0	0	0	0	0	0	0
6 Foreign exchange movements	0	0	0	0	0	0	0
6a Market data changes and recalibrations	87	0	0	0	0	87	7
7 Other	0	0	0	0	0	0	0
8a RWA at the end of the reporting period (end of the day) ³	1,219	3,678	5,184	0	0	10,081	806
8b Regulatory adjustment ²	3,616	10,109	1,525	0	0	15,250	1,220
8 Market Risk RWA closing balance ¹	4,835	13,787	6,709	0	0	25,331	2,026

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 Mar 31, 2019						
		a	b	c	d	e	f	g
in € m.		VaR	SVaR	IRC	Compre- hensive risk measure	Other	Total RWA	Total capital requirements
1	Market Risk RWA opening balance ¹	5,368	16,426	10,068	0	0	31,862	2,549
1a	Regulatory adjustment ²	(3,898)	(12,091)	0	0	0	(15,988)	(1,279)
1b	RWA at the previous quarter-end (end of the day) ³	1,470	4,336	10,068	0	0	15,874	1,270
2	Movement in risk levels	(581)	(754)	(3,104)	0	0	(4,439)	(355)
3	Model updates/changes	(27)	(432)	22	0	0	(437)	(35)
4	Methodology and policy	0	0	0	0	0	0	0
5	Acquisitions and disposals	0	0	0	0	0	0	0
6	Foreign exchange movements	0	0	0	0	0	0	0
6a	Market data changes and recalibrations	191	0	0	0	0	191	15
7	Other	0	0	0	0	0	0	0
8a	RWA at the end of the reporting period (end of the day) ³	1,053	3,150	6,986	0	0	11,189	895
8b	Regulatory adjustment ²	3,517	11,546	193	0	0	15,256	1,220
8	Market Risk RWA closing balance ¹	4,570	14,696	7,179	0	0	26,445	2,116

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 only calculated for comprehensive risk measure. For the other measures this is 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.

As of June 30, 2019 the RWA for market risk was € 29.0 billion. The IMA (Internal Models Approach) components of this totaled €25.3 billion which was a decrease of € 1.1 billion since March 31, 2019 driven by reductions coming from the stressed value-at-risk and incremental risk charge.

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 both ten day values and this has been calculated using a square root of ten conversion from the one day value.

EU MR3 – IMA values for trading portfolios¹

in €m.	Jun 30, 2019	Dec 31, 2018
	a	a
VaR (10 day 99 %)		
1 Maximum value	107.4	118.7
2 Average value	87.6	88.2
3 Minimum value	69.6	71.9
4 Period end	83.0	101.6
SVaR (10 day 99 %)		
5 Maximum value	328.3	394.4
6 Average value	262.3	266.8
7 Minimum value	166.8	193.7
8 Period end	259.2	304.1
IRC (99.9 %)		
9 Maximum value	684.1	847.6 ²
10 Average value	562.1	610.1 ²
11 Minimum value	414.7	445.9
12 Period end	414.7	805.4
Comprehensive risk capital charge (99.9 %)		
13 Maximum value	0	4.5
14 Average value	0	1.8
15 Minimum value	0	0
16 Period end	0	0

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

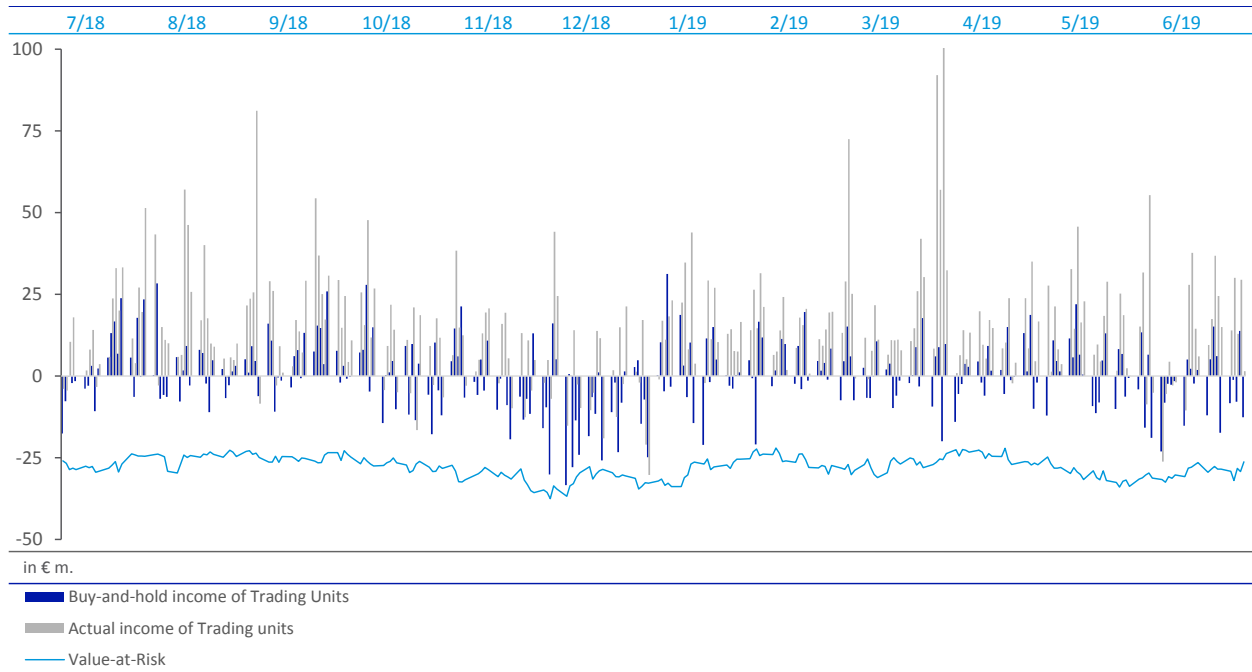
² IRC maximum and average values for December 31, 2018 have been restated.

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

During the first six months of 2019 there has not been a global outlier, where our loss on a buy-and-hold basis exceeded the value-at-risk of our Trading Books, compared with one outliers in 2018. There have not been any outliers on an Actual Backtesting basis in 2019, which compares the VaR to Total Income less Fees & Commissions, and Debt Valuation adjustments. There were no Actual Backtesting outlier in 2018.

Based on the backtesting results, our analysis of the underlying reasons for outliers and enhancements included in our value-at-risk methodology we continue to believe that our value-at-risk model will remain an appropriate measure for our trading market risk under normal market conditions. The following graph shows the trading units daily buy-and-hold income in comparison to the value-at-risk as of the close of the previous business day for the trading days of the reporting period. The value-at-risk is presented in negative amounts to visually compare the estimated potential loss of our trading positions with the buy and hold income. Figures are shown in millions of euro. The chart shows that our trading units achieved a positive buy and hold income for 53 % of the trading days for the first half of 2019 (versus 52 % in 2018).

EU MR4 – Comparison of VAR estimates with gains/losses



Operational risk

Article 446 CRR - Operational Risk Exposure

In the first six months of 2019 our total operational risk losses were lower compared to the first half year 2018. The operational risk losses continued to be driven predominantly by losses and provisions arising from civil litigation and regulatory enforcement actions. Such losses accounted for 90 % of the total operational risk losses up to June 30, 2019. For a description of our current legal and regulatory proceedings, please see section “Provisions” of the Interim Report as of June 30, 2019 on page 66 and in the Annual Report 2018 in Note 29 “Provisions” on page 310 of the Consolidated Financial Statements. Our non-legal operational risk losses reduced to approximately 57 % of those in the first six months of 2018.

Our operational risk management fosters a forward-looking approach to monitoring potential profits and losses, focusing on regular review of civil litigations and regulatory enforcement matters, trend analysis based upon available losses and key risk indicator data. The regulatory capital requirement is mainly driven by large external and internal operational risk events as well as reasonably possible litigation losses, which are reflected through provisions, contingent liabilities and legal forecasts in our AMA model. For a description of our modelling approach, please see section “Drivers for Operational Risk Capital Development” of our Annual Report 2018 on page 82.

Exposure to securitization positions

Article 449 (k) 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

in € m.	Jun 30, 2019			Dec 31, 2018		
	Exposure amount	Capital requirements IRBA ¹	Capital requirements standardized approach	Exposure amount	Capital requirements IRBA ¹	Capital requirements standardized approach
≤ 10 %	56,695	327	1	63,779	377	0
> 10 ≤ 20 %	15,590	136	56	2,475	12	20
> 20 ≤ 50 %	1,747	24	20	1,909	40	5
> 50 ≤ 100 %	1,369	45	43	1,226	33	42
> 100 ≤ 350 %	184	8	12	46	5	1
> 350 ≤ 650 %	77	25	0	64	28	0
> 650 < 1,250 %	0	0	0	63	35	29
≥ 1,250% ≤ 1,325 %	165	142	23	200	112	0
Total securitization positions retained or purchased	75,826	707	154	69,762	643	97

¹ After considering value adjustments according to Article 266 (1,2) CRR. Including capital requirements for maturity mismatch of synthetic securitizations by risk weight band defined as notional weighted average risk weight of the underlying pool.

Following an exposure increase of 9 % or €6.1 billion, the capital requirements for securitization positions in the banking book increased by 16 % to €0.9 billion. This was primarily driven by investor activities in senior tranches treated under the new securitization framework which are subject to the new risk weight floor of 15 %. The introduction of the new framework including a risk weight floor of 15 % instead of 7 % is also causing the shift of exposures from the risk weight bucket ≤ 10 % into the > 10 ≤ 20 % bucket.

As of June 30, 2019 the capital requirements for 19 % of retained securitization positions in the banking book were calculated under the new securitization framework. Overall, 92 % of the securitization exposures in the banking book were treated according to the advanced approaches Supervisory Formula Approach ("SFA") and Securitization Internal Ratings Based Approach (SEC-IRBA).

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 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 158 in our annual Pillar 3 Report 2018.

Trading book securitization positions retained or purchased by risk weight band subject to the market risk standardized approach (MRSA)

in € m.	Jun 30, 2019				Dec 31, 2018			
	Exposure amount		Capital requirements, MRSA		Exposure amount		Capital requirements, MRSA	
	Securiti- zation	Re- Securitization	Securiti- zation	Re- Securitization	Securiti- zation	Re- Securitization	Securiti- zation	Re- Securitization
≤ 10 %	494	0	3	0	1,126	0	7	0
> 10 ≤ 20 %	2,016	0	20	0	2,776	0	27	0
> 20 ≤ 50 %	173	4	6	0	237	1	9	0
> 50 ≤ 100 %	587	1	38	0	425	0	30	0
> 100 ≤ 350 %	144	0	17	0	60	0	16	0
> 350 ≤ 650 %	168	0	41	0	220	2	58	1
> 650 < 1,250 %	11	0	3	0	0	0	0	0
1,250 %	292	19	139	2	389	2	266	2
Total securitization positions retained or purchased	3,886	24	267	2	5,233	5	412	3

Compared to December 2018, the exposure of trading book securitization and re-securitization positions decreased by € 1.328 billion or 25 % to € 3.9 billion mainly due to a reduction in the securitized bond inventory. Alongside with this cutback the capital requirements for securitization and re-securitization positions reduced by € 146 million, predominantly in the 1,250 % risk weight bucket. For 8 % of the securitization positions the own funds requirement cap of Article 335 CRR is applied, which results in a capital requirement saving of € 170 million, which is realized in the 1,250 % risk weight bucket.

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. The current framework does not provide for a mandatory minimum leverage ratio to be complied with.

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.

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 other on-balance sheet exposure component (excluding derivatives and SFTs) reflects the accounting values of the assets (excluding derivatives and SFTs) as well as regulatory adjustments for asset amounts deducted in determining Tier 1 capital.

The following tables show the leverage ratio exposure and the leverage ratio in accordance with the disclosure tables of the implementing technical standards (ITS) which were adopted by the European Commission via Commission Implementing Regulation (EU) 2016/200 published in the Official Journal of the European Union on February 16, 2016. 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 6 in this report.

Summary reconciliation of accounting assets and leverage ratio exposures

in € bn. (unless stated otherwise)	Jun 30, 2019	Dec 31, 2018
Total assets as per published financial statements	1,436	1,348
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	(192)	(140)
Adjustment for securities financing transactions (SFTs)	12	14
Adjustment for off-balance sheet items (i.e. conversion to credit equivalent amounts of off-balance sheet exposures)	101	99
(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	(52)	(49)
Leverage ratio total exposure measure	1,304	1,273

N/M – Not meaningful

Leverage ratio common disclosure

in € bn. (unless stated otherwise)	Jun 30, 2019	Dec 31, 2018
On-balance sheet exposures (excluding derivatives and SFTs)		
On-balance sheet items (excluding derivatives, SFTs and fiduciary assets, but including collateral)	968	925
(Asset amounts deducted in determining Tier 1 capital)	(10)	(13)
Total on-balance sheet exposures (excluding derivatives, SFTs and fiduciary assets)	958	911
Derivative exposures		
Replacement cost associated with all derivatives transactions (i.e. net of eligible cash variation margin)	35	36
Add-on amounts for PFE associated with all derivatives transactions (mark-to-market method)	143	141
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)	(33)	(25)
(Exempted CCP leg of client-cleared trade exposures)	(9)	(11)
Adjusted effective notional amount of written credit derivatives	379	393
(Adjusted effective notional offsets and add-on deductions for written credit derivatives)	(370)	(376)
Total derivatives exposures	144	159
SFT exposures		
Gross SFT assets (with no recognition of netting), after adjusting for sales accounting transactions	163	144
(Netted amounts of cash payables and cash receivables of gross SFT assets)	(75)	(54)
Counterparty credit risk exposure for SFT assets	13	11
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	1	1
(Exempted CCP leg of client-cleared SFT exposure)	0	0
Total securities financing transaction exposures	102	103
Other off-balance sheet exposures		
Off-balance sheet exposures at gross notional amount	277	280
(Adjustments for conversion to credit equivalent amounts)	(177)	(180)
Other off-balance sheet exposures	101	99
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)	51.1	52.1
Leverage ratio total exposure measure	1,304	1,273
Leverage ratio (fully loaded, in %)	3.9	4.1
Tier 1 capital (phase-in)	54.1	55.1
Leverage ratio total exposure measure	1,304	1,273
Leverage ratio (phase-in, in %)	4.2	4.3

N/M – Not meaningful

Breakdown of on-balance sheet exposures (excluding derivatives and SFTs)

in € bn.

(unless stated otherwise)

	Jun 30, 2019	Dec 31, 2018
Total on-balance sheet exposures (excluding derivatives, SFTs, and exempted exposures)	968	925
of which:		
Trading book exposures	212	196
Banking book exposures	756	728
of which:		
Covered bonds	1	1
Exposures treated as sovereigns	227	245
Exposures to regional governments, MDB, international organizations and PSE not treated as sovereigns	1	1
Institutions	17	17
Secured by mortgages of immovable properties	193	187
Retail exposures	35	35
Corporate	174	168
Exposures in default	8	6
Other exposures (e.g. equity, securitizations, and other non-credit obligation assets)	101	68

Process used to manage the risk of excessive leverage

As described in the section “Risk management principles” and “Risk governance” on pages 50-54 of our Annual Report 2018, 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 60 of our Annual Report 2018.

Factors that had an impact on the leverage ratio in the first half of 2019

As of June 30, 2019, our fully loaded leverage ratio was 3.9 % compared to 4.1 % as of December 31, 2018, taking into account as of June 30, 2019 a fully loaded Tier 1 capital of € 51.1 billion over an applicable exposure measure of € 1,304 billion (€ 52.1 billion and € 1,273 billion as of December 31, 2018, respectively).

Our leverage ratio according to transitional provisions was 4.2 % as of June 30, 2019 (4.3 % as of December 31, 2018), calculated as Tier 1 capital according to transitional rules of € 54.1 billion over an applicable exposure measure of € 1,304 billion (€ 55.1 billion and € 1,273 billion as of December 31, 2018, respectively).

In the first half of 2019, our leverage exposure increased by € 31 billion to € 1,304 billion. On-balance sheet exposures (excluding derivatives and SFTs) increased by € 46 billion reflecting the development of our balance sheet: pending settlements were € 24 billion higher from seasonally low year-end levels, loans grew by € 16 billion, other assets increased by € 16 billion and non-derivative trading assets rose by € 9 billion. This was partly offset by cash and central bank / interbank balances which decreased by € 26 billion. Furthermore, the leverage exposure related to derivatives decreased by € 15 billion (€ 6 billion excluding deductions of receivables assets for cash variation margin provided in derivatives transactions) mainly driven by lower effective notional amounts of written credit derivatives and higher deductions of receivables assets for cash variation margin provided in derivatives transactions. SFT and Off-balance sheet exposures were almost unchanged with a decrease of € 2 billion and a slight increase of € 1 billion, respectively.

The increase in leverage exposure in the first half of 2019 included a positive foreign exchange impact of € 5 billion mainly due to the depreciation 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.

Our leverage ratio calculated as the ratio of total assets under IFRS to total equity under IFRS was 22 as of June 30, 2019 compared to 20 as of December 31, 2018.

For main drivers of the Tier 1 capital development please refer to section "Own funds" on page 6 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. 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 firstly for June 30, 2019. It replaces the central bank eligibility-concept we applied for earlier disclosures and also for the comparative period as of December 31, 2018. Consequently, the disclosure as of June 30, 2019 is based on the median of the last two quarterly data points. Four quarterly data points would then be available from December 31, 2019 onwards.

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 assets pledged with settlement systems, including 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 2018 in Note 22 "Transfer of financial assets, assets pledged and received as collateral" on page 297 of the Consolidated Financial Statements, and restricted assets held to satisfy obligations to insurance companies' policy holders are included within Note 39 "Information on subsidiaries" on page 347 of the Consolidated Financial Statements.

Encumbered and unencumbered assets

		Jun 30, 2019							
		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	43.0	23.6	–	–	16.6	6.5	–	–
040	Debt securities	58.3	44.3	58.3	44.3	102.3	68.2	102.3	68.2
	of which:								
050	Covered bonds	0.6	0.4	0.6	0.4	2.2	1.9	2.2	1.9
060	Asset-backed securities	1.9	0.5	1.9	0.5	1.4	0.1	1.4	0.1
070	Issued by general governments	43.1	40.7	43.1	40.7	65.1	60.1	65.1	60.1
080	Issued by financial corporations	11.1	2.1	11.1	2.1	23.1	5.1	23.1	5.1
090	Issued by non-financial corporations	4.0	1.2	4.0	1.2	12.8	0.6	12.8	0.6
120	Other assets	133.8	11.4	–	–	1,082.1	154.2	–	–
	of which:								
122	Loans other than loans on demand	75.9	0	–	–	366.1	0	–	–
123	Securities purchased under resale agreements and securities borrowed	0	0	–	–	87.9	0	–	–
124	Cash margin receivables / prime brokerage receivables	44.7	0	–	–	11.7	0	–	–
010	Total	235.2	79.2	–	–	1,201.1	228.9	–	–

		Dec 31, 2018							
		010	030	040	050	060	080	090	100
		Encumbered assets				Unencumbered assets			
		Carrying amount		Fair value		Carrying amount		Fair value	
		of which central bank eligible		of which central bank eligible		of which central bank eligible		of which central bank eligible	
in € bn.									
030	Equity instruments	52.4	0	–	–	15.2	0	–	–
040	Debt securities	57.8	39.8	57.8	39.8	80.1	56.4	80.1	56.4
	of which:								
050	Covered bonds	1.8	1.6	1.8	1.6	0	0	0	0
060	Asset-backed securities	4.1	1.5	4.1	1.5	0	0	0	0
070	Issued by general governments	33.3	27.0	33.3	27.0	53.6	49.7	53.6	49.7
080	Issued by financial corporations	19.4	11.0	19.4	11.0	12.5	0	12.5	0
090	Issued by non-financial corporations	4.7	1.1	4.7	1.1	10.1	5.4	10.1	5.4
120	Other assets	127.2	35.1	–	–	1,064.7	201.2	–	–
	of which:								
122	Loans other than loans on demand	75.5	24.07	–	–	347.7	0	–	–
123	Securities purchased under resale agreements and securities borrowed	0	0	–	–	80.1	0	–	–
124	Cash margin receivables / prime brokerage receivables	38.6	0	–	–	13.9	0	–	–
010	Total	239.5	74.8	–	–	1,161.7	257.5	–	–

Collateral received

		Jun 30, 2019			
		010	030	040	060
		Fair value of encumbered collateral received or own debt securities issued		Fair value of collateral received or own debt securities issued available for encumbrance	
		of which notionally eligible EHQLA and HQLA		of which EHQLA and HQLA	
in € bn.					
140	Loans on demand	0	0	0	0
150	Equity instruments	89.8	58.4	7.8	3.1
160	Debt securities	181.3	159.1	34.1	24.4
	of which:				
170	Covered bonds	1.2	1.1	0.5	0.5
180	Asset-backed securities	1.9	0.6	3.8	0.5
190	Issued by general governments	158.1	154.6	27.5	23.1
200	Issued by financial corporations	13.9	3.1	4.1	0.8
210	Issued by non-financial corporations	9.3	1.4	2.3	0.2
220	Loans and advances other than loans on demand	0	0	4.1	0
230	Other collateral received	0	0	0	0
130	Total collateral received	271.1	217.5	46.0	27.6
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	–	–	2.4	0.3
250	Total Assets, collateral received and own debt securities issued	506.3	296.7	–	–

		Dec 31, 2018			
		010	030	040	060
		Fair value of encumbered collateral received or own debt securities issued		Unencumbered Fair value of collateral received or own debt securities issued available for encumbrance	
in € bn.		of which central bank eligible		of which central bank eligible	
140	Loans on demand	0	0	0	0
150	Equity instruments	114.0	0	10.3	0
160	Debt securities	153.2	97.1	36.6	13.1
of which:					
170	Covered bonds	3.8	3.3	0.9	0
180	Asset-backed securities	10.8	4.2	2.5	0
190	Issued by general governments	90.1	65.1	21.6	11.8
200	Issued by financial corporations	49.1	27.2	12.6	0
210	Issued by non-financial corporations	12.2	2.8	2.9	1.3
220	Loans and advances other than loans on demand	0	0	0	0
230	Other collateral received	0.0	0	0.0	0
130	Total collateral received	265.9	97.1	49.0	13.1
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	–	–	2.6	0.3
250	Total Assets, collateral received and own debt securities issued	505.4	171.1	–	–

The above 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.

For June 2019, €235.2 billion of the Group's on-balance sheet assets were encumbered. These assets primarily related to firm financing of trading inventory and other securities, to funding (i.e., Pfandbriefe and covered bonds) secured against loan collateral and to cash collateral for derivative margin requirements.

For June 2019, the Group had received securities as collateral with a fair value of €313.0 billion, of which €271.1 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.

The above tables of encumbered assets include assets that are not encumbered at an individual entity level, but which may be subject to restrictions in terms of their transferability within the group. Such restrictions may be due to local connected lending requirements or similar regulatory restrictions.

'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.

Sources of encumbrance

		Jun 30, 2019		Dec 31, 2018	
		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	231.0	245.1	157.9	173.5
011	of which:				
012	Derivatives	57.0	58.6	47.4	49.0
013	Repurchase agreements	107.1	109.4	42.4	43.6
014	Collateralized central bank deposits and covered bonds issued	48.4	58.6	47.7	60.2

The above 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.

List of tables

Own funds template (incl. RWA and capital ratios)	7
Reconciliation of shareholders' equity to regulatory capital	11
Development of regulatory capital	12
Own funds and eligible liabilities disclosure ordered by insolvency hierarchy	13
Ranking of liabilities in an insolvency proceeding under German law	14
EU OV1 – Overview of RWA	15
EU CR10 – IRB (specialized lending and equities)	16
Credit risk exposures of other non-credit obligation assets	17
EU CR1-A – Credit quality of exposures by exposure class and instrument	19
EU CR1-B – Credit quality of exposures by industry	21
EU CR1-C – Credit quality of exposures by geography	23
EU CR1-D – Ageing of past-due exposures	24
EU CR1-E – Non-performing and forborne exposures	25
NPL1 – Credit quality of forborne exposures	25
NPL4 - Performing and non-performing exposures and related provisions	27
NPL3 - Credit quality of performing and non-performing exposures by past due days	29
EU CR2-A – Changes in the stock of general and specific credit risk adjustments	31
EU CR2-B – Changes in the stock of defaulted and impaired loans and debt securities	31
EU CR3 – CRM techniques – Overview	32
CRM techniques by exposure class	33
EU CR4 – Standardized approach – credit risk exposure and credit risk mitigation (CRM) effects	35
EU CR5 – Standardized approach	36
EU CR6 – AIRB approach – Credit risk exposures by exposure class and PD range	39
EU CR6 – FIRB approach – Credit risk exposures by exposure class and PD range	48
EU CR7 – IRB approach – Effect on the RWAs of credit derivatives used as CRM techniques	52
EU CR8 – RWA flow statement of credit risk exposures under the IRB approach	53
EU CCR1 – Analysis of CCR exposure by approach	54
EU CCR2 – CVA capital charge	55
EU CCR8 – Exposures to CCPs	55
EU CCR3 – Standardized approach – CCR exposures by regulatory portfolio and risk	56
EU CCR4 – AIRB approach – CCR exposures by portfolio and PD scale	58
EU CCR4 – FIRB approach – CCR exposures by portfolio and PD scale	63
EU CCR7 – RWA flow statement of counterparty credit risk exposures under the internal model method	65
EU CCR5-A – Impact of netting and collateral held on exposure values	65
EU CCR5-B – Composition of collateral for exposures to CCR	66
EU CCR6 – Credit derivatives exposures	66
EU MR1 – Market risk under the standardized approach	67
EU MR2-A – Market Risk under the internal models approach (IMA)	68
EU MR2-B – RWA flow statements of market risk exposures under the IMA	68
EU MR3 – IMA values for trading portfolios ¹	70
EU MR4 – Comparison of VAR estimates with gains/losses	71
Banking book securitization positions retained or purchased by risk weight band	73
Trading book securitization positions retained or purchased by risk weight band subject to the market risk standardized approach (MRSA)	74
Summary reconciliation of accounting assets and leverage ratio exposures	76
Leverage ratio common disclosure	76
Breakdown of on-balance sheet exposures (excluding derivatives and SFTs)	77
Encumbered and unencumbered assets	79
Collateral received	80
Sources of encumbrance	81

