COMMERZBANK

The bank at your side

Disclosure Report as at 31 December 2017

in accordance with the Capital Requirements Regulation (CRR)

Contents

3 Introduction

5 Equity capital, capital requirement and RWA

5 Capital structure

11 Connection between balance-sheet and regulatory positions

15 Capital requirement and RWA

17 Risk-oriented overall bank management

17 Risk statement

18 Risk management organisation

19 Risk strategy and risk management

20 Risk-bearing capacity and stress testing

22 A. Credit risk (CR)

22 Risk management

26 Credit risk model

35 Credit risk mitigation

38 Credit risk and credit risk mitigation in the IRBA

44 Credit risk and credit risk mitigation in the SACR

47 Overarching portfolio analyses

53 Loan loss provisions for default risks

62 Investments in the banking book

64 B. Counterparty credit risk (CCR)

64 Risk management

66 Information on regulatory methods

68 Information by regulatory risk-weighting approach

72 Further information on counterparty credit risk

74 C. Securitisations (SEC)

74 Securitisation process

75 Risk management

76 Valuation methods and quantitative information

82 D. Market risk (MR)

82 Risk management

84 Market risk model

86 Quantitative information on market risks

89 Interest rate risk in the banking book

91 E. Liquidity risk (LR)

91 Risk management

91 Liquidity risk model

94 F. Operational risk (OR)

94 Risk management

95 OpRisk model

96 G. Other risks

97 Appendix

97 Additional tables (Appendix 1 to Appendix 5)

114 Overview: Compliance with the CRR requirements (Appendix 6)

118 List of abbreviations

Due to rounding, numbers and percentages presented throughout this report may not add up precisely to the totals provided.

Introduction

Commerzbank

Commerzbank is one of Germany's leading banks for private and corporate clients, and an internationally active universal bank with locations spanning more than 50 countries. It has one of the densest branch networks of any private-sector bank in Germany, with approximately 1,000 branches. Commerzbank serves a total of over 18 million private and small-business customers and more than 60,000 corporate clients worldwide.

As part of its strategy, Commerzbank is focusing its business activities on the two core segments "Private and Small-Business Customers" and "Corporate Clients", offering them a comprehensive portfolio of banking and capital market services. The run-off segment Asset&Capital Recovery (ACR) comprises – besides parts of the Public Finance business – all non-strategic activities of commercial real estate and ship financing. Each segment is managed by a member of the Board of Managing Directors.

All staff and management functions are contained in Group Management: Group Audit, Group Communications, Group Compliance, Group Development & Strategy, Group Finance, Group Human Resources, Group Investor Relations, Group Legal, Group Treasury and the central risk functions. The support functions are provided by Group Services. These include Group Banking Operations, Group Markets Operations, Group Information Technology, Group Organisation & Security and Group Delivery Center. The staff, management and support functions are combined in the Others and Consolidation division for reporting purposes.

On the domestic market, Commerzbank Aktiengesellschaft is headquartered in Frankfurt am Main, from where it manages a nationwide branch network through which all customer groups are served. Its major German subsidiaries are comdirect bank AG and Commerz Real AG. Outside Germany, the Bank has 6 material subsidiaries, 21 operational foreign branches and 32 representative offices in more than 50 countries and is represented in all major financial centres, such as London, New York, Tokyo, Hong Kong and Singapore. However, the focus of the Bank's international activities is on Europe.

A detailed description of Commerzbank Group is given in the Annual Report 2017.

Objective of the Disclosure Report

This report is intended to give the reader a detailed insight into Commerzbank's current risk profile and risk management. In particular, it contains information on:

- the Commerzbank Group's structure from both a regulatory and accounting perspective,
- the Group's capital structure,
- the Commerzbank Group's general risk management system and
- the risk management in respect of specific types of risk.

The report may also be seen as complementary to the Annual Report pursuant to the German Commercial Code (Handelsgesetzbuch – HGB), since in contrast to the Annual Report it focuses primarily on the supervisory perspective.

In this report Commerzbank Aktiengesellschaft as the ultimate parent company of the regulated banking group is complying with the disclosure requirements of Articles 431 – 455 of regulation (EU) No. 575/2013 – the Capital Requirements Regulation (CRR) and the guidelines on the disclosure requirements under Part Eight of Regulation (EU) No. 575/2013 - EBA/GL/2016/11 - as at 31 December 2017. The tables defined according to the EBA's guidelines and integrated into the report are indicated by the table names provided with the prefix EU.

Fulfilment of the CRR requirements within the Commerzbank Group is presented in detail in the „Overview: Compliance with the CRR requirements“ in the appendix (table ANH6) to this Disclosure Report.

Scope

This Disclosure Report is based on the group of companies consolidated for regulatory purposes. The companies consolidated for regulatory purposes only include those carrying out banking and other financial business. The consolidated group consists of a domestic parent company and its affiliated companies. The aim of regulatory consolidation is to prevent multiple use of capital that in fact exists only once by subsidiary companies in the financial sector. The companies consolidated under IFRS, by contrast, comprise all the companies controlled by the ultimate parent company.

In the context of the disclosure requirements (Article 431 (3) CRR), besides the Disclosure Report itself, all policies and processes have to be documented as a main component to fulfil the Pillar 3 requirements of the Basel framework. The appropriateness and practicality of the Bank's disclosure practice has to be reviewed on a regular basis. For this purpose, Commerzbank has defined guidelines for the Disclosure Report which regulate the overarching, strategic part of the instructions. The operative targets and responsibilities are additionally defined in separate documents.

With consolidated total assets that are regularly well in excess of €30bn, Commerzbank is one of the biggest financial institutions in Germany. Hence, independent of the criteria in Article 433 CRR, Commerzbank has implemented the reporting requirements during the period from Q2 2015 on and discloses the quarterly and semi-annually required information as appropriate.[1]

Waiver rule pursuant to Article 7 CRR

Under the waiver rule pursuant to Article 7 CRR in conjunction with section 2a (1) of the German Banking Act (KWG), subsidiary companies in a banking group may apply for exemption from the requirements of Article 6 (1) CRR (on capital, large exposures, exposures to transferred credit risk and disclosure) at single entity level. This is on condition, among other things, that both the parent company and subsidiary are licensed in the same member state and the subsidiary is included in the supervision on a consolidated basis of the parent company.

Exemption is also on condition that there is no current or foreseen material practical or legal impediment to the prompt transfer of own funds or the repayment of liabilities by the parent company, that the parent company guarantees the commitments entered into by the subsidiary, the risk evaluation, measurement and control procedures of the parent company cover the subsidiary, and the parent company holds more than 50% of the voting rights in the subsidiary or can appoint or remove a majority of the members of the management body and can therefore exercise a dominant influence over the subsidiary.[2]

In the case of institutions and parent companies that were already making use of a waiver before the CRR came into effect under the rules of the German Banking Act (KWG) applicable at the time, using the disclosure procedure then specified, exemption is deemed to have been granted under Article 7 CRR and the relevant standards under section 25a (1) sentence 3 KWG (see section 2a (5) KWG).

The waiver rule is used by comdirect bank AG. It is – for instance by virtue of the risk management carried out at Group level (in line with MaRisk) – integrated into the internal processes and risk management of Commerzbank Aktiengesellschaft as the ultimate parent company of the banking group. Among other things this applies to the risk evaluation, measurement and control procedures. Commerzbank Aktiengesellschaft holds 82.3% of the voting rights in comdirect bank AG and guarantees its commitments towards third parties (through letters of comfort).

According to Article 7 CRR in conjunction with section 2a (1) KWG, parent companies within the group of companies consolidated for regulatory purposes are also entitled to this exemption. The opportunity this offers for Commerzbank Aktiengesellschaft as the ultimate parent company of the Commerzbank Group to be exempted from the requirements at single entity level has been utilised since 2007. The conditions for claiming the waiver continue to apply.

Utilisation of the waiver rule was reported at the outset to BaFin and the Bundesbank with evidence of compliance with the requirements and is subsequently monitored and documented on occasion.

[1] See EBA/GL/2014/14, title V (18).
[2] Under Article 7 (1) d) CRR, a dominant influence means either having a majority of voting rights or having the right to appoint a majority of the members of the management body of the subsidiary.

Equity capital, capital requirement and risk-weighted assets (RWA)

Capital structure

The main rules governing compliance with minimum regulatory capital ratios for solvency purposes in the EU are contained in the Capital Requirements Directive (CRD) IV, the Capital Requirements Regulation (CRR), a European regulation which, unlike the CRD IV Directive, has direct legal effect for all European banks, together with the SSM Regulation (Council Regulation No. 1024/2013 of 15 October 2013 conferring specific tasks on the European Central Bank concerning policies relating to the prudential supervision of credit institutions). This legislation is supplemented at national level in Germany by further provisions in the German Banking Act, the German Solvency Regulation and other regulations. In addition, Implementing Technical Standards (ITS) and Regulatory Technical Standards (RTS) provide explanations about particularly complex matters. The introduction of the new regulations in 2014 has strengthened the quality of regulatory capital compared with the previous regime, made capital requirements more stringent and set higher minimum requirements for banks' capital adequacy.

To avoid having the requirements take effect on a single date, certain parts of the new rules are subject to defined phase-in rules.

Common Equity Tier 1 (CET1) capital consists largely of subscribed capital plus reserves and non-controlling interests. Adjustments to this figure may be necessitated by any number of causes, for example goodwill, intangible assets, write-downs of assets (if assets are not valued cautiously enough in the regulator's view), shortfalls due to the comparison of expected losses with the provisions recognised for them and the correction of tax loss carry-forwards. Adding Additional Tier 1 capital (AT1), which can contain subordinated debt instruments with certain conditions, produces Tier 1 capital. Tier 2 capital consists largely of subordinated debt instruments which are not eligible as Additional Tier 1 capital. The eligibility of these capital components has been reduced, as over the final five years of their life they may now only be amortised on a straight-line basis.

Commerzbank seeks to achieve the following objectives in managing its capital:

- adherence to the statutory minimum capital requirements at Group level and in all companies included in the regulatory Group,
- ensuring that the planned capital ratios are met, including the new ECB/EBA requirements,
- provision of sufficient reserves to guarantee the Bank's freedom of action at all times,
- strategic allocation of Tier 1 capital to business segments and divisions in order to exploit growth opportunities.

The financial crisis made the importance of adequate CET 1 capital levels for banks become an issue of increasing public concern. At Commerzbank, Tier 1 capital has always been a key management target. The Bank's specifications for the capital ratios far exceed the minimum statutory requirements. The Bank's risk-bearing capacity and market expectations play an important role in determining the internal capital ratio targets. For this reason, Commerzbank has stipulated minimum ratios for regulatory capital. CET 1 capital is allocated via a regular process that takes account of the Bank's strategic direction, profitable new business opportunities in the core business of each business segment as well as aspects of risk-bearing capacity.

Measures relating to the Bank's capital are approved by the full Board of Managing Directors, subject to the authorisation granted by the AGM. During the past year, Commerzbank met the minimum statutory capital requirements as well as the requirements of the ECB and EBA at all times. In the pro forma calculation of fully phased-in implementation of the CRR requirements, the transitional regulations are completely disregarded.

The evaluations in the tables below comprehensively illustrate the total own funds available for the entire Commerzbank Group. These own funds are also the basis for the calculation of the equity capital adequacy as reported to the Bundesbank. Details of the issued capital instruments of Commerzbank Group according to Article 437 (1) b) and c) CRR are given on the Commerzbank website in the section Debt holder information/Capital instruments. Further information on our leverage ratio according to Article 451 CRR is given in Note (59) (Regulatory capital requirements) and Note (60) (Leverage ratio) in the Annual Report 2017, which is published on our website.

The composition of the regulatory capital and the capital ratios are as follows:

CAP1: Equity structure (basis: EU 1423/2013)

Line €m		A: Amount on the day of disclosure	C: Residual amount[1]
Common Equity Tier 1 capital: instruments and reserves			
1	Capital instruments and the related share premium accounts	18,444	0
1a	thereof: subscribed capital	1,252	
1b	thereof capital reserve	17,192	
2	Retained earnings	11,036	
3	Accumulated other comprehensive income (and other reserves, to include unrealised gains and losses under the applicable accounting standards)	–818	see line 26a
3a	Funds for general banking risk	0	
4	Amount of qualifying items referred to in Art. 484 (3) and the related share premium accounts subject to phase out from CET1	0	
4a	Public sector capital injections grandfathered until 1 January 2018	0	
5	Minority interests (amount allowed in consolidated CET1)	742	–74
5a	Independently reviewed interim profits net of any foreseeable charge or dividend	118	
6	**Common Equity Tier 1 (CET1) capital before regulatory adjustments**	**29,523**	
Common Equity Tier 1 (CET1) capital: regulatory adjustments			
7	Additional value adjustments (negative amount)	–264	
8	Intangible assets (net of related tax liability) (negative amount)	–2,310	–577
10	Deferred tax assets subject to future profit ratio excluding those arising from temporary differences (net of related tax liability where the conditions in Art. 38 (3) are met) (negative amount)	–566	–141
11	Fair value reserves related to gains or losses on cash flow hedges	54	
12	Negative amounts resulting from the calculation of expected loss amounts	–541	–135
13	Any increase in equity that results from securitised assets (negative amount)	0	
14	Gains or losses on liabilities valued at fair value resulting from changes in own credit standing	–36	–22
15	Defined benefit pension fund assets (negative amount)	–257	–64
16	Direct and indirect holdings by an institution of own CET1 instruments (negative amount)	–48	–12
17	Holdings of the CET1 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
18	Direct and indirect holdings by the institution of the CET1 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)	0	0
19	Direct, indirect and synthetic holdings by the institution of the CET1 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
20a	Exposure amount of the following items which qualify for a RW of 1250%, where the institution opts for the deduction alternative	–213	
20b	thereof: qualifying holdings outside the financial sector (negative amount)	0	
20c	thereof: securitisation positions (negative amount)	–213	
20d	thereof: free deliveries (negative amount)	0	
21	Deferred tax assets subject to future profit ratio and arising from temporary differences (amount above 10% threshold, net of related tax liability where the conditions in Art. 38 (3) are met) (negative amount)	–110	–28
22	Amount exceeding the 15% threshold (negative amount)	0	0
23	thereof: direct and indirect holdings by the institution of the CET1 instruments of financial sector entities where the institution has a significant investment in those entities	0	0
25	thereof: deferred tax assets subject to future profit ratio and arising from temporary differences	0	0

Line €m		A: Amount on the day of disclosure	C: Residual amount[1]
25a	Losses for the current financial year (negative amount)	0	0
25b	Foreseeable tax charges relating to CET1 items (negative amount)	0	0
26	Regulatory adjustments applied to CET1 in respect of amounts subject to pre-CRR treatment	374	
26a	thereof: regulatory adjustments relating to unrealised profit and losses according to Art. 467 and 468	374	
26a.1	thereof: unrealised losses from risk positions to sovereigns in the category "available for sale" of the international accounting standard IAS39 adopted by the Union	0	
26a.2	thereof: unrealised profits from risk positions to sovereigns in the category "available for sale" of the international accounting standard IAS39 adopted by the Union	0	
26b	Amount to be deducted from or added to CET1 with regard to additional deduction or correction positions and deductions required pre CRR	0	
27	Qualifying AT1 deductions that exceed the AT1 capital of the institution (negative amount)	0	
27a	Other CET1 capital elements or deductions	0	
28	**Total regulatory adjustments to Common Equity Tier 1 (CET1) capital**	**–3,916**	
29	**CET1 capital**	**25,607**	
Additional Tier 1 (AT1) capital: instruments			
30	Capital instruments and the related share premium accounts	0	
31	thereof: classified as equity under applicable accounting standards	0	
32	thereof: classified as liabilities under applicable accounting standards	0	
33	Amount of qualifying items referred to in Art. 484 (4) and the related share premium accounts subject to phase out from AT1	1,025	
33a	Public sector capital injections grandfathered until 1 January 2018	0	
34	Qualifying Tier 1 capital included in consolidated AT1 capital (including minority interests not included in line 5) issued by subsidiaries and held by third parties	0	0
35	thereof: instruments issued by subsidiaries subject to phase out	0	
36	**Additional Tier 1 (AT1) capital before regulatory adjustments**	**1,025**	
Additional Tier 1 (AT1) capital; regulatory adjustments			
37	Direct and indirect holdings by an institution of own AT1 instruments (negative amount)	0	0
38	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
39	Direct and indirect holdings of the AT1 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)	0	0
40	Direct and indirect holdings by the institution of the AT1 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
41	Regulatory adjustments applied to AT1 capital in respect of amounts subject to pre-CRR treatment and transitional treatments subject to phase-out as prescribed in the CRR (i.e. CRR residual amounts)	–646	
41a	Residual amounts deducted from AT1 capital with regard to deduction from CET1 capital during the transitional period pursuant to Art. 472 CRR	–646	
41a.1	thereof: losses of the current financial year (net)	0	
41a.2	thereof: intangibles	–577	
41a.3	thereof: shortfall of provisions to expected losses	–68	
41a.4	thereof: direct holdings of own CET1 instruments	–1	
41a.5	thereof: reciprocal cross holdings	0	

Line €m		A: Amount on the day of disclosure	C: Residual amount[1]
41a.6	thereof: equity capital instruments of financial sector entities where the institution does not have a significant investment in those entities	0	
41a.7	thereof: equity capital instruments of financial sector entities where the institution has a significant investment in those entities	0	
41b	Residual amounts deducted from AT1 capital with regard to deductions from Tier 2 capital during the transitional period pursuant to Art. 475 CRR	0	
41b.1	thereof: reciprocal cross holdings of Tier 2 instruments	0	
41b.2	thereof: direct positions of non-significant capital holdings of other financial sector entities	0	
41c	Amount to be deducted from or added to AT1 capital with regard to additional deduction or correction positions and deductions required pre CRR	0	
41c.1	thereof: possible deduction or correction positions for unrealised losses	0	
41c.2	thereof: possible deduction or correction positions for unrealised profits	0	
41c.3	thereof: others	0	
42	Qualifying Tier 2 deductions that exceed the Tier 2 capital of the institution (negative amount)	0	
42a	Other AT1 capital elements or deductions	0	
43	**Total regulatory adjustments to Additional Tier 1 (AT1) capital**	**–647**	
44	**Additional Tier 1 (AT1) capital**	**378**	
45	**Tier 1 capital (T1 = CET1 + AT1)**	**25,985**	
Tier 2 capital: instruments and provisions			
46	Capital instruments and the related share premium accounts	5,162	
47	Amount of qualifying items referred to in Art. 484 (5) and the related share premium accounts subject to phase out from Tier 2	79	
47a	Public sector capital injections grandfathered until 1 January 2018	0	
48	Qualifying own funds instruments included in consolidated Tier 2 capital (including minority interests and AT1 instruments not included in rows 5 or 34) issued by subsidiaries and held by third parties	310	0
49	thereof: instruments issued by subsidiaries subject to phase out	0	
50	Credit risk adjustments	0	
51	**Tier 2 capital before regulatory adjustments**	**5,551**	
Tier 2 capital: regulatory adjustments			
52	Direct and indirect holdings by an institution of own Tier 2 instruments and subordinated loans (negative amount)	–80	0
53	Holdings of the Tier 2 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
54	Direct and indirect holdings of the Tier 2 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)	0	0
54a	thereof: new holdings not subject to transitional arrangements	0	0
54b	thereof: holdings existing before 1 January 2013 and subject to transitional arrangements	0	0
55	Direct and indirect holdings of the Tier 2 instruments and subordinated loans 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
56	Regulatory adjustments applied to Tier 2 in respect of amounts subject to pre-CRR treatment and transitional treatments subject to phase-out as prescribed in the CRR (i.e. CRR residual amounts)	–68	
56a	Residual amounts deducted from Tier 2 capital with regard to deduction from Common Equity Tier1 capital during the transitional period pursuant to Art. 472 of the CRR	–68	
56a.1	thereof: shortfall of provisions to expected losses	–68	

Line €m		A: Amount on the day of disclosure	C: Residual amount[1]
56a.2	thereof: CET1 instruments of financial sector entities where the institution does not have a significant investment in those entities	0	
56a.3	thereof: CET1 instruments of financial sector entities where the institution has a significant investment in those entities	0	
56b	Residual amount deducted from Tier 2 capital with regard to deduction from AT1 capital during the transitional period pursuant to Art. 475 CRR	0	
56b.1	thereof: AT1 capital of financial sector entities where the institution does not have a significant investment in those entities	0	
56b.2	thereof: AT1 capital of financial sector entities where the institution has a significant investment in those entities	0	
56c	Amount to be deducted from or added to Tier 2 capital with regard to additional deduction or correction positions and deductions required pre CRR	0	
56c.1	thereof: possible deduction or correction positions for unrealised losses	0	
56c.2	thereof: possible deduction or correction positions for unrealised profits	0	
56d	Other Tier 2 capital elements or deductions	0	
57	**Total regulatory adjustments to Tier 2 capital**	**–148**	
58	**Tier 2 capital**	**5,404**	
59	**Total capital (TC = Tier 1 + Tier 2)**	**31,389**	
59a	Risk-weighted assets in respect of amounts subject to pre-CRR treatment and transitional treatments subject to phase-out as prescribed in CRR (i.e. CRR residual amounts)	180	
59a.1	thereof: items not to be deducted from CET1 (CRR residual amounts)	152	
59a.1.1	thereof: deferred tax assets subject to future profitability, net of related tax liabilities	141	
59a.1.2	thereof: indirect holdings of own CET1 instruments	11	
59a.1.3	thereof: items not to be deducted from CET1 capital positions (CRR residual amounts)	0	
59a.1.4	thereof: reciprocal cross holdings of CET1 instruments, direct holdings of non-significant investments in the capital of other financial sector entities	0	
59a.2	thereof: items not to be deducted from AT1 capital positions (CRR residual amounts)	0	
59a.2.1	thereof: indirect holdings of own AT1 instruments	0	
59a.2.2	thereof: indirect holdings of non-significant investments in the AT1 capital of other financial sector entities	0	
59a.2.3	thereof: indirect holdings of significant investments in the AT1 capital of other financial sector entities	0	
59a.3	thereof: items not to be deducted from Tier 2 capital positions (CRR residual amounts)	0	
59a.3.1	thereof: indirect holdings of own Tier 2 instruments	0	
59a.3.2	thereof: indirect holdings of non-significant investments in the capital of other financial sector entities	0	
59a.3.3	thereof: indirect holdings of significant investments in the capital of other financial sector entities	0	
60	**Total risk-weighted assets**	**171,369**	

Line €m		A: Amount on the day of disclosure	C: Residual amount[1]
Capital ratios and buffers			
61	Common Equity Tier 1 (as a percentage of total risk exposure amount)	14.9	
62	Tier 1 (as a percentage of total risk exposure amount)	15.2	
63	Total capital (as a percentage of total risk exposure amount)	18.3	
64	Institution specific buffer requirement (CET1 requirement in accordance with Art. 92 (1) (a) plus capital conservation and countercyclical buffer[2] requirements, plus systemic risk buffer, plus systemically important institution (G-SII or O-SII) buffer expressed as a percentage of risk exposure amount)	6.268	
65	thereof: capital conservation buffer requirement	1.250	
66	thereof: countercyclical buffer requirement	0.018	
67	thereof: systemic risk buffer requirement	0	
67a	thereof: Global Systemically Important Institution (G-SII) or Other Sytemically Important Institution (O-SII) buffer	0.5	
68	Common Equity Tier 1 available to meet buffers (as a percentage of risk exposure amount)	10.4	
Amounts below the thresholds for deduction (before risk weighting)			
72	Direct and indirect holdings by the institution of capital instruments of financial sector entities where the institution does not have a significant investment in those entities (amount below 10% threshold and net of eligible short positions)	619	
73	Direct and indirect holdings by the institution of the CET1 instruments of relevant financial sector entities where the institution has a significant investment in those entities (amount below 10% threshold and net of eligible short positions)	298	
75	Deferred tax assets subject to future profit ratio, arising from temporary differences (amount below 10% threshold, net of related tax liability where the conditions in Art. 38 (3) are met)	2,572	
Applicable caps on the inclusion of provisions in Tier 2			
76	Credit risk adjustments included in Tier 2 in respect of exposures under the standard approach (before application of cap)	0	
77	Cap on inclusion of credit risk adjustments in Tier 2 under the standardised approach	298	
78	Credit risk adjustments included in Tier 2 in respect of exposures subject to the internal ratings-based approach (before application of cap)	0	
79	Cap on inclusion of credit risk adjustments allowable in Tier 2 related to exposures subject to internal ratings-based approach	653	
Capital instruments subject to phase-out arrangements			
80	Current cap for CET1 instruments subject to phase-out arrangements	0	
81	Amount excluded from CET1 due to cap (excess over cap after redemptions and maturities)	0	
82	Current cap on AT1 instruments subject to phase out arrangements	1,129	
83	Amount excluded from AT1 due to cap (excess over cap after redemptions and maturities)	0	
84	Current cap on Tier 2 instruments subject to phase out arrangements	380	
85	Amount excluded from Tier 2 due to cap (excess over cap after redemptions and maturities)	0	

[1] Amounts underlying regulations prior to (EU) No. 575/2013 or mandatory residual amounts according to regulation (EU) No. 575/2013.
[2] The geographical breakdown of credit exposures relevant for the calculation of the countercyclical capital buffer is shown in ANH2 in the appendix. It also derives the amount of institution-specific countercyclical capital buffer.

Connection between balance-sheet and regulatory positions

For Commerzbank as a banking group as defined in section 10a KWG and Article 11 CRR the capital relevant to the determination of regulatory capital is based on the consolidated financial statements under FINREP which is prepared based on the Group balance sheet according to IFRS. To reconcile the requirements for regulatory capital with the slightly different amounts reported in the financial statements, capital as determined under IFRS was adjusted with the aid of so-called prudential filters.

There was no under-capitalisation of subsidiaries subject to the deduction method during the period under review. Nor are there any obstacles to the transfer of own funds or the repayment of liabilities in accordance with Article 436 c) CRR between Commerzbank AG and the main subsidiaries in the reporting period.

With Basel 3, the Basel Committee on Banking Supervision published among other things comprehensive rules on the components of shareholders' equity and ratios as well as the management of liquidity risk. The Capital Requirements Directive and Regulation (CRD IV) package of measures, constituting the European implementation of Basel 3, has been in force since 1 January 2014, with the more stringent capital requirements being phased in up to 2019. Since then, numerous supplementary regulations have been published by the European Banking Authority (EBA) in particular, and these will now gradually enter into force in 2017 and in subsequent years. Commerzbank has prepared itself for the more stringent capital adequacy requirements by taking a number of steps.

The reconciliation between the Group's equity reported in the balance sheet and the equity reported for regulatory purposes is shown in the tables CAP2, EU LI1 and EU LI2 below.

In table EU LI1, there is in total an immaterial difference of €170m between the carrying values according to the group of consolidated companies reported in the balance sheet (column a) and the carrying values according to the regulatory group of consolidated companies (column b). This difference results from the different scopes of consolidation and consolidation methods for accounting and regulatory purposes. The companies where the consolidation methods for accounting and regulatory purposes differ are listed entity by entity in table EU LI3 in the Appendix.

TableEU LI2 shows the main reasons for the differences between the carrying values for financial reporting in the balance sheet and the regulatory risk exposure amounts (exposure in the standard approach and EaD in the IRB approach). The carrying values are reconciled to the regulatory risk exposure amounts. Row 1 of table EU LI2 comprises the carrying values of assets and row 2 the carrying values of liabilities for the regulatory group of companies in accordance with the allocation of table EU LI1. Column a of rows 1 and 2 corresponds to the total of column b in table EU LI1 less the total of column g in table EU LI1. Row 3 is the difference between row 1 and row 2.

The target figures to be reconciled (row 9) are the input values for the RWA calculation. The target figure includes both on-balance-sheet and off-balance-sheet positions. With the exception of netting, credit risk mitigation methods (CRM) are not taken into account in the target figure of on-balance-sheet positions. The target figure for market risk is at present not clearly defined in functional terms. In the internal model, risk parameters such as VaR, SVaR and IRC and the RWAs calculated from them are relevant. By contrast, exposure values are not considered separately here for the regulatory reporting. For this reason, a reconciliation of the values for market risk to the exposure taken into account for regulatory purposes has been dispensed within table EU LI2. As a result, no total has been calculated for rows 5 to 9 in column a.

Row 4 "Off-balance-sheet amounts" shows the off-balance-sheet amounts in total and before taking into account credit conversion factors (CCFs) in column a. In columns b (credit risk), d (securitisation risk) and e (market risk), the risk exposure values for the off-balance-sheet positions are calculated after taking into account the corresponding credit conversion factors (CCFs) and credit risk mitigation (CRM) methods to allow a comparison with COREP and with the other tables in the Disclosure Report.

Row 5 "Differences resulting from different netting rules, other than those already included in row 2" shows the effects from the different regulatory netting rules compared with those for accounting purposes, taking into account the netting effect in accordance with row 2. In terms of counterparty credit risk, effects result from derivatives and securities financing transactions (SFTs).

Row 6 “Differences in valuation” discloses the valutation differences between carrying values in the balance sheet and regulatory exposures after taking into account netting effects from row 5. The valuation differences in counterparty credit risk include regulatory add-ons for future risks due to considering wrong-way risk and relevant haircuts for collaterals.

Row 7 “Differences due to the consideration of allowances” shows the value adjustments to the IRBA positions for credit risk and securitisation risk. The carrying values on the balance sheet are net carrying values (after loan loss provisions). Under the IRB approach the risk exposure amount is in general the carrying values in the balance sheet; credit risk adjustments such as valuation allowances are not deducted. Value adjustments deducted from the carrying value of assets when drawing up the financial statements are added back as part of the reconciliation.

Other reconciliation effects not already included in reconciliation rows 5 to 7 are reported in row 8 “Others”.

CAP2: Reconciliation of equity as reported in the balance sheet with regulatory capital (EU 1423/2013 / Art. 437 a CRR)

Position €m	Equity IFRS (Phase in)[1]	Equity FINREP[2]	Equity COREP[3]
Subscribed capital	1,252	1,252	1,252
Capital reserve	17,192	17,192	17,192
Retained earnings	11,062	11,073	11,073
Silent participations	0	0	0
Actuarial profits/losses current year	145	145	145
Changes due to the revaluation of own credit risk	–114	–114	–114
Revaluation reserve	–571	–572	–572
Valuation of cash flow hedges	–54	–54	–54
Currency translation reserve	–192	–193	–193
Distributable profit/loss from previous year (after suspension of retained earnings)	0	0	0
Distributable profit/loss from current year	156	195	195
Non-controlling interests	1,164	1,163	1,163
Equity as shown in balance sheet	**30,041**	**30,088**	**30,088**
Effects from debit valuation adjustments			–86
Correction of revaluation reserve			114
Correction to cash flow hedges reserve			54
Correction to phase-in (IAS 19)			260
Correction to non-controlling interests (minority)			–421
Goodwill			–1,507
Intangible assets			–1,381
Surplus in plan assets			–257
Deferred tax assets from loss carryforwards			–566
Shortfall due to expected loss			–608
Prudential valuation			–264
Own shares			–49
First loss positions from securitisations			–213
Advance payment risks			0
Deduction of offset components of Additional Tier 1 capital (AT1)			647
Deferred tax assets from temporary differences which exceed the 10% threshold			–110
Others and rounding			–95
CET1			**25,607**
Hybrid capital	1,144	1,144	1,144
Not eligible issues			–23
Others, especially hedge accounting, interests, agio, disagio			–96
Additional Tier 1 before deductions			**1,025**
Deduction of offset components of Additional Tier 1 capital (AT1)			–647
Additional Tier 1 after deductions			**378**
Subordinated capital	8,902	8,902	8,902
Decreased offsetting in the last 5 years of residual maturity			–3,045
Not eligible non-controlling interests			–103
Others, especially hedge accounting, interests, agio, disagio			–283
Tier 2 before deductions			**5,471**
Shortfall due to expected loss			–68
Tier 2 after deductions			**5,404**
Own funds	**40,087**	**40,134**	**31,389**

[1] Equity as shown in balance sheet. [2] Financial reporting, equity as shown in balance sheet, regulatory group of consolidated companies.
[3] Common solvency ratio reporting, regulatory capital.

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

	a	b	c	d	e	f	g
€m	Carrying values as reported in published financial statements	Carrying values under the regulatory scope of consolidation	Carrying values of items				
			Subject to the credit risk framework	Subject to the CCR framework	Subject to the securitisation framework	Subject to the market risk framework	Not subject to capital requirements or subject to deductions from capital
Assets							
Cash on hand and cash on demand	55,733	55,733	55,733	0	0	24,761	0
Financial Assets - Loans and Receivables	265,712	265,459	237,172	16,289	11,887	61,359	111
Financial Assets - Available for Sale	31,155	31,150	27,318	0	3,816	14,880	16
Financial Assets - Fair Value Option	23,745	23,745	1,097	22,636	12	11,341	1
Financial Assets - Held for Trading	63,666	63,892	0	47,533	82	61,162	333
Value adjustment on portfolio fair value hedges	153	153	153	0	0	0	0
Positive fair values of derivative hedging instruments	1,464	1,464	0	1,464	0	938	0
Holdings in companies accounted for using the equity method	181	181	181	0	0	0	0
Intangible assets	3,312	3,312	0	0	0	0	3,312
Fixed assets	1,600	1,600	1,600	0	0	0	0
Investment properties	16	16	16	0	0	0	0
Non-current assets held for sale and disposal groups	78	72	72	0	0	0	0
Current tax assets	767	767	767	0	0	0	0
Deferred tax assets	2,950	2,949	2,572	0	0	0	377
Other assets	1,961	1,829	1,416	0	0	23	390
Total assets	**452,493**	**452,323**	**328,096**	**87,922**	**15,797**	**174,464**	**4,541**
Liabilities and equity							
Financial Liabilities - Amortised Cost	341,260	341,049	0	10,939	0	62,072	330,111
Financial Liabilities - Fair Value Option	14,940	14,940	0	12,212	0	2,718	2,728
Financial Liabilities - Held for Trading	56,484	56,484	0	48,153	0	54,604	298
Value adjustment on portfolio fair value hedges	491	491	0	0	0	0	491
Negative fair values of derivative hedging instruments	2,255	2,255	0	2,255	0	1,084	0
Provisions	3,291	3,290	0	0	0	0	3,290
Current tax liabilities	673	673	0	0	0	0	673
Deferred tax liabilities	34	32	0	0	0	0	32
Liabilities of disposal groups	-	-	0	0	0	0	0
Other liabilities	3,024	3,019	0	0	0	0	3,019
Equity	30,041	30,088	0	0	0	0	30,088
Total liabilities and equity	**452,493**	**452,323**	**0**	**73,559**	**0**	**120,477**	**370,731**

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

		a	b	c	d	e
	€m	Total	Items subject to			
			Credit risk framework	CCR framework	Securitisation framework	Market risk framework
1	Assets carrying value amount under the regulatory scope of consolidation (as per template LI1)	447,782	328,096	87,922	15,797	174,464
2	Liabilities carrying value amount under the regulatory scope of consolidation (as per template LI1)	81,591	0	73,559	0	120,477
3	Total net amount under the regulatory scope of consolidation	366,190	328,096	14,363	15,797	53,987
4	Off-balance-sheet amounts	116,136	78,632	0	2,723	18,853
5	Differences due to different netting rules, other than those already included in row 2		0	1,797	0	
6	Differences in valuations		0	9,168	0	
7	Differences due to the consideration of allowances		2,769	0	44	
8	Others		4,721	0	0	
9	Exposure amounts considered for regulatory purposes		414,218	25,328	18,564	

Capital requirement and RWA

The capital requirements set out below relate to the Commerzbank Group and the figures are the same with regard to content as in the capital adequacy reports submitted to the Deutsche Bundesbank under Basel 3 Pillar 1.

Capital requirements by risk type

Of the overall capital requirement 73% relates to default risk positions (excluding counterparty credit risk). Commerzbank uses the Advanced Internal Ratings Based Approach (advanced IRBA; in the following referred to as IRBA) to determine the regulatory capital required. Article 150 CRR gives the option of partial use. The Standardised Approach to Credit Risk (SACR) may be used for part of the portfolios.

The Commerzbank Group and accordingly the group companies included in the disclosure are, as IRBA banks as defined in Article 148 (5) CRR, generally obliged to value investments in accordance with the IRBA rules. For investments entered into prior to 1 January 2008, Commerzbank has opted to apply grandfathering. These investment positions are temporarily excluded from the IRBA and treated in accordance with the SACR rules. They are given a risk weighting of 100%. The CRR also allows items to be permanently exempted from the IRBA. Since 31 December 2009 Commerzbank has applied the option pursuant to section 70 sentence 1 no. 9b of the German Solvency Regulation (SolvV) and Article 150 CRR. All investment positions which do not fall under the above-mentioned temporary grandfathering option are valued using the permanent partial use according to the SASA.

Of the overall capital requirement 7.4% relates to counterparty credit risk. Based on the EBA requirements, credit value adjustments (CVAs) are also assigned to this credit risk category

Securitised positions in the banking book are also shown as a seperate credit risk category subject to a capital requirement in the table EU OV1 below (1.6% of total capital requirement). Commerzbank treats these according to the IRBA and SACR rules for securitised positions. Capital deduction items of securitisations directly reduce the liable equity and thus are not included in the capital requirements.

Pursuant to Article 92 (3) b) and c) CRR, adequate capital must be set aside for market risk positions. As at 31 December 2017, capital requirements here are 5.1% of total requirements. Commerzbank uses an internal market risk model to calculate the regulatory capital requirement. This affects both the equity price and interest rate-related risk positions in the trading book as well as the total of currency positions and commodity positions. The standardised approaches are applied for smaller units in Commerzbank Group in accordance with the partial use option.

To calculate the capital adequacy requirement for operational risks, Commerzbank uses the advanced measurement approach (AMA). This risk category accounts for 12.3% oft he total capital requirements.

EU OV1: Overview of RWAs

€m			Risk weighted assets (RWAs)		Capital requirements
Article in CRR			31.12.2017	30.09.2017	31.12.2017
	1	Credit risk (excluding CCR)	125,857	126,245	10,069
438 (c) (d)	2	Of which the standardised approach	22,024	21,929	1,762
438 (c) (d)	3	Of which the foundation IRB (FIRB) approach	0	0	0
438 (c) (d)	4	Of which the advanced IRB (AIRB) approach	103,834	104,316	8,307
438 (d)	5	Of which equity IRB under the simple risk-weighted approach or the IMA	0	0	0
107, 438 (c) (d)	6	CCR (counterparty credit risk)	12,612	14,177	1,009
438 (c) (d)	7	Of which mark to market	1,438	1,775	115
438 (c) (d)	8	Of which original exposure	0	0	0
	9	Of which the standardised approach	0	0	0
	10	Of which internal model method (IMM)	6,848	7,551	548
438 (c) (d)	11	Of which risk exposure amount for contributions to the default fund of a CCP	157	188	13
438 (c) (d)	12	Of which CVA	4,169	4,664	334
438 (e)	13	Settlement risk	1	4	0
449 (o) (i)	14	Securitisation exposures in the banking book (after the cap)	2,749	2,826	220
	15	Of which IRB approach	1,709	1,777	137
	16	Of which IRB supervisory formula approach (SFA)	720	775	58
	17	Of which internal assessment approach (IAA)	757	748	61
	18	Of which the standardised approach	1,040	1,049	83
438 (e)	19	Market risk	8,673	10,542	694
	20	Of which the standardised approach	967	716	77
	21	Of which IMA	7,706	9,826	616
438 (e)	22	Large exposures	0	0	0
438 (f)	23	Operational risk	21,041	22,722	1,683
	24	Of which basic indicator approach	0	0	0
	25	Of which the standardised approach	0	0	0
	26	Of which advanced measurement approach	21,041	22,722	1,683
437 (2), 48, 60	27	Amounts below the thresholds for deduction (subject to 250% risk weight)	436	430	35
500	28	Floor adjustment	0	0	0
	29	**Total**	**171,369**	**176,946**	**13,710**

Risk-weighted assets were €171.4bn as at 31 December 2017, €5.6bn below the previous quarter's level and €19.2bn below the year-end 2016 level. The decline as compared to the previous year was mainly due to a reduction in risk assets in credit risk, market risk and operational risk. For credit risk the reduction was mainly due to active portfolio management, amongst others through a decline in the run-off portfolio and a securitisation transaction as well as reliefing effects from changes in currency rates. The reduction of risk assets in operational risk is due to an update of external loss data.

The overviews of the trend of risk-weighted assets (RWA) by main drivers EU CR8: RWA flow statements of credit risk exposures under the IRB approach, EU CCR7: RWA flow statements of CCR exposures under the IMM as well as EU MR2-B: RWA flow statements of market risk exposures under the IMA are given in the chapters on the respective risk types.

Risk-oriented overall bank management

Commerzbank defines risk as the danger of possible losses or profits foregone due to internal or external factors. In risk management, we normally distinguish between quantifiable and non-quantifiable types of risk. Quantifiable risks are those to which a value can normally be attached in financial statements or in regulatory capital requirements, while non-quantifiable risks, for example, include reputational and compliance risk.

Risk statement

According to Article 435 (1) e) and f) CRR, the risk statement is a declaration approved by the management body providing assurance that the risk management systems put in place are adequate and giving a description of the institution's general risk profile associated with the business strategy. The approval by the Board of Managing Directors was given together with the approval of the Disclosure Report.

The banking business has undergone fundamental changes due to the current low interest rate environment, legal requirements and digitalisation, as have the ways in which customers want to conduct their banking transactions. Commerzbank is rising to these major challenges with the strategic realignment: Commerzbank 4.0. The new strategy concentrates on focused growth, digitalisation and efficiency.

As part of this strategy, Commerzbank will concentrate rigorously on its core businesses and digitalise 80% of relevant processes, achieving significant efficiency gains and increasing profitability on a sustainable basis by the end of 2020. Its business is focused on two customer segments, "Private and Small-Business Customers" and "Corporate Clients".

The Bank is focusing on areas where it delivers particular added value to its customers, thereby setting itself apart from the competition; at the same time, it is systematically giving up businesses that do not fit with the strategic orientation. Non-strategic assets will continue to be divested, freeing up capital.

Our portfolio is already clearly dominated by default risks, which account for 74% of economically required capital, with market risk accounting for 22%. Our two main markets, Germany and Poland, in turn account for 59% of the credit exposure. In the expectation of a persistently challenging banking environment we wish to achieve a cost/income ratio (CIR) of under 66% and a net return on tangible equity (RoTE) of more than 6% by the end of 2020 through our strategy, which includes targeted growth measures and significant cost cuts.

Commerzbank's business model, defined as part of the business strategy, is embedded as a set of objectives in the Group Risk Strategy. This takes into account exogenous factors, such as risks from the macroeconomic environment, and endogenous factors, in particular the results of the annual risk inventory. In the risk inventory process, all economically significant quantifiable and unquantifiable risks arising from our business activities are assessed in terms of their materiality for risk management. Those risks assessed as being material are included in the Group Risk Strategy, and their management is further specified and operationalised in separate sub-risk strategies and policies. The annual update of the risk-bearing capacity concept ensures, that the main types of risk are adequately taken into account in the risk-bearing capacity calculation. The scope and management of credit risk, market risk, liquidity risk and operational risk are presented in the relevant chapters of this report. The chapter "Other risks" provides information on other types of risk classified as material.

Risk appetite refers to the maximum risk, in terms of both the amount and structure, which the Bank is willing and able to incur in pursuing its business objectives, without exposing itself to existential threats (risk tolerance). The guiding principle regarding risk appetite is to ensure that the Commerzbank Group has sufficient capital and liquidity resources on a sustained basis. Banks' core functions as transformers of liquidity and risk result in inevitable threats that can in extreme cases endanger the continued existence of the institution. For Commerzbank, in view of its business model, these inherent existential threats include the default of Germany, Poland, one or more of the other major EU countries (France, Italy, Spain or the UK, although Brexit is not deemed to be a default) or the default of the USA. Others include a deep recession lasting several years with serious repercussions for the German economy, a bank run and the collapse of global clearing houses or the foreign exchange markets, possibly triggered by a cyber attack. In general, cyber risk is an inherent, existential risk for Commerzbank in the context of increasing digitalisation.

Risk appetite is quantified in terms of risk limits and escalation mechanisms for capital and liquidity management, and by means of comprehensive early warning systems. Limits and guidelines are broken down across the risk types, segments and portfolios. They form an integral part of ongoing management and monitoring. In addition, regular portfolio-specific stress tests are also carried out.

Our liquidity management is based on the liquidity gap profile, which determines the expected future available net liquidity from positions both on and off the balance sheet over time subject to various scenario assumptions. Based on the methodology of the liquidity gap profile, management mechanisms such as recovery and early warning indicators are limited and monitored accordingly. The liquidity gap profile is limited in all maturity bands. The Group limits are broken down into individual Group units and currencies.

As part of monitoring the liquidity risk, the liquidity coverage ratio (LCR) has been integrated into the internal liquidity risk model as a minimum liquidity ratio defined by the regulator and binding secondary condition. At 144.6%, the average LCR of the last 12 reporting periods substantially exceeded the required minimum ratio (2017: 80%, 2018 onwards: 100%). The net stable funding ratio (NSFR) is due to be transposed into European law by the Basel Committee as part of the Capital Requirements Regulation II (CRR II). Commerzbank is already calculating both ratios as part of its regulatory reporting processes, communicating them in its internal reporting and reporting them to the supervisory authority. In addition, under Basel 3 the leverage ratio is used as a non-risk-sensitive indicator of leverage. At 31 December 2017, the leverage ratio came to 5.5% after taking into account the CRR transitional rules (phase in) and to 5.1% after full application of the revised CRR rule (fully phased in). Avoiding the risk of excessive leverage is an integral part of Commerzbank's management of its balance sheet.

To ensure an adequate capital backing, compliance with economic risk-bearing capacity requirements and the regulatory capital ratios is reviewed by means of an early warning system in both a forecast scenario and an adverse scenario. This is based on a gone concern approach aimed at protecting unsubordinated lenders. The approach is supplemented by scenarios aimed at ensuring the institution's continuing existence (going concern perspective).

Our Common Equity Tier 1 ratio was 14.9% at the end of 2017 under the transitional rules, or 14.1% under full application of Basel 3. For the year 2020 the Bank expects a Common Equity Tier 1 ratio under full application of Basel 3 of more than 13.0%. The risk-bearing capacity (RBC) ratio of 217% (target: >100%) comfortably meets risk-bearing capacity requirements. Loan loss provisions were at €781m in 2017, €119m below the the previous year's figure (€900m). This fall was the result of a much lower provisioning requirement in Asset & Capital Recovery, where the success in cutting back was reflected in significantly lower loan loss provisions. For 2018 as a whole, we expect a risk result under IFRS 9 of less than €600m. In the event of a huge, unexpected deterioration in geopolitical or economic conditions, or in the case of defaults of large individual customers, significantly higher loan loss provisions may become necessary.

Comprehensive, prompt, transparent and methodically adequate risk measurement is vital for ensuring that the Commerzbank Group has sufficient liquidity and capital resources on a permanent basis. Our business and risk strategy is made measurable, transparent, and controllable by the processes used. The risk measurement methods and models that we use comply with the latest common banking industry standards and are regularly reviewed by risk control, internal audit, our external auditors and the German and European supervisory authorities. The processes ensure that our risk-bearing capacity and our ability to meet financial obligations at all times are maintained on a lasting basis. We consider our risk management methods and processes to be appropriate and effective.

Risk management organisation

Risk management at Commerzbank is an overarching bank mission and follows the principle of the "three lines of defence". Each unit (segments and functions) forms the first line of defence within its framework of operative responsibility. For credit, market and liquidity risk the responsibility for the second line of defence lies with the Chief Risk Officer (CRO). The CRO is responsible for implementing the Group's risk policy guidelines laid down by the Board of Managing Directors and for the controlling of operational risks, and regularly reports to the Board of Managing Directors and the Supervisory Board's Risk Committee on the risk situation within the Group. The Risk Committee met five times in 2017. For other risks (e.g. IT risks or legal risks) the responsibility for the second line of defence may lie outside the risk function depending on the kind of risk. The third line of defence is internal audit.

The responsibilities within the risk function are split between Credit Risk Management Core, Credit Risk Management Non-Core, Intensive Care, Market Risk Management and Risk Controlling and Capital Management. In all segments except for Asset & Capital Recovery (ACR), credit risk management is separated into a performing loan area and Intensive Care, while in ACR it has been merged into a single unit across all rating classes. All divisions have a direct reporting line to the CRO.

The Board of Managing Directors has sole responsibility for fundamental strategic decisions. The Board of Managing Directors has delegated operational risk management to committees. Under the relevant rules of procedure, these are the Group Credit Committee, the Group Market Risk Committee, the Group OpRisk Committee and the Group Strategic Risk Committee, which decides on risk issues of an overarching nature. The CRO chairs all these committees and has the right of veto. In addition, the CRO is a member of the Asset Liability Committee.

Further details on the risk management organisation can be found in the Risk Report in the Annual Report 2017.

Risk strategy and risk management

The Group Risik Strategy, together with the business strategy, defines the strategic risk management guidelines for the development of Commerzbank's investment portfolio. Furthermore, the risk appetite is set as the maximum risk that the Bank is prepared and able to accept while following its business objectives without exposing itself to existential threats over and above the risks inherent in the business. The guiding idea is to ensure that the Group holds sufficient liquidity and capital. Based on these requirements, suitable limits for the risk resources capital and liquidity reserve available to the Group are defined. The overarching limits of the Group Risik Strategy are consistent with the indicator thresholds of the recovery plan.

Banks' core functions as transformers of liquidity and risk result in inevitable threats that can in extreme cases endanger the continued existence of the institution. For Commerzbank, in view of its business model, these inherent existential threats include the default of Germany, Poland, one or more of the other major EU countries (France, Italy, Spain or the UK, although Brexit is not deemed to be a default) or the default of the USA. Italy has an idiosyncratic special position on account of the large legacy exposure to the Italian state, whereas in the case of the other countries the existential threat would result from the effects of a state default on the banks and companies and the the implications for the other EU countries. Others include a deep recession lasting several years with serious repercussions for the German economy, a bank run and the collapse of global clearing houses or the foreign exchange markets, possibly triggered by a cyber-attack. In general, cyber risk is an inherent, existential threat for Commerzbank in the context of increasing digitalisation in the business environment.

When pursuing its business targets, the Bank accepts these existential threats. It may be necessary to adjust the business model and hence the business and risk strategies in the medium and long term if the full Board of Managing Directors' assessment of these threats to Commerzbank changes substantially. To the extent that it is able to do so, Commerzbank makes early preparations in anticipation of forthcoming changes in regulatory requirements and accounting standards. Such changes and their (retrospective) interpretation may have lasting implications for – and even threaten the survival of – Commerzbank's business model. Commerzbank takes these "regulatory risks" into account because there are many cases where there is no option to mitigate or manage them.

The Group Risik Strategy covers all material risks to which Commerzbank is exposed. It is updated on an ad hoc basis if necessary, detailed further in the form of sub-risk strategies for the risk types which are material. These are then specified and made operational through policies, regulations and instructions/guidelines. By means of the risk inventory process – which has to be carried out beforehand – Commerzbank ensures that all risks of relevance to the Group are identified and their materiality is assessed. The assessment of the materiality of a risk is based on whether its occurrence could have a major direct or indirect impact on the Bank's risk-bearing capacity.

As part of the planning process, the Board of Managing Directors decides the extent to which the risk coverage potential of the Group should be utilised. On that basis, individual types of quantifiable risk contributing to the capital demand are limited in a second stage. A capital framework is allocated to the management-relevant units through the planning process. Compliance with limits and guidelines is monitored during the year, and management measures are put in place where required. In addition, further qualitative and quantitative early warning indicators are established in the Group Risik Strategy. Potential negative developments can be identified at an early stage with the help of these indicators.

One of the primary tasks of risk management is the avoidance of risk concentrations. These can arise from the synchronous movement of risk positions both within a single risk type (intra-risk concentrations) and across different risk types (inter-risk concentrations). The latter result from common risk drivers or from interactions between different risk drivers of different risk types.

By establishing adequate risk management and controlling processes, Commerzbank provides for the identification, assessment, management, monitoring and communication of material risks and related risk concentrations. This ensures that all Commerzbank-specific risk concentrations are adequately taken into account. Stress tests are regularly used to ensure transparency regarding risk concentrations. Management is regularly informed about the results of the analyses so that the potential risk of losses can be avoided in good time.

The Group Risk & Capital Monitor is the monthly, controlling-oriented risk report for capital, credit risk, market risk, liquidity and OpRisk related subjects of Commerzbank's risk management. It shows all the above risk types, including economic and regulatory risk-bearing capacity, for the Commerzbank Group. The report's aims include providing the full Board of Managing Directors and the Supervisory Board's Risk Committee with transparent and comprehensive information, highlighting important developments from a risk perspective and setting management measures. Particularly, limits and guidelines of the Group Risk Strategy are monitored by the report. The Group Risk Strategy and the Group Risk & Capital Monitor are approved by the full Board of Managing Directors.

Commerzbank has adopted a code of conduct that defines binding minimum standards for Commerzbank's corporate responsibility, its dealings with customers, business partners and colleagues, and its day-to-day business. It goes without saying that the Bank complies with relevant laws, regulatory requirements, industry standards and internal rules, and this therefore forms a particularly important part of its risk culture. It actively demands appropriate and courageous conduct and integrity of behaviour in compliance with rules, and any failure to comply with rules is penalised. Expansions of procedures ensure that misconduct is assessed in a standardised and fair manner and thus strengthen the management of consequences on a sustained basis.

The main pillar of the Bank's overall risk management and culture is the concept of "three lines of defence", which is a core element of the Corporate Charter. Under this three lines of defence principle, protecting against undesirable risks is an activity that is not restricted to the risk function. Each unit (segment or function) forms the first line of defence within its area of operational responsibility and is responsible for identifying and managing risks within it while complying with the prescribed risk standards and policies. For example, the front office forms the first line of defence in all business decisions and has to take risk aspects into account in reaching them. The second line of defence for each type of risk lays down standards for appropriate management of risks of that type, monitors this and ensures the application of such standards, and analyses and evaluates the risks. The risk function forms the second line of defence against credit and market risks associated with business decisions. Particularly for credit risk, this includes involvement in the credit decision process through means of a second vote. Units outside the risk function (e.g. Group Compliance and Group Finance) also operate as the second line of defence for certain risk types. The third line of defence is internal audit.

Under the provisions of the Remuneration Ordinance for Institutions (Institutsvergütungsverordnung), every year Commerzbank identifies, in a regular process, those employees whose actions have a material impact on Commerzbank's overall risk profile (risk takers). These risk takers are identified in accordance with regulatory requirements on the basis of their function within the organisation (including management level) and their function-related activities. Special regulations apply to risk takers as regards measuring their performance and the manner in which their variable remuneration is paid out. Information in relation to the remuneration system of Commerzbank Group according to Article 450 CRR can be found in the Remuneration Report within the Annual Report 2017 and in the separate Remuneration Report on the internet pages of Commerzbank.

Information on corporate governance according to Article 435 (2) CRR is provided in the Annual Report 2017 (Corporate Governance Report) and on the internet pages of Commerzbank.

Information on the indicators of global systemic importance according to Article 441 CRR is given in a separate disclosure on the internet pages of Commerzbank in the section Bondholder information/Transparency disclosures.

Risk-bearing capacity and stress testing

Risk-bearing capacity analysis is a key part of overall bank management and Commerzbank's ICAAP. The purpose is to ensure that sufficient capital is held at all times.

Commerzbank monitors risk-bearing capacity using a gone concern approach which seeks primarily to protect unsubordinated lenders. This objective should be achieved even in the event of extraordinarily high losses from an unlikely extreme event. The gone concern analysis is supplemented here by elements aimed at ensuring the institution's continuing existence (going concern perspective).

When determining the economically required capital, allowance is made for potential unexpected fluctuations in value. Where such fluctuations exceed forecasts, they must be covered by the available economic capital to absorb unexpected losses (economic risk coverage potential). The quantification of the economic risk coverage potential is based on a differentiated view of the accounting values of assets and liabilities and involves economic valuations of certain balance sheet items.

The capital requirement for the risks taken is quantified using the internal economic capital model. When assessing the economic capital required, allowance is made for all the types of risk at the Commerzbank Group that are classified as material and quantifiable in the annual risk inventory. The economic risk approach therefore also comprises risk types that are not included in the regulatory requirements for banks' capital adequacy. The model also reflects diversification effects incorporating all types of risk. The confidence level of 99.91% in the economic capital model is in line with the underlying gone concern assumptions and ensures the economic risk-bearing capacity concept is internally consistent. The quantifiable risks in the economic capital model can be divided into default risk, market risk, operational risk and – although not shown separately in table RBC1 below – business risk, property value change risk, investment portfolio risk, deposit model risk and reserve risk. Business risk is the risk of a potential loss resulting from discrepancies between actual income and expense and the respective budgeted figures. Business risk is considered as a deductible amount in risk coverage potential. Investment portfolio risk indicates the risk of an unexpected fall in the value of unlisted investments. Property value change risk is the risk of an unexpected fall in the value of owned property which is either already booked as an asset in the Group's balance sheet or which can be capitalised during the next twelve months by contractually assured obligations with option character (especially real estate). Deposit model risk is the risk arising from the deposit model used by Commerzbank and from modelling unscheduled repayment rights in commercial credit business. Reserve risk is the risk of additional charges being incurred on the portfolio of loans already in default through the creation of additional loan loss provisions. Allowance is made for this risk when considering risk-bearing capacity by means of a risk buffer. The results of the risk-bearing capacity analysis are shown using the risk-bearing capacity ratio (RBC ratio), indicating the excess of the risk coverage potential in relation to the economically required capital.

The risk-bearing capacity is monitored and managed monthly at Group level. Risk-bearing capacity is deemed to be assured as long as the RBC ratio is higher than 100%. In 2017, the RBC ratio was consistently above 100% and stood at 217% on 31 December 2017. The increase in the RBC ratio compared with December 2016 is mainly attributable to the decline in market risk due to lower market volatilities and to the active portfolio management of credit risks. The RBC ratio continues to be at a high level.

RBC1: Group's risk-bearing capacity

Risk-bearing capacity Group | €bn	31.12.2017	31.12.2016
Economic risk coverage potential[1]	**30**	**30**
Economically required capital[2]	**14**	**17**
thereof for credit risk	10	11
thereof for market risk[3]	3	5
thereof for operational risk	2	2
thereof diversification effects	–2	–2
RBC ratio[4]	**217%**	**178%**

[1] Including potential deductible amounts for business risk.
[2] Including property value change risk, risk of unlisted investments and reserve risk.
[3] From 2017, including deposit model risk.
[4] RBC ratio = economic risk coverage potential/economically required capital (including risk buffer).

The risk-bearing capacity and stress testing concept is subject to an annual internal review and is refined on an ongoing basis. The development of the regulatory environment is also taken into account. Commerzbank expects the European Central Bank (ECB) to publish revised ICAAP and ILAAP guidelines in 2018 and is checking whether this might require adjustments.

Commerzbank uses macroeconomic stress tests to review the risk-bearing capacity in the event of assumed adverse changes in the economic environment. The scenarios on which they are based take into account the interdependence in development between the real and financial economies and extend over a time horizon of at least two years. They are updated quarterly and approved by the Asset Liability Committee (ALCO). The scenarios describe an extraordinary but plausible adverse development in the economy, focusing in particular on portfolio priorities (e.g. export-based sectors in Germany) and business strategies of relevance to Commerzbank. The scenario simulation is run monthly at Group level using the input parameters of the economic capital requirements calculation for all material and quantifiable risk types. In addition to the capital required, the profit and loss calculation is also subjected to a stress test based on the macroeconomic scenarios. Based on this, changes in the risk coverage potential are simulated. Whereas the RBC ratio is embedded into Commerzbank's limit system, guidelines for risk-bearing capacity are set as an early warning system in the stressed environment. The ongoing monitoring of the limits and guidelines is a key part of internal reporting. Defined escalations are triggered if the limit is breached.

In addition to the regular stress tests, reverse stress tests are implemented annually at Group level. Unlike regular stress testing, the result of the simulation – a sustained threat to the Bank – is determined in advance. The aim of the analysis process in the reverse stress test is to improve the transparency of Bank-specific risk potential and interactions of risk by identifying and assessing extreme scenarios and events. On this basis, for instance, action areas in risk management including the regular stress tests can be identified and taken into account in the ongoing development efforts.

A. Credit risk (CR)

Credit risk (default risk from credit risk) (CR) is defined as the risk of losses sustained or profits foregone due to the default of a counterparty. It is a quantifiable material risk and includes the material sub-risk types of credit default risk, issuer risk, country and transfer risk, dilution risk and reserve risk. The default risk from counterparty risk is shown separately in the section on counterparty credit risk in this report.

Risk management

Strategy and organisation

The credit risk strategy is the sub-risk strategy for default risks and is derived from the group risik strategy. It is embedded in the ICAAP process of the Commerzbank Group and forms a link between the Bank's overall risk management across all risk types and the operationalisation of default risk management. The overriding aim is to ensure the adequate structural risk quality of the credit portfolio. To this end, the credit risk strategy defines the credit risk tolerance, specifies risk strategy priorities, provides an overview of the material credit risk management concepts and thereby plays an integral part in maintaining the Group's risk-bearing capacity. The credit risk strategy makes use of quantitative and qualitative management tools that give decision-makers clear guidance on both portfolio management and decisions in specific cases.

Credit risk management is a joint task of the front office and the risk function, based on a standardised Group-wide credit risk culture and with a focus on responsible actions. Impeccable moral and ethical conduct in compliance with the law and regulations is a key element of a culture of integrity and core to the credit risk culture. Default risks are assessed against uniform standards, regardless of segment limits. In line with the three lines of defence principle, the front office is the first line of defence and must take risk aspects into account when taking business decisions. The risk function is the second line of defence (back office and risk controlling), its fundamental task being to manage, limit and monitor risks. The third line of defence is internal audit. It is tasked with independently auditing the Bank's processes and safety precautions, and as such also assesses the activities of the first and second lines of defence.

The Group Credit Committee is the highest decision-making committee for operative credit risk management, comprising two representatives each from the back office and front office. It takes decisions in line with the competencies delegated to it by the full Board of Managing Directors and is responsible for managing all credit risks. In so doing, the Group Credit Committee operates on the basis of the valid credit risk strategy. Reporting to the Group Credit Committee are sub-credit committees, which operate on the basis of their respective rules of procedure and within the competencies approved by the full Board of Managing Directors. They comprise at least two representatives from the segments and two representatives from Group Risk Management. The sub-credit committees are generally in charge of managing all credit risks of the sub-portfolios they take responsibility for and are authorised to further delegate specific credit decisions in accordance with their competencies

Discrete back-office areas are responsible for operational credit risk management on a portfolio and an individual case basis. The responsibilities are separated between the performing loan area on the one hand and Intensive Care on the other. All credit decisions in the performing loan area are risk/return decisions. The front and back office take joint responsibility for risk and return from an exposure, with the front office having primary responsibility for the return, and the back office for the risk. Accordingly, neither office can be overruled in its primary responsibility in the lending process.

Higher-risk customers in the Corporate Clients and the Private and Small-Business Customers segments are handled by specialist Intensive Care areas. The customers are moved to these areas as soon as they meet defined criteria for assignment or mandatory transfer. The principal reasons for assignment to Intensive Care areas are criteria relating to number of days overdrawn, together with event-related criteria such as rating, third-party enforcement measures or credit fraud. Intensive Care decides on further action based on the circumstances of individual cases. Customers must be transferred to Intensive Care if they are in default (for example due to insolvency). This graduated approach ensures that higher-risk customers can continue to be managed promptly by specialists in a manner appropriate to the risks involved and in defined standardised processes.

In the ACR segment, by contrast, there is no separation of responsibilities between the performing loan area and Intensive Care. Credit risk management here has been merged into one unit across all rating classes.

The aim is to fully wind down all the assets grouped in this segment in a way that preserves value. To this end, EaD-based guidelines have been established and an asset management programme has been implemented. This is carried out through regular asset planning. The main aim here is to prioritise the winding down or reduction of those parts of the portfolio and individual loans for which the capital requirement is particularly high. Opportunities for selling sub-portfolios in a way that preserves value may also be used to free up capital as part of the systematic portfolio reduction. For business in Public Finance, the reduction is primarily through regular maturities of assets. Market opportunities that arise are used in a targeted way for the sale of individual assets.

Risk management

Commerzbank manages default risk using a comprehensive risk management system. The management framework comprises an organisational structure, methods and models, quantitative and qualitative management tools and regulations and processes. The risk management system ensures that the entire portfolio and the sub-portfolios, right down to individual exposure level, are managed consistently and thoroughly on a top-down basis.

The ratios and measures required for the operational process of risk management are based on the overarching Group objectives. The principle of maintaining a low-risk profile in all business decisions is closely combined here with the risk function's aim of providing the front office with appropriate support. The Bank's particular preference is for credit growth in granular business with good credit ratings. It also prefers business and products with low complexity and pays attention to the responsiveness of credit lines and exposures.

Quantitative credit risk strategy guidelines limit risks with regard to poorer credit ratings and exposures with high loss-at-default contributions (concentration management) and for selected sub-portfolios with a high risk weight or regulatory importance, and, as applicable, for individual products with a high portfolio weight. Detailed arrangements for operationalising the guidelines for selected sub-portfolios are set out in separate portfolio policies. In addition, qualitative management guidelines in the form of credit policies define the target business of the Bank. At the level of individual transactions, they regulate the transaction type with which the risk resources provided are to be used. These credit policies are firmly embedded in the credit process: transactions which do not meet the requirements are escalated through a fixed competence regulation.

Group-wide guidelines are based on risk-oriented analyses of trends (for instance, the changes in weaker credit ratings over time) combined with an assessment of overall conditions and internal rules. Risk-oriented portfolio analyses (e.g. the rating profile of individual asset classes) are used in particular to derive portfolio guidelines. Trend analyses of product-specific risk drivers (for example, the loan to value ratio in retail mortgage financing) are key factors for determining product guidelines. In contrast, credit and portfolio policies are primarily produced through a multi-level coordination process involving the product and portfolio managers from the front and back offices, combined with an assessment of internal and external information sources.

To monitor compliance with credit risk strategy rules, continuous monitoring and reporting has also been set up at whole Group level and at segment or sub-portfolio level. Asset quality reviews by the risk function make an important contribution here to quality assurance and early risk detection. The key aspects of monitoring vary according to the subject matter and target audience, and ad-hoc reporting processes are in place. In addition, crisis events may pose a risk to the adequacy of the Bank's capital and liquidity resources and thereby to its risk-bearing capacity. In a crisis, the Risk Mitigation Task Force will manage decisions flexibly in a coordinated, Group-wide process. As part of the process, emergency action plans ensure that risk-mitigation measures are implemented quickly and efficiently.

The avoidance of risk concentrations is a core strategy of risk management. Risk concentrations are actively managed in order to identify at an early stage and contain the increased potential for loss in the synchronous movement of risk positions. In addition to exposure-related credit risk concentrations (bulk risks), credit risk management also considers country and sector concentrations. Segment-specific features are taken into account here.

A uniform definition based on "all-in" is used to manage bulk risk. The all-in concept comprises all customer credit lines approved by the Bank in their full amount – irrespective of the loan utilisation to date.

Management and the Supervisory Board's Risk Committee are regularly informed about the results of the analyses.

Management of economic capital commitment

Economic capital commitment is managed in order to ensure that the Commerzbank Group holds sufficient capital. To this end, in the Group Risik Strategy all risk types relevant for economic risk capital are given limits on a Group-wide basis, with, in particular, a CVaR limit being specified. Due to the systematically restricted options for reducing default risk on a short-term basis, it is important to take account of expected trends (medium-term and long-term) in order to manage credit risk. For this reason, forecast values of credit risk parameters play a key role in ongoing management. At segment and business area level, changes of forecasts are monitored and adjustments made when necessary. There is no cascaded capital limit concept for credit risk below Group level.

Country risk management

The Group's country risk calculation records both transfer risks and event risks defined by political and economic events which impact on the individual economic entities of a country. Country risks are managed on the basis of defined credit risk and transfer risk limits at country level. Country exposures which are significant for Commerzbank due to their size, and exposures in countries in which Commerzbank holds significant investments in comparison to the GDP of those countries, are handled by the Strategic Risk Committee on a separate basis.

The regional breakdown of the exposure corresponds to the Bank's strategic direction and reflects the main areas of its global business activities.

Overview of management instruments and levels

Risk strategies and policies	Limit and guideline systems	Portfolio monitoring and reporting	Structures of organisation and committees
Group			
Overall risk strategy plus sub-risk strategies for significant risk types Establishment of a general risk understanding and creation of a uniform risk culture	Definition of Group limits (across all risk types) for capital and liquidity management Additional definition of guidelines as key points of the aspired target portfolio	Group Risk & Capital Monitor plus risk type specific Group formats (including flash reporting) Uniform, consolidated data repository as basis for Group reporting	Ensuring exchange of information and networking in committees that operate across all risk types Retaining qualified staff in line with progressive product innovation or regulatory adjustments
Sub-portfolios			
Clear formulation of risk policy in guidelines (portfolios, asset classes, etc.) Differenciated credit authorities based on compliance of transactions with the Bank's risk policy	Performance metrics on level of risk categories and sub-portfolios Expansion of Group-wide performance metrics using sub-portfolio-specific indicators	Portfolio batches as per established portfolio calendar Asset quality review and analysis of High Attention Parts (HAP) Trigger monitoring with clear escalation and reporting lines	Interdisciplinary composition of segment committees Ensuring uniform economic opinions
Individual exposures			
Rating-dependent and bulk-sensitive credit authority regulations with clear escalation processes	Limitation of bulk risk and uniform management according to model-independent all-in definition	Limit monitoring at individual exposure level Monthly report to the Board of Managing Directors on the development of bulk risks Review of individual customers/exposures resulting from asset quality review or HAP analyses	Deal team structures Institutionalized exchange within the risk function, also taking account of economic developments Sector-wise organization of domestic corporate business

Credit risk model

The quantification of default risks takes place through implementation of a Group-wide credit risk model in combination with internally developed rating systems. The risk parameters probability of default (PD), exposure at default (EaD[1]) and loss given default (LGD) are determined for every credit risk position. This enables the relevant expected loss to be calculated for each individual position.

The credit risk model also produces probability statements on losses from credit defaults and rating changes at portfolio level. Unexpected loss (credit value at risk – CVaR) is quantified on a risk horizon of one year in the CvaR model. The model measures the extent of potential credit risk losses over and above the expected loss and must be backed by equity capital.

Commerzbank's CVaR model is an in-house model which, as with the CreditMetrics or Moody's KMV model, is based on the asset value approach. A Monte Carlo simulation simulates potential realisations of borrowers' assets and changes to borrowers' creditworthiness and defaults. Possible future losses at portfolio level are calculated and statistically analysed on this basis.

The CVaR model firstly requires transaction and customer data: level of exposure, creditworthiness, expected loss given default, country and sector classification.

Dependencies between possible default events are also modelled through around 60 systematic risk factors. Specific model parameters (correlations) measure the connection of individual borrowers to these system factors and the correlation between system factors. This way they quantify potential diversification effects between different sectors and countries.

Commerzbank's credit risk model thus constitutes the basis for the calculation of risk-weighted assets according to the IRB approach and is also a key part of the internal risk and capital management process of the Group portfolio.

Rating architecture

A key component of Commerzbank's rating architecture is the use of single point of methodology rating procedures, taking advantage of a central suite of computation kernels. This uniform process architecture not only facilitates risk management and monitoring but also lowers the risk of rating arbitrage within the Commerzbank Group. The rating processes are in turn embedded in rating systems. In addition to the conventional methods of assessing creditworthiness and risk, these comprise all the processes for preparing data, calculating ratings and implementing monitoring and management measures.

The use of rating processes is an essential component of risk assessment in the Commerzbank Group, irrespective of regulatory requirements. The resulting ratings are then used in front and back office credit decision-making processes, the determination of loan loss provisions under IFRS and internal measurement of CVaR and risk-bearing capacity, respectively. Rating processes which have already been approved are also further revised and improved. These improvements make risk forecasts more accurate and improve management mechanisms.

The tables below show the rating processes used in the IRBA in the individual asset classes according to the CRR and their main elements as at the reporting date. Further models are in use at mBank. Details are given in the mBank disclosure report on their English internet page ("About mbank" → "Capital Adequacy Information Policy").

[1] Economic EaD: Exposure at default amount taking into account a potential (partial) drawing of open lines and contingent liabilities that will adversely affect risk-bearing capacity in the event of default.

VAL-A: Material IRBA rating procedures by asset class

Exposure class	Name of the material rating procedures
Central governments or central banks	RFI-BANK, R-SCR, R-LRG
Institutions	RFI-BANK, R-LRG, NBFI
Corparates - SMEs	R-CORP/COSCO
Corporates - specialised lending	RS-CRE, IAA, RS-CFD, RS-SHP, RS-REN
Corporates - other	R-CORP/COSCO, NBFI
Retail - secured by mortgages / SMEs	R-CORP/COSCO, CORES, RS-CRE
Retail - secured by mortgages / non-SMEs	CORES
Retail - qualifying revolving	CORES
Retail - other / SMEs	R-CORP/COSCO
Retail - other / non-SMEs	CORES

VAL-B: Core components of IRBA rating procedures

Scope	Procedure	Hard facts	Soft facts	Overruling
Banks	RFI-BANK	▪	▪	▪
Countries	R-SCR	▪	▪	▪
Municipalities/federal states	R-LRG	▪		▪
Corporate customers	R-CORP/COSCO	▪	▪	▪
Financial Institutions (NBFI)	NBFI	▪	▪	▪
Private customers	CORES	▪		
Commercial real estate	RS-CRE	▪	▪	▪
Renewable energies	RS-REN	▪	▪	▪
Structured finance	RS-CFD	▪	▪	▪
Ship financing	RS-SHP	▪	▪	▪
ABS transactions (sponsors)	IAA	▪	▪	

Hard facts refer to system-based factors which are used in the rating process and allow no scope for interpretation. For instance, these may be data from companies' annual financial statements, the income of a private individual, or the age of the documents being used.

Soft facts refer to structured areas of analysis where the rating analyst needs to make an assessment and where there is therefore scope for discretion on a case-by-case basis. Examples include an assessment of management or the product quality of the customer being rated.

Overruling is a downstream area of analysis where there is a further opportunity for the analyst to assess circumstances separately based on his or her personal judgement. The system result can be adjusted upwards or downwards. The relevant reason for the decision is documented. Overruling should particularly be used when there are strongly fluctuating developments (e.g. market changes) such that an adequate assessment of a company's situation based on the analysis of statistical information (e.g. annual financial statements) is not sufficient to give a future-oriented probability of default. Due to the degree of freedom this gives the rating process, overruling is subject to strict standards and regular monitoring.

The Commerzbank rating method comprises 25 rating classes for customers not in default (1.0 to 5.8) and five default classes (6.1 to 6.5). The Commerzbank master scale allocates a non-overlapping range of probabilities of default that are stable over time to each rating class. The rating methods are validated and recalibrated annually so that they reflect the latest projection based on all actual observed defaults. The default ranges assigned to the ratings are the same for all portfolios. This ensures internal comparability consistent with the master scale method. For the purpose of guidance, the Commerzbank master scale also shows external ratings as well as credit quality steps in accordance with Article 136 CRR. However, a direct reconciliation is not possible, because external ratings of different portfolios show fluctuating default rates from year to year.

The credit approval authorities of both individual staff and the committees (Board of Managing Directors, credit committee, credit sub-committees) are graduated by a range of factors including size of exposure and rating class.

Commerzbank master scale

Commerzbank AG rating	PD and EL mid-point %	PD and EL range %	S&P scale		Credit quality steps in accordance with Article 136 CRR[1]	
1.0	0	0	AAA	AAA	I	Investment grade
1.2	0.01	0–0.02				
1.4	0.02	0.02–0.03	AA+	AA		
1.6	0.04	0.03–0.05	AA, AA–		II	
1.8	0.07	0.05–0.08	A+, A	A		
2.0	0.11	0.08–0.13	A–			
2.2	0.17	0.13–0.21	BBB+	BBB	III	
2.4	0.26	0.21–0.31	BBB			
2.6	0.39	0.31–0.47				
2.8	0.57	0.47–0.68	BBB–			
3.0	0.81	0.68–0.96	BB+	BB	IV	Sub-investment grade
3.2	1.14	0.96–1.34	BB			
3.4	1.56	1.34–1.81				
3.6	2.10	1.81–2.40	BB–			
3.8	2.74	2.40–3.10				
4.0	3.50	3.10–3.90	B+	B	V	Non-investment grade
4.2	4.35	3.90–4.86	B			
4.4	5.42	4.86–6.04				
4.6	6.74	6.04–7.52				
4.8	8.39	7.52–9.35	B–			
5.0	10.43	9.35–11.64				
5.2	12.98	11.64–14.48	CCC+, CCC, CCC–, CC, C	CCC, CC, C	VI	
5.4	16.15	14.48–18.01				
5.6	20.09	18.01–22.41				
5.8	47.34	22.41–99.99				
6.1	100	>90 days past due	D			Default
6.2		Imminent insolvency				
6.3		Restructuring with recapitalisation				
6.4		Termination without insolvency				
6.5		Insolvency				

[1] CRR = Capital Requirements Regulation (EU) No 575/2013.

As at 31 December 2017, Commerzbank AG has an IRBA coverage ratio at Group level of 97.6% for IRBA exposure values and 92.3% for risk-weighted IRBA exposure values, exceeding the IRBA exit threshold of 92% under section 10 of the Solvency Regulation (in the version applicable as at 1 January 2014). For loans and receivables that are not covered by the procedures approved by the supervisory authorities for the IRB approach, the standardised approach for credit risk (SACR) applies, under which flat risk weightings are to be used or risk weightings are to be based on external assessments of the borrower's creditworthiness.

Risk parameters

In addition to classifying the probability of default (PD) within the scope of the rating process, correctly assessing loss severity is essential for a reliable and holistic risk assessment. The loss severity is determined firstly by the exposure at default (EaD) and secondly by the loss given default (LGD).

In general, modelling the probabilities of default is based on the Bank's internal long-standing empirical default data. Should this data not be sufficient for specific portfolios (low-default portfolios), different approaches are used to model the probabilities of default. Shadow rating procedures are one option. Comparing the Bank's internal risk factors with the ratings of external agencies gives indications of how the Bank's credit rating estimates should be classified in relative terms. The shadow rating procedures are calibrated on the basis of empirical default rates over many years for the rating classes used by external rating agencies. In rating procedures for special funding, the customer's credit rating derives principally from the cash flows generated by the rating object. Typically, the rating procedures are therefore based on cash flow simulations using stochastic processes. The procedures are normally used in low default or low number portfolios for which only very few external benchmarks exist. The models are therefore causally produced and often calibrated using expert knowledge. Wholly expert-based rating procedures are the final option. No external target criterion is available for these procedures and there are no cash flow simulations. Parameterisation of the models and their calibration are based wholly on expert knowledge.

When forecasting EaD unused credit lines and other contingent liabilities are included via credit conversion factors (CCFs). Depending on the transaction and the customer, the CCFs describe the probability of drawdown in the event of a default within the next twelve months.

The LGD is primarily determined by the expected proceeds from collateral and unsecured portions of loans. Proceeds from collateral are modelled via recovery rates representing a discount on the previously defined market value. The recovery rate depends on the characteristics of the collateral. For instance, when modelling for properties, the collateral is differentiated by property type and location. To determine the proceeds on unsecured portions of loans, the focus is primarily on the characteristics of the customer and the transaction.

The CCF and LGD models are based on bank-internal empirical loss data. For this purpose, Commerzbank refers to a database of internal credit defaults since 1997. New defaults are recorded continuously and are made available for statistical analysis once processing is complete. For quality assurance purposes, the data collection process is monitored by a number of controls and automatic checking procedures.

Both the internal and regulatory requirements of the CRR are taken into account when developing statistical models for estimating EaD and LGD. Discussions with experts from back office and debt workout departments play an important role when identifying relevant factors and validating the results. In instances where there is only a small number of historical default or collateral utilisation cases, the empirical analyses are supplemented with expert assessments.

It is possible that a positive correlation of the risk parameters PD, LGD and CCF with one or more common macroeconomic risk factors may lead to a heightened systematic credit risk. It is for this reason that CRR Art. 181 (1) b) requires the use of LGD estimates that are appropriate even in an economic downturn (so-called downturn LGDs). Periods of an economic downturn are characterised by systemically high default rates above the long-term average. In downturn analyses, downturn years were determined and/or confirmed to estimate the risk parameters (CCF and LGD components). Statistical models, particularly regression models, are used to examine whether the downturn phases identified have a significant impact on the loss ratios; if applicable, an appropriate discount is determined.

All of the models are regularly validated and recalibrated on the basis of the new findings, if necessary. Empirically-based PD, LGD and EaD parameters are used in all important internal processes at Commerzbank. The PD, LGD and EaD models employed by Commerzbank are approved for the advanced IRB approach for the asset classes listed in CRR Art. 452(c) i) to iv). The suitability of the models was verified by the Bundesbank, BaFin and the ECB as part of the inspection prior to the granting of authorisation for the advanced IRB approach and ex post reviews.

Finally, combining the above components yields an assessment of the expected loss (EL = EaD*PD*LGD) and the risk density as a ratio of EL to EaD (EL to EaD in basis points). The internal master scale is used to clearly allocate borrower PDs (customer ratings) and loan commitment risk densities (credit ratings) to the Bank's internal rating classes.

Validation

Pursuant to Article 185 CRR, all risk classification procedures are subject to a regular validation and calibration of parameters. The credit risk control unit is the relevant unit for model development and parameter calibration. The relevant models are validated at least once a year and the results recorded in validation reports. Responsibility for this lies with the independent validation unit. Independence is ensured through different reporting lines to the senior management level. Due to the specific skill profiles of employees, validation of the IAA rating methods for conduits is performed by a separate risk controlling unit with responsibility for validation. In this case, independence is ensured by staffing the development and validation activities separately.

All validation results together with the need for action resulting from them are presented for approval to a validation committee in which senior management is represented. A summary of the validation committee's results as well as any irregularities and necessary changes are presented to the Bank's Strategic Risk Committee; approval is required if there are any red validation traffic lights. Regular monitoring of procedures is an additional system control element. To check the quality of the rating procedures, specialist personnel within Internal Audit regularly review the methods and processes used and inspect validation and monitoring methods. In the event of changes to the rating systems in accordance with CRR Article 143, an independent formal investigation is carried out to establish whether the relevant quantitative and qualitative criteria were taken into account during categorisation, together with the resulting categorisation.

Validation concepts are defining which analyses have to be carried out rotationally for the rating systems as well as for EaD and LGD models. The material analysis results are grouped and evaluated using a traffic-light system. If the standards and limits that have been defined in the validation concept are not met, it has to be clarified, if there is a need for action. In this case, concrete steps must be defined along with a timetable for implementing them. These steps may include, for instance, measures to improve data quality or a revision of the process in question.

Generally a distinction is to be made between the method validation and the process validation of the models. Data quality aspects and statistical analyses are of specific interest for the method validation. This involves comparing the model forecasts with the reality over the course of the assessment period. The quality of the forecasts is verified using mathematical/statistical methods. Assessing the discriminatory power of rating procedures may involve using Gini coefficients, concordance indices and hit rate analyses, for instance. The calibration of procedures may be checked using various statistical tests, such as the Spiegelhalter or binomial test. Validation and model development do not take into account any regulatory floors for PD. These are only taken into account during the regulatory capital calculation to determine RWA.

Depending on the type of model a different validation procedure to back-test each single model has to be applied, as described in the following:

- **Default/non-default rating procedure:** In default/non-default models, ratio selection, parameter estimates and calibration are mainly based on internal default periods. A check is therefore made during validation to ascertain whether the internally measured default rates tally with the predicted probabilities of default. Discriminatory power is also checked by calculating the AUC value, and the Gini coefficient respectively.
- **Shadow rating procedure**: The classic back-testing methods used for default/non-default models cannot normally be applied to portfolios with very few defaults. Consequently, back-testing in shadow rating procedures relies very heavily on comparisons with external ratings. Comparing the Bank's internal ratings with those of external agencies (Standard & Poor's, Moody's and FitchRatings) gives indications of how the Bank's credit rating estimates should be classified in relative terms. For this benchmarking, contingency tables, for example, are produced, deviations analysed and the Spearman correlation coefficient calculated. A benchmarking analysis is naturally only useful or possible if a large number of external ratings are available. If this is not the case, pseudo discriminatory power values, for example, can be calculated using either external or final internal ratings.
- **Hybrid models:** Hybrid models are basically mixtures of default/non–default models and shadow rating procedures. In some low-default portfolios, an internal data history has had time to develop. While this alone is not sufficient to develop a default/non-default model and corresponding validation, the available data history is yet being incorporated for validation or development purposes. The validation techniques of default/non-default models and shadow rating procedures are combined in these procedures.
- **Cash flow-based procedures**: In rating procedures for special funding, the customer's credit rating derives principally from the cash flows generated by the rating object. Typically, the rating procedures are therefore based on cash flow simulations using stochastic processes. The procedures are normally used in low default and low number respectively portfolios for which only very few external benchmarks exist. The models are therefore causally produced and often calibrated using expert

knowledge. Direct comparisons of the predicted PDs with realised default rates and discriminatory power analyses using the AUC are not normally very meaningful due to the low number of defaults. The statistical testing of EaD and LGD predictions of these models are likewise difficult. Key elements of the validation of these procedures are descriptive analyses of the input data and comparisons of the cash flows and volatilities predicted by the users with actual cash flows.

- **Wholly expert-based PD procedures**: No external target criterion is available for these procedures and there are no cash flow simulations. Calibration is based wholly on expert knowledge. Validation is therefore very heavily reliant on expert know-how, as is the development. For the validation, the results produced by the procedure in particular are compared with the expert opinion, e.g. by evaluating the overruling pattern.
- **EaD and LGD models**: On the basis of additional default and loss data full-sample and out-of-sample tests are carried out through statistical backtests. In this context the validity of existing parameter differentiations and the discriminatory power of the applied risk factors have always to be analysed. Data quality and the representativeness of observations for future loss events are also important subjects of analyses.

The following table gives an overview of the quantitative validation procedures used for the individual rating procedures. The scope of application of the rating procedures is presented in the section on rating architecture in tables VAL-A and VAL-B.

VAL1: Validation of IRBA rating procedures of Commerzbank AG

	PD validation		EaD / LGD validation	
Rating procedure	**Methodology**	**Data history** Years	**Methodology**	**Data history** Years
RFI-BANK	Shadowrating, Default/non-default	5	Calibrated empirically	18
R-SCR	Shadowrating	5	Calibrated empirically	18
R-LRG	Shadowrating	11	Expert-based	–
R-CORP/COSCO	Shadowrating, Default/non-default	5	Calibrated empirically	18
NBFI	Expert-based, Shadowrating	5	Expert-based	–
CORES	Default/non-default	5	Calibrated empirically	18
RS-CRE	Default/non-default, Shadowrating	5	Calibrated empirically	10
RS-CFD	Cash flow simulation	5	Cash flow simulation	10
RS-REN	Cash flow simulation	5	Cash flow simulation	10
RS-SHP	Cash flow simulation	5	Cash flow simulation	13
ABS IAA	IAA-methods[1]	–	IAA-methods[1]	–

[1] For internal classification procedure for securities see page 76.

Process validation is carried out in collaboration with the risk model users. This includes compliance of the procedures with regulations, overruling analyses and general user acceptance. For EaD and LGD procedures the precise technical implementation of parameters in all using systems has to be verified. Asset Quality Reviews established in credit risk management also guarantee a continuously reliable data quality and the implementation of the model true to the process. Monthly reporting of rating coverage to the Board of Managing Directors ensures that the portfolios are valued using up-to-date and valid rating analyses.

Internal validation is performed on the economic scope of application. The validations performed so far on the basis of the data basis for 2017 show largely unremarkable findings. The validation results for all separately calibrated IRBA parameters and/or submodels are summarised in the tables below and broken down by PD, LGD and EaD method. This shows the cases in which the tolerance limits set by the corresponding validation concepts were exceeded, as a result of which adjustments are recommended. In the PD range, conservative recalibration of a small score combination in R-CORP/COSCO as measured against the overall EaD is recommended. Of the changes recommended from the previous validation cycle of 2016, one adjustment took effect in R-CORP/COSCO during 2017, resulting in a more conservative assessment within the asset class "Corporates – thereof SMEs". In addition, for RFI-BANK the financial analysis calibration has been updated. The current validations also resulted in marked adjustments to the LGD parameters for commercial real estate finance and to the conversion factors, particularly for corporate clients. Adjustments were also required in some estimation groups for the EaD models as part of the validation on account of open cases being taken into account in full and of minor methodological adjustments to the weighting of cases. The LGD validations carried out in 2017 showed a need for some individual adjustments.

VAL2: Validation results

	PD		LGD		EaD	
Validation	**Number**	**EaD** in %	**Number**	**EaD** in %	**Number**	**EaD** in %
Adequate	44	100	308	93	25	80
Too conservative - adjustment recommended	1	<1	8	6	0	0
Too progressive - adjustment recommended	0	0	2	1	7	20
Total	**45**	**100**	**318**	**100**	**32**	**100**

In addition to model adjustments initiated by validation, further model changes are made on a regular basis. In particular, in 2017 LGD floors for private and corporate clients and the LGD model for public finance were adjusted.

An overview of the PD validation results as at 31 December 2016 for the relevant rating systems by IRBA asset class is provided in table EU CR9; the two changes mentioned above for 2017 do not as yet affect this calculation. Around 92% of the Commerzbank Group's total IRBA RWA are accounted for by the rating procedures in table VAL1. The remainder largely result from retail and corporate rating methods run independently by mbank, whose results can be found in the disclosure report of mbank on the bank's English-language homepage (at About mbank → Capital Adequacy Information Policy).

It is striking to note that the default rates are almost all below the intended PD bands. This is primarily due to the sustained positive economic climate in Germany, with historically low default rates in the high-default-rating methods over the past few years. The calibration method for shadow rating procedures and expert-based rating processes has also had an effect. Here the target criterion is the external rating and/or expert assessments, which in some cases substantially exceed the historical default rates in these low-default portfolios. In the case of external ratings, the rating agencies also use default rates over many years. Accordingly, in all asset classes with a significant contribution from low-default rating procedures such as those found in table VAL-A, the internal classification is a conservative one.

EU CR9: IRB approach – Backtesting of PD per exposure class

a	b	c	d	e	f		g	h	i
	PD range	External rating equivalent	Weighted average PD	Atrithmetic average PD by obligors	Number of obligors		Defaulted obligors in the year	Of which new obligors	Average historical annual default rate
					End of previous year	End of the year			
Central governments or central banks	0.00 to < 0.15	AAA to A-	0.01	0.05	57	146	0	0	0.00
	0.15 to < 0.25	BBB+	0.22	0.20	9	6	0	0	0.00
	0.25 to < 0.50	BBB, BBB-	0.38	0.38	7	13	0	0	0.00
	0.50 to < 0.75	BB+	0.74	0.63	8	4	0	0	0.00
	0.75 to < 2.50	BB to B+	1.23	1.50	11	10	0	0	0.00
	2.50 to 10.00	B to CCC+	5.44	5.65	16	19	0	0	2.94
	10.00 to < 100.00	CCC to C	23.25	20.85	17	13	1	0	1.18
	Subtotal		0.57	1.94	125	211	1	0	n/a
Institutions	0.00 to < 0.15	AAA to A-	0.05	0.07	534	497	0	0	0.00
	0.15 to < 0.25	BBB+	0.20	0.19	195	171	0	0	0.00
	0.25 to < 0.50	BBB, BBB-	0.39	0.37	323	300	0	0	0.00
	0.50 to < 0.75	BB+	0.56	0.60	140	152	0	0	0.30
	0.75 to < 2.50	BB to B+	1.15	1.39	408	381	1	0	0.46
	2.50 to 10.00	B to CCC+	4.69	4.58	403	306	2	0	0.68
	10.00 to < 100.00	CCC to C	21.72	37.36	89	49	2	0	1.94
	Subtotal		0.90	2.17	2,092	1,856	5	0	n/a
Corporates TOTAL	0.00 to < 0.15	AAA to A-	0.07	0.09	5,465	5,322	9	1	n/a
	0.15 to < 0.25	BBB+	0.20	0.20	4,130	4,327	6	0	n/a
	0.25 to < 0.50	BBB, BBB-	0.36	0.36	5,625	5,507	12	1	n/a
	0.50 to < 0.75	BB+	0.60	0.61	2,480	2,576	20	2	n/a
	0.75 to < 2.50	BB to B+	1.37	1.31	5,273	4,951	55	2	n/a
	2.50 to 10.00	B to CCC+	4.71	4.69	2,092	1,754	96	8	n/a
	10.00 to < 100.00	CCC to C	40.65	30.89	581	528	133	12	n/a
	Subtotal		1.68	1.44	25,646	24,965	331	26	n/a
Corporates, thereof SMEs	0.00 to < 0.15	AAA to A-	0.09	0.09	588	416	0	0	0.07
	0.15 to < 0.25	BBB+	0.19	0.20	462	484	1	0	0.20
	0.25 to < 0.50	BBB, BBB-	0.37	0.36	614	589	1	0	0.31
	0.50 to < 0.75	BB+	0.61	0.62	367	334	2	1	0.51
	0.75 to < 2.50	BB to B+	1.32	1.33	825	803	12	0	1.15
	2.50 to 10.00	B to CCC+	4.71	4.84	430	402	20	0	4.92
	10.00 to < 100.00	CCC to C	23.99	20.67	93	98	28	0	22.73
	Subtotal		1.54	1.79	3,379	3,126	64	1	n/a
Corporates, thereof specialised lending	0.00 to < 0.15	AAA to A-	0.04	0.04	720	636	3	1	0.33
	0.15 to < 0.25	BBB+	0.19	0.21	164	161	0	0	0.19
	0.25 to < 0.50	BBB, BBB-	0.36	0.37	377	379	1	0	1.10
	0.50 to < 0.75	BB+	0.61	0.60	214	228	1	0	1.25
	0.75 to < 2.50	BB to B+	1.48	1.40	409	291	8	0	2.19
	2.50 to 10.00	B to CCC+	4.83	5.03	330	160	25	5	3.99
	10.00 to < 100.00	CCC to C	44.27	41.83	268	230	65	9	15.39
	Subtotal		5.38	5.36	2,482	2,085	103	15	n/a
Corporates, thereof other	0.00 to < 0.15	AAA to A-	0.09	0.09	4,157	4,270	6	0	0.13
	0.15 to < 0.25	BBB+	0.20	0.20	3,504	3,682	5	0	0.17
	0.25 to < 0.50	BBB, BBB-	0.36	0.36	4,634	4,539	10	1	0.22
	0.50 to < 0.75	BB+	0.60	0.61	1,899	2,014	17	1	0.51
	0.75 to < 2.50	BB to B+	1.34	1.30	4,039	3,857	35	2	1.35
	2.50 to 10.00	B to CCC+	4.55	4.60	1,332	1,192	51	3	4.39
	10.00 to < 100.00	CCC to C	21.44	23.33	220	200	40	3	12.82
	Subtotal		0.62	0.97	19,785	19,754	164	10	n/a

EU CR9_Forts.: IRB approach – Backtesting of PD per exposure class

a	b	c	d	e	f		g	h	i
	PD range	External rating equivalent	Weighted average PD	Atrithmetic average PD by obligors	Number of obligors		Defaulted obligors in the year	Of which new obligors	Average historical annual default rate
					End of previous year	End of the year			
Retail TOTAL	0.00 to < 0.15	AAA to A-	0.05	0.04	1,836,949	1,861,954	1,018	11	n/a
	0.15 to < 0.25	BBB+	0.20	0.19	252,635	267,916	467	7	n/a
	0.25 to < 0.50	BBB, BBB-	0.36	0.36	267,553	283,573	987	16	n/a
	0.50 to < 0.75	BB+	0.60	0.62	130,581	133,459	818	19	n/a
	0.75 to < 2.50	BB to B+	1.29	1.34	273,278	307,563	3,583	123	n/a
	2.50 to 10.00	B to CCC+	4.69	5.24	123,019	130,407	6,051	345	n/a
	10.00 to < 100.00	CCC to C	20.98	21.16	52,531	56,191	8,093	1,658	n/a
	Subtotal		0.68	0.85	2,936,546	3,041,063	21,017	2,179	n/a
… thereof secured by mortgages / SMEs	0.00 to < 0.15	AAA to A-	0.11	0.11	297	292	0	0	0.01
	0.15 to < 0.25	BBB+	0.20	0.20	228	205	1	0	0.14
	0.25 to < 0.50	BBB, BBB-	0.36	0.37	524	457	1	0	0.12
	0.50 to < 0.75	BB+	0.63	0.62	168	150	0	0	0.44
	0.75 to < 2.50	BB to B+	1.13	1.11	309	263	2	0	0.26
	2.50 to 10.00	B to CCC+	4.44	5.18	105	91	4	0	2.43
	10.00 to < 100.00	CCC to C	14.99	18.90	28	17	6	0	8.71
	Subtotal		0.76	0.96	1,659	1,475	14	0	n/a
… thereof secured by mortgages / non-SMEs	0.00 to < 0.15	AAA to A-	0.05	0.06	203,937	215,629	138	2	0.06
	0.15 to < 0.25	BBB+	0.20	0.19	104,995	103,687	131	1	0.11
	0.25 to < 0.50	BBB, BBB-	0.36	0.35	84,945	88,703	157	0	0.15
	0.50 to < 0.75	BB+	0.60	0.60	24,425	26,528	54	0	0.25
	0.75 to < 2.50	BB to B+	1.27	1.28	23,836	24,065	198	0	0.66
	2.50 to 10.00	B to CCC+	5.03	5.17	9,826	8,666	308	3	2.69
	10.00 to < 100.00	CCC to C	20.83	20.98	4,667	4,318	632	16	12.28
	Subtotal		0.55	0.52	456,631	471,596	1,618	22	n/a
… thereof qualifying revolving	0.00 to < 0.15	AAA to A-	0.03	0.03	1,401,883	1,414,911	726	5	0.02
	0.15 to < 0.25	BBB+	0.19	0.19	87,586	102,418	217	2	0.11
	0.25 to < 0.50	BBB, BBB-	0.36	0.36	111,178	120,646	582	7	0.21
	0.50 to < 0.75	BB+	0.62	0.62	60,272	63,607	502	2	0.34
	0.75 to < 2.50	BB to B+	1.37	1.37	120,339	147,828	2,016	42	0.74
	2.50 to 10.00	B to CCC+	4.84	4.77	54,060	65,211	3,239	79	2.85
	10.00 to < 100.00	CCC to C	17.69	17.63	11,843	17,978	2,373	231	10.77
	Subtotal		0.30	0.51	1,847,161	1,932,599	9,655	368	n/a
… thereof other / SMEs	0.00 to < 0.15	AAA to A-	0.09	0.11	7,403	8,065	10	1	0.12
	0.15 to < 0.25	BBB+	0.20	0.19	13,793	14,354	26	0	0.14
	0.25 to < 0.50	BBB, BBB-	0.37	0.37	11,223	10,998	34	1	0.23
	0.50 to < 0.75	BB+	0.62	0.62	4,816	4,451	28	1	0.40
	0.75 to < 2.50	BB to B+	1.31	1.31	13,598	12,603	144	4	0.86
	2.50 to 10.00	B to CCC+	4.98	5.55	12,349	10,735	426	50	2.55
	10.00 to < 100.00	CCC to C	18.97	16.46	2,936	2,503	307	50	8.02
	Subtotal		1.84	2.00	66,118	63,709	975	107	n/a
… thereof other / non-SMEs	0.00 to < 0.15	AAA to A-	0.06	0.05	223,429	223,057	144	3	0.05
	0.15 to < 0.25	BBB+	0.20	0.20	46,033	47,252	92	4	0.15
	0.25 to < 0.50	BBB, BBB-	0.36	0.36	59,683	62,769	213	8	0.25
	0.50 to < 0.75	BB+	0.60	0.63	40,900	38,723	234	16	0.42
	0.75 to < 2.50	BB to B+	1.30	1.32	115,196	122,804	1,223	77	0.99
	2.50 to 10.00	B to CCC+	3.97	5.83	46,679	45,704	2,074	213	3.65
	10.00 to < 100.00	CCC to C	24.31	23.59	33,057	31,375	4,775	1,361	11.77
	Subtotal		0.78	2.16	564,977	571,684	8,755	1,682	n/a

Credit risk mitigation

At Commerzbank, risks are mitigated via a range of measures including collateral and netting.

The collateral mainly takes the form of mortgages on owner-occupied and rented residential properties, mortgages on commercial properties, financial collateral as well as guarantees and indemnity letters. The ship finance portfolio is mostly backed by ship mortgages.

Within the scope of IRBA assessments, processes for offsetting collateral instruments were recognised; in particular this includes land charges, financial collateral, guarantees, indemnity letters, credit derivatives, life insurances, mortgage liens in the land register and other real collateral.

In the IRBA, the Bank takes account of credit risk mitigating effects arising from the receipt of eligible guarantees (guarantees/sureties, comparable claims on third parties) by using the risk parameters (PD and LGD) of the guarantor. Under the SACR, the Bank uses the risk weightings laid down by the supervisory authority.

Regulatory setting-off provided, as part of the assessment of their declaration of liability, guarantors are subject to a review of their creditworthiness and rating in accordance with their sector and business. The aim of the creditworthiness review is to establish a guarantor's maximum ability to pay.

An overview of the main types of guarantors and credit derivatives' counterparties, broken down by rating classes, is given in the following two tables:

CRM1: Guarantors and credit derivatives' counterparties by main type and rating classes (IRBA))

IRBA Exposure | €m	Rating 1 (0.00-0.08%)	Rating 2 (0.08-0.68%)	Rating 3 (0.68-3.10%)	Rating 4 (3.10-9.35%)	Rating 5 (9.35-99.99%)	Rating 6 (100%)	Total
Public sector, defence and social security	405	1,351	0	0	0	0	1,757
Banks and financial institutions	3,608	721	187	14	0	0	4,531
Insurance companies	724	1,255	19	0	0	0	1,998
Industries	71	1,828	359	28	11	0	2,297
Other service companies	47	598	132	39	6	0	822
Private households	142	61	9	1	0	0	213
Others	1	1	8	1	0	0	11
Total IRBA 2017	**4,999**	**5,817**	**714**	**83**	**17**	**0**	**11,630**

CRM2: Guarantors and credit derivatives' counterparties by main type and rating classes (SACR)

SACR | Exposure | €m	AAA	AA	A	BBB	BB	n.a.	Total
Public sector, defence and social security	2,834	0	0	14	0	0	2,848
Banks and financial institutions	323	0	4	44	0	0	372
Insurance companies	2,829	241	2	0	0	0	3,072
Private households	0	0	0	0	0	0	0
Others	27	0	0	0	0	0	27
Total SACR 2017	**6,012**	**241**	**7**	**59**	**0**	**0**	**6,319**

In accordance with the CRR, the quality of the collateral received is subject to rigorous review and is continuously monitored. In particular, this includes establishing the legal enforceability of the collateral and ensuring that it is valued regularly. The recoverability of the collateral instruments included for regulatory purposes is reviewed on a regular basis during the term of a loan as part of regular credit processing. Depending on the collateral type, this takes place at adequate intervals, at least annually or as circumstances require. Positive correlations between the creditworthiness of the borrower and the value of the collateral or guarantee are established in the lending process and collateral instruments affected are not offset. Collateral for corporate customers is processed exclusively by the risk function's collateral management unit.

The Bank carries out collateral concentration analyses for all lending collateral (physical and personal collateral). Various aspects such as collateral category, borrower's rating class and regional allocation of the collateral are examined. With reference to these aspects, the Board of Managing Directors is kept informed on a regular basis of the development of the collateral pool and possible anomalies/concentrations. As at 31 December 2017, more than three-quarters of the collateral values of collateralised claims not in default were accounted for by customers with an investment grade rating. Measured in terms of the collateral value, most collateral was held in countries with an investment grade rating. Table EU CR3 at the end of the section provides an overview of the scope of use of credit risk mitigation techniques by asset class. Most of the positions in column c are secured by mortgage liens.

The valuation and processing of collateral are governed by universally applicable standards and collateral-specific instructions (guidelines, descriptions of processes, IT instructions, legally validated standard contracts and samples). The standards established to hedge against or mitigate the risks of loans, which also take account of the regulatory requirements of CRR, include, amongst others:

- Legal and operational standards for documentation and data collection as well as valuation standards.
- The standardisation and updating of collateral valuations are ensured by laying down valuation processes, prescribing standardised valuation methods, parameters and defined discounts for collateral, clearly defining responsibilities for the processing and valuation process, and stipulating requirements for revaluations at regular intervals.
- Other standards for taking account of specific risks, e.g. operational risks, correlation and concentration risks, market price change risks (e.g. due to currency fluctuations), country risks, legal risks or risks of changes in the law, and risks of insufficient insurance cover.

For the vast majority of its default risk positions from counterparty credit risk, Commerzbank Group uses the internal model method (IMM) according to Article 283 CRR. The credit equivalent amounts are determined as expected future exposure through the simulation of various market scenarios, taking netting and collateral into account.

Also for securities repurchase, lending and comparable transactions involving securities or goods, the exposures are determined in accordance with Article 283 and Article 273 (2) CRR on the basis of an internal model method. Guarantees and credit derivatives are taken into account via the substitution approach. The double-default procedure defined under Article 153 (3) CRR is applied.

Details on the use of credit risk mitigation techniques in default risks from counterparty credit risk are set out in the section on counterparty credit risk.

EU CR3: Credit risk mitigation (CRM) techniques – overview

		a	b	c	d	e
	€m	Exposures unsecured – carrying amount	Exposures secured – carrying amount	Exposures secured by collateral	Exposures secured by financial guarantees	Exposures secured by credit derivatives
1	Central governments or central banks	27,433	559	15	523	0
2	Institutions	33,911	6,224	1,207	3,592	0
3	Corporates	160,946	40,077	14,508	12,387	271
4	thereof SMEs	6,115	6,636	2,842	531	0
5	thereof specialised lending	17,038	6,868	4,799	284	0
6	thereof other	137,792	26,572	6,867	11,572	271
7	Retail	45,721	79,628	55,918	375	0
8	thereof secured by mortgages / SMEs	51	1,030	737	25	0
9	thereof secured by mortgages / non-SMEs	2,690	67,253	48,585	11	0
10	thereof qualifying revolving	13,066	0	0	0	0
11	thereof other / SME	10,213	2,680	808	273	0
12	thereof other / non-SMEs	19,700	8,664	5,788	65	0
13	Equity exposures IRB	0	0	0	0	0
14	Other non-credit obligation assets	7,295	0	0	0	0
15	**Total IRB approach**	**275,305**	**126,487**	**71,649**	**16,876**	**271**
16	Central governments or central banks	48,159	0	0	0	0
17	Regional governments or local authorities	21,323	4	1	3	0
18	Public sector entities	4,305	264	4	146	0
19	Multilateral development banks	458	0	0	0	0
20	International organisations	219	0	0	0	0
21	Institutions	1,999	210	210	0	0
22	Corporates	7,531	899	359	248	0
23	thereof SMEs	415	88	12	67	0
24	Retail	8,007	315	148	20	0
25	thereof SMEs	35	11	8	1	0
26	Secured by mortgages on immovable property	0	2,084	2,084	0	0
27	thereof SMEs	0	12	12	0	0
28	Exposures in default	244	50	2	18	0
29	Items associated with particularly high risk	89	0	0	0	0
30	Covered bonds	4	0	0	0	0
31	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0
32	Collective investment undertakings	2,691	0	0	0	0
33	Equity exposures	970	0	0	0	0
34	Other exposures	2,994	0	0	0	0
35	**Total SACR**	**98,993**	**3,826**	**2,809**	**436**	**0**
36	**Total**	**374,299**	**130,314**	**74,458**	**17,312**	**271**
37	of which loans	183,970	113,636	69,374	12,419	42
38	of which debt securities	32,174	492	0	490	0
39	of which defaulted positions	2,156	1,115	875	128	0

Credit risk and credit risk mitigation in the IRBA

The credit risk of the Commerzbank Group's IRBA portfolio divided into the relevant IRBA asset classes and PD ranges is shown below. The information in table EU CR6 on on-balance-sheet gross receivables refers to the risk exposure values to be determined according to Article 166 CRR. These represent the expected amounts of the IRBA positions that will be exposed to a risk of loss. The off-balance-sheet claims are shown before taking into account credit risk adjustments and conversion factors. Exposure at default (regulatory EaD) shows the exposure values after taking into account credit risk mitigation. The risk parameters CCF, PD and LGD are calculated as EaD-weighted averages. The IRBA default definition is also used for internal purposes.

The companies in the Commerzbank Group use the IRBA approach. They may therefore use internal estimates of credit conversion factors (CCFs) for regulatory purposes, too. CCFs are necessary for off-balance-sheet transactions in order to assess the likely exposure in the event of a possible default on commitments that have not yet been drawn.

Tables EU CR6 and EU CR7 show only portfolios which fall within the scope of IRBA and are rated with a rating process that has been approved by the supervisory authority. Positions in the risk exposure class other non-loan-related assets are not listed in table EU CR6. These assets amounting to €2.9bn do not have any creditworthiness risks and are therefore not relevant for the management of default risks. Table EU CR6 also does not include mBank S.A. positions of €1.7bn which are subject to the IRBA slotting approach in accordance with Article 153 (5) CRR and are shown in table EU CR10. Investment positions with a fixed risk weighting according to Article 155 (2) CRR are not relevant in the Commerzbank Group as at 31 December 2017 and are therefore not part of table EU CR10. Appendix 5 contains an overview of the exposure-weighted averages of the credit risk parameters PD and LGD by asset class and relevant geographical location (countries in which Commerzbank has been authorised or has a branch or a subsidiary) according to Article 452 (j) i) CRR.

The securitisation exposures in the IRBA are presented separately in the section on securitisations in this report. Counterparty default risks are shown in the section on default risks from counterparty credit risks in this report.

The risk exposure values shown in this section generally differ from the EaD values in the Annual Report (economic EaD) due to the following:

- As required by EBA guideline EBA/GL/2016/11 on disclosure requirements, credit risk and counterparty credit risk are presented separately in the Disclosure Report.
- Some transactions are not included in risk-weighted assets (RWA) for regulatory purposes but are included in the EaD of the Annual Report and Risk Report respectively.
- The figures shown in this Disclosure Report refer to the regulatory scope of consolidation. By contrast, the figures in the Annual Report refer to the IFRS scope of consolidation.

The amount of the exposures secured by collateral, financial guarantees or credit derivatives and the amount of unsecured exposures by asset class is shown in table EU CR3 in the preceding section on credit risk mitigation. In addition to the collateral in the standardised approach to credit risk (hereinafter referred to as SACR), under the IRBA some physical and other collateral which is only eligible for recognition under the IRBA is also offset.

The calculation of collateral is based on market values weighted with recovery rates. These recovery rates are based on empirical data and form part of the LGD models. By definition, the rates cannot exceed 100%; therefore, the collateral values are normally lower than the market values. By contrast, under the IRBA the substitution approach is used to offset guarantees and credit derivatives. The protection therefore does not take effect in the LGD, as is the case with financial and other IRBA collateral, but via the substitution of the debtor's risk parameters with those of the guarantor. Alternatively, the double-default procedure may be used in the IRBA.

The impact of credit derivatives used as credit risk mitigation techniques on the amount of RWA of credit risk in the IRBA portfolio at 31 December 2017 comes to less than 0.5% (see the next table EU CR7).

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

		a	b	c	d	e	f	g	h	i	j	k	l
	PD scale	Original on-balance-sheet gross exposure €m	Off-balance-sheet exposures pre-CCF €m	Average CCF %	EaD post CRM and post CCF €m	Average PD %	Number of obligors	Average LGD %	Average maturity years[1]	RWAs €m	RWA density bps.	EL €m	Value adjustments and provisions €m
Central governments or central banks	0.00 to < 0.15	22,413	723	0.47	24,182	0.02	144	15.83	1.5	1,092	5	1	
	0.15 to < 0.25	2,587	77	0.70	2,695	0.19	9	23.09	1.3	484	18	1	
	0.25 to < 0.50	746	164	0.33	882	0.32	22	55.94	2.4	655	74	2	
	0.50 to < 0.75	141	17	0.45	148	0.69	11	99.98	0.8	206	139	1	
	0.75 to < 2.50	218	81	0.41	99	1.23	26	88.33	1.5	169	172	1	
	2.50 to 10.00	356	146	0.35	261	3.90	58	90.06	1.1	660	253	9	
	10.00 to < 100.00	162	162	0.26	57	16.77	43	65.56	1.3	170	299	5	
	100.00 (default)	0	0	0.00	0	100.00	1	20.00	1.0	0	0	0	
	Subtotal	**26,623**	**1,370**	**0.43**	**28,324**	**0.13**	**299**	**19.28**	**1.5**	**3,437**	**12**	**21**	**1.8**
Institutions	0.00 to < 0.15	12,327	2,155	0.50	15,193	0.06	438	32.72	2.6	3,335	22	3	
	0.15 to < 0.25	2,119	873	0.48	2,289	0.20	152	34.15	2.1	807	35	2	
	0.25 to < 0.50	6,308	1,211	0.44	6,576	0.39	268	37.06	1.9	3,756	57	10	
	0.50 to < 0.75	3,612	736	0.45	3,395	0.59	150	28.41	2.3	2,185	64	7	
	0.75 to < 2.50	4,562	1,949	0.45	4,731	1.21	372	38.15	1.2	3,940	83	23	
	2.50 to 10.00	1,752	1,705	0.47	1,736	5.09	305	27.57	0.8	1,371	79	20	
	10.00 to < 100.00	480	290	0.43	212	18.69	53	25.68	2.5	346	164	9	
	100.00 (default)	96	20	0.29	95	100.00	22	78.34	1.0	0	0	74	
	Subtotal	**31,257**	**8,939**	**0.47**	**34,226**	**0.99**	**1,744**	**33.80**	**2.1**	**15,741**	**46**	**148**	**60.5**
Corporates TOTAL	0.00 to < 0.15	16,360	34,340	0.38	31,218	0.06	25,464	32.59	2.4	7,804	25	11	
	0.15 to < 0.25	11,268	26,725	0.36	22,443	0.19	14,955	36.46	2.5	9,921	44	18	
	0.25 to < 0.50	18,284	32,276	0.35	30,336	0.35	18,357	31.71	2.4	15,408	51	40	
	0.50 to < 0.75	9,035	10,708	0.41	13,187	0.60	9,261	31.02	2.3	7,929	60	28	
	0.75 to < 2.50	14,059	12,802	0.37	15,492	1.20	23,823	29.18	2.1	11,520	74	68	
	2.50 to 10.00	4,822	2,685	0.33	5,262	4.23	9,117	35.17	1.6	5,805	110	90	
	10.00 to < 100.00	3,234	543	0.36	3,311	15.34	2,571	29.07	1.7	4,474	135	358	
	100.00 (default)	3,460	527	0.33	3,564	100.00	4,191	52.78	1.4	1,074	30	1,984	
	Subtotal	**80,522**	**120,605**	**0.41**	**124,814**	**4.46**	**35,072**	**38.34**	**2.5**	**63,934**	**51**	**2,597**	**2,138.7**
Corporates, thereof SMEs	0.00 to < 0.15	849	1,138	0.39	1,278	0.08	506	32.59	2.7	230	18	0	
	0.15 to < 0.25	849	753	0.36	1,073	0.20	546	36.46	2.5	326	30	1	
	0.25 to < 0.50	1,616	936	0.37	1,901	0.35	774	32.79	2.5	702	37	2	
	0.50 to < 0.75	846	560	0.41	1,060	0.61	516	36.81	2.3	564	53	2	
	0.75 to < 2.50	1,942	1,106	0.40	2,252	1.32	1,554	38.15	2.2	1,596	71	11	
	2.50 to 10.00	1,206	421	0.41	1,240	4.50	799	37.62	1.8	1,212	98	21	
	10.00 to < 100.00	200	26	0.36	176	15.34	131	36.04	1.7	241	137	10	
	100.00 (default)	499	62	0.34	501	100.00	240	62.84	1.4	91	18	312	
	Subtotal	**8,009**	**5,001**	**0.39**	**9,480**	**6.64**	**5,065**	**37.18**	**2.2**	**4,963**	**52**	**360**	**257.5**

[1] For retail, this parameter is not included in the RWA calculation, therefore – according to EBA/GL/2016/11 – no details are given here for retail.

EU CR6_cont.: IRB approach – Credit risk exposures by exposure class and PD range

		a	b	c	d	e	f	g	h	i	j	k	l
	PD scale	Original on-balance-sheet gross exposure €m	Off-balance-sheet exposures pre-CCF €m	Average CCF %	EaD post CRM and post CCF €m	Average PD %	Number of obligors	Average LGD %	Average maturity years[1]	RWAs €m	RWA density bps.	EL €m	Value adjustments and provisions €m
Corporates, thereof specialised lending	0.00 to < 0.15	4,780	641	0.38	8,459.75	0.06	3,922	37.45	3.3	1,889	22	2	
	0.15 to < 0.25	1,525	344	0.42	2,279.03	0.19	743	41.45	3.3	1,050	46	2	
	0.25 to < 0.50	3,066	828	0.35	3,930.96	0.36	655	31.71	3.3	1,745	44	4	
	0.50 to < 0.75	1,862	109	0.54	2,137.35	0.61	359	31.02	3.5	1,212	57	4	
	0.75 to < 2.50	2,572	504	0.49	2,951.88	1.27	464	29.18	3.2	1,990	67	11	
	2.50 to 10.00	1,649	182	0.33	1,735.96	5.32	203	35.17	3.0	2,130	123	34	
	10.00 to < 100.00	2,715	365	0.43	2,861.00	42.80	250	29.07	3.1	3,771	132	330	
	100.00 (default)	1,593	39	0.33	1,605.42	100.00	338	59.98	2.0	834	52	896	
	Subtotal	**19,761**	**3,013**	**0.40**	**25,961.34**	**11.54**	**6,725**	**35.78**	**3.2**	**14,622**	**56**	**1,284**	**901.6**
Corporates, thereof other	0.00 to < 0.15	10,731	32,561	0.42	21,480.12	0.10	4,187	40.12	2.4	5,685	26	8	
	0.15 to < 0.25	8,894	25,628	0.41	19,090.75	0.20	3,751	40.37	2.6	8,544	45	16	
	0.25 to < 0.50	13,602	30,512	0.40	24,504.59	0.35	4,790	39.10	2.4	12,960	53	34	
	0.50 to < 0.75	6,327	10,039	0.42	9,990.22	0.60	2,256	36.72	2.3	6,152	62	22	
	0.75 to < 2.50	9,545	11,193	0.37	10,288.23	1.20	5,971	36.64	2.1	7,934	77	46	
	2.50 to 10.00	1,967	2,082	0.37	2,286.13	4.23	2,048	35.64	1.6	2,464	108	35	
	10.00 to < 100.00	318	151	0.42	274.58	19.20	478	38.76	1.8	462	168	18	
	100.00 (default)	1,368	426	0.36	1,457.85	100.00	819	52.78	1.5	149	10	775	
	Subtotal	**52,752**	**112,591**	**0.41**	**89,372.48**	**2.17**	**24,224**	**39.20**	**2.3**	**44,349**	**50**	**953**	**979.5**
Retail	0.00 to < 0.15	38,632	17,559	0.44	50,792.61	0.04	9,098,480	15.90		1,619	3	7	
	0.15 to < 0.25	14,599	3,921	0.44	17,158.17	0.19	1,774,350	15.78		1,506	9	8	
	0.25 to < 0.50	17,931	5,311	0.46	21,674.83	0.36	2,106,575	15.85		3,109	14	19	
	0.50 to < 0.75	6,595	2,234	0.47	8,286.25	0.60	1,082,320	16.51		1,878	23	14	
	0.75 to < 2.50	9,043	2,879	0.46	10,848.24	1.20	3,421,870	16.38		3,662	34	44	
	2.50 to 10.00	3,958	713	0.49	4,341.57	4.50	1,444,010	17.19		2,396	55	65	
	10.00 to < 100.00	1,331	89	0.43	1,368.76	17.87	464,050	18.45		1,256	92	87	
	100.00 (default)	1,213	34	0.00	1,209.72	100.00	431,250	40.90		999	83	613	
	Subtotal	**93,301**	**32,740**	**0.69**	**115,680.16**	**1.76**	**3,951,762**	**26.58**		**16,425**	**14**	**858**	**692.8**
Total	0.00 to < 0.15	89,732	54,777	0.38	121,385.36	0.02	1,999,598	15.83	1.5	13,850	11	23	
	0.15 to < 0.25	30,573	31,596	0.36	44,585.03	0.19	386,726	15.78	1.3	12,718	29	29	
	0.25 to < 0.50	43,269	38,961	0.33	59,469.53	0.32	460,890	15.85	1.9	22,928	39	71	
	0.50 to < 0.75	19,383	13,695	0.41	25,017.10	0.59	232,279	16.51	0.8	12,197	49	50	
	0.75 to < 2.50	27,882	17,711	0.37	31,170.01	1.20	709,629	16.38	1.2	19,292	62	135	
	2.50 to 10.00	10,888	5,250	0.33	11,600.88	3.90	299,722	17.19	0.8	10,232	88	184	
	10.00 to < 100.00	5,207	1,083	0.26	4,948.30	15.34	98,556	18.45	1.3	6,246	126	460	
	100.00 (default)	4,769	581	0.00	4,868.44	100.00	90,597	20.00	1.0	2,073	43	2,672	
	Total (all portfolios)	**231,703**	**163,654**	**0.47**	**303,044.65**	**2.63**	**3,985,274**	**31.57**	**1.4**	**99,537**	**33**	**3,623**	**2,893.7**

[1] For retail, this parameter is not included in the RWA calculation, therefore – according to EBA/GL/2016/11 – no details are given here for retail.

EU CR6_Retail: IRB approach – Retail's Credit risk exposures by exposure class and PD range

		a	b	c	d	e	f	g	h	i	j	k	l
	PD scale	Original on-balance-sheet gross exposure €m	Off-balance-sheet exposures pre-CCF €m	Average CCF %	EaD post CRM and post CCF €m	Average PD %	Number of obligors	Average LGD %	Average maturity[1] years	RWAs €m	RWA density bps.	EL €m	Value adjustments and provisions €m
Retail	0.00 to < 0.15	38,632	17,559	0.44	50,792.61	0.04	9,098,480	15.90		1,619	3	7	
	0.15 to < 0.25	14,599	3,921	0.44	17,158.17	0.19	1,774,350	15.78		1,506	9	8	
	0.25 to < 0.50	17,931	5,311	0.46	21,674.83	0.36	2,106,575	15.85		3,109	14	19	
	0.50 to < 0.75	6,595	2,234	0.47	8,286.25	0.60	1,082,320	16.51		1,878	23	14	
	0.75 to < 2.50	9,043	2,879	0.46	10,848.24	1.20	3,421,870	16.38		3,662	34	44	
	2.50 to 10.00	3,958	713	0.49	4,341.57	4.50	1,444,010	17.19		2,396	55	65	
	10.00 to < 100.00	1,331	89	0.43	1,368.76	17.87	464,050	18.45		1,256	92	87	
	100.00 (default)	1,213	34	0.00	1,209.72	100.00	431,250	40.90		999	83	613	
	Gesamt	**93,301**	**32,740**	**0.69**	**115,680.16**	**1.76**	**3,951,762**	**26.58**		**16,425**	**14**	**858**	**692.8**
...secured by mortgages / SMEs	0.00 to < 0.15	126	2	0.86	124.86	0.10	315	29.91		7	6	0	
	0.15 to < 0.25	112	6	0.90	115.35	0.21	732	30.22		12	10	0	
	0.25 to < 0.50	298	22	0.95	310.97	0.36	1,922	28.42		45	14	0	
	0.50 to < 0.75	145	11	1.00	153.04	0.61	1,021	28.73		32	21	0	
	0.75 to < 2.50	199	16	1.10	211.10	1.20	1,161	30.27		72	34	1	
	2.50 to 10.00	81	3	1.03	81.66	4.54	490	32.43		64	79	1	
	10.00 to < 100.00	32	1	0.98	32.53	17.87	273	30.46		42	129	2	
	100.00 (default)	46	0	0.00	45.58	100.00	317	55.05		79	174	19	
	Subtotal	**1,039**	**62**	**0.99**	**1,075.08**	**5.59**	**6,230**	**30.69**		**353**	**33**	**23**	**19.8**
...secured by mortgages / non-SMEs	0.00 to < 0.15	32,063	1,154	0.99	33,201.98	0.06	264,879	15.90		861	3	3	
	0.15 to < 0.25	11,770	408	0.99	12,171.62	0.20	118,098	15.78		806	7	4	
	0.25 to < 0.50	13,039	594	0.99	13,627.47	0.36	100,042	15.85		1,396	10	8	
	0.50 to < 0.75	4,210	273	1.00	4,479.03	0.60	29,234	16.51		694	15	4	
	0.75 to < 2.50	3,990	189	0.99	4,175.70	1.26	27,410	16.38		1,040	25	9	
	2.50 to 10.00	1,366	20	0.98	1,384.78	4.97	11,340	17.19		808	58	12	
	10.00 to < 100.00	596	2	0.89	598.30	21.08	5,963	18.45		620	104	23	
	100.00 (default)	443	0	0.08	442.55	100.00	4,541	40.90		466	105	146	
	Subtotal	**67,476**	**2,640**	**0.99**	**70,081.43**	**1.15**	**561,229**	**16.14**		**6,690**	**10**	**208**	**173.0**
...qualifying revolving	0.00 to < 0.15	218	10,540	0.65	7,110.19	0.04	1,427,230	60.41		129	2	2	
	0.15 to < 0.25	50	460	0.65	349.22	0.19	103,220	59.87		23	7	0	
	0.25 to < 0.50	109	482	0.64	419.44	0.36	121,522	59.23		45	11	1	
	0.50 to < 0.75	76	215	0.64	212.78	0.62	64,012	59.19		35	17	1	
	0.75 to < 2.50	231	398	0.63	484.00	1.39	235,198	59.63		148	31	4	
	2.50 to 10.00	126	113	0.64	198.35	4.66	65,461	59.65		142	71	6	
	10.00 to < 100.00	42	15	0.65	51.81	23.89	18,066	58.29		78	151	7	
	100.00 (default)	9	1	0.66	9.06	100.00	2,797	64.63		0	0	6	
	Subtotal	**861**	**12,225**	**0.65**	**8,834.87**	**0.50**	**2,037,506**	**60.24**		**601**	**7**	**26**	**19.2**

[1] For retail, this parameter is not included in the RWA calculation, therefore – according to EBA/GL/2016/11 – no details are given here for retail.

EU CR6_Retail_cont.: IRB approach – Retail's Credit risk exposures by exposure class and PD range

		a	b	c	d	e	f	g	h	i	j	k	l
	PD scale	**Original on-balance-sheet gross exposure** €m	**Off-balance-sheet exposures pre-CCF** €m	**Average CCF** %	**EaD post CRM and post CCF** €m	**Average PD** %	**Number of obligors**	**Average LGD** %	**Average maturity** years[1]	**RWAs** €m	**RWA density** bps.	**EL** **€m**	**Value adjustments and provisions** €m
…other / SME	0.00 to < 0.15	337	1,446	0.44	953.02	0.10	10,445	40.72		77	8	0	
	0.15 to < 0.25	546	1,800	0.44	1,323.37	0.20	20,624	41.17		177	13	1	
	0.25 to < 0.50	829	1,490	0.46	1,485.42	0.37	31,943	40.61		293	20	2	
	0.50 to < 0.75	522	645	0.47	808.10	0.62	20,307	39.65		210	26	2	
	0.75 to < 2.50	1,813	1,233	0.46	2,329.32	1.33	61,513	38.25		806	35	12	
	2.50 to 10.00	1,296	376	0.49	1,439.33	4.76	48,403	36.01		631	44	24	
	10.00 to < 100.00	386	48	0.43	396.33	19.56	15,170	33.94		235	59	26	
	100.00 (default)	316	25	0.37	316.82	100.00	15,251	69.99		134	42	212	
	Subtotal	**6,045**	**7,063**	**0.45**	**9,051.72**	**5.61**	**223,634**	**40.02**		**2,563**	**28**	**279**	**214.6**
…other / non-SME	0.00 to < 0.15	5,888	4,417	0.77	9,402.56	0.06	287,532	32.93		544	6	2	
	0.15 to < 0.25	2,120	1,247	0.86	3,198.60	0.20	138,851	35.86		489	15	2	
	0.25 to < 0.50	3,656	2,723	0.80	5,831.53	0.36	198,952	43.00		1,330	23	8	
	0.50 to < 0.75	1,643	1,090	0.91	2,633.31	0.60	114,413	41.35		907	34	7	
	0.75 to < 2.50	2,809	1,043	0.82	3,648.12	1.31	375,960	39.78		1,596	44	18	
	2.50 to 10.00	1,090	200	0.77	1,237.45	4.50	170,615	39.92		751	61	22	
	10.00 to < 100.00	275	22	0.73	289.78	23.60	58,129	42.93		281	97	30	
	100.00 (default)	400	8	0.32	395.71	100.00	66,271	64.74		320	81	232	
	Subtotal	**17,881**	**10,750**	**0.80**	**26,637.06**	**2.31**	**1,404,786**	**38.16**		**6,219**	**23**	**321**	**266.1**

[1] For retail, this parameter is not included in the RWA calculation, therefore – according to EBA/GL/2016/11 – no details are given here for retail.

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

		a	b
	€m	Pre-credit derivatives RWAs	Actual RWAs
1	**Exposures under FIRB**	**0**	**0**
2	Central governments or central banks	0	0
3	Institutions	0	0
4	Corporates - SMEs	0	0
5	Corporates - specialised lending	0	0
6	Corporates - other	0	0
7	**Exposures under AIRB**	**103,964**	**103,834**
8	Central governments or central banks	3,437	3,437
9	Institutions	15,717	15,741
	Corporates	65,461	65,306
10	thereof SMEs	4,963	4,963
11	thereof specialised lending	15,968	15,994
12	thereof other	44,530	44,349
	Retail	16,425	16,425
13	thereof secured by mortgages / SMEs	353	353
14	thereof secured by mortgages / non-SMEs	6,690	6,690
15	thereof qualifying revolving	601	601
16	thereof other / SME	2,563	2,563
17	thereof other / non-SMEs	6,219	6,219
18	Equity IRB	0	0
19	Other non-credit obligation assets	2,924	2,924
20	**Total**	**103,964**	**103,834**

EU CR10: IRB (specialised lending)

		a	b	c	d	e	f
€m	Specialised lending						
Regulatory categories	**Remaining maturity**	**On-balance-sheet amount**	**Off-balance-sheet amount**	**Risk weight**	**Exposure amount**	**RWAs**	**Expected loss**
Category 1	Less than 2.5 years	242	146	50%	277	193	1
	Equal to or more than 2.5 years	28	2	70%	28	20	0
Category 2	Less than 2.5 years	0	0	70%	0	0	0
	Equal to or more than 2.5 years	1,189	290	90%	1,191	1,070	10
Category 3	Less than 2.5 years	22	1	115%	22	25	1
	Equal to or more than 2.5 years	56	0	115%	56	64	2
Category 4	Less than 2.5 years	0	0	250%	0	0	0
	Equal to or more than 2.5 years	0	0	250%	0	0	0
Category 5	Less than 2.5 years	29	0	-	53	0	27
	Equal to or more than 2.5 years	30	0	-	45	0	23
Total	**Less than 2.5 years**	**292**	**147**		**353**	**218**	**28**
	Equal to or more than 2.5 years	**1,303**	**292**		**1,321**	**1,155**	**34**

Table EU CR8 below shows changes in the RWA of the credit risk in the IRBA portfolio of Commerzbank Group between 30 September 2017 and 31 December 2017. The RWA reduction in Q4 essentially resulted from an improved portfolio quality (quality of assets, effects from collateral) and from relief due to the expiry of residual terms. Organic growth in the operational segments led to an increase in risk positions. The reporting already includes the further reduction of non-strategic portfolios. The partial RWA increase due to model changes results primarily from the adjustment of the Bank's internal modelling of LGD for bonds.

EU CR8: RWA flow statements of credit risk exposures under the IRB approach

		a	b
	€m	Risk weighted assets (RWAs)	Capital requirements
1	**RWAs as at the end of the previous reporting period**	**104,316**	**8,345**
2	Asset size	732	59
3	Asset quality	–1,161	–93
4	Model updates	2,223	178
5	Methodology and policy	0	0
6	Acquisitions and disposals	0	0
7	Foreign exchange movements	–129	–10
8	Collateral effects	–976	–78
9	Duration effects	–1,196	–96
10	Others	25	2
11	**RWAs as at the end of the reporting period**	**103,834**	**8,307**

Credit risk and credit risk mitigation in the SACR

The portfolios currently excluded from the IRBA are measured in accordance with SACR regulations as permitted under partial use provisions. In contrast to the IRBA, the SACR is largely based on a flat risk weighting or external ratings. Commerzbank has nominated the rating agencies Standard & Poor's Rating Services, Moody's Investors Service and FitchRatings for the use of external ratings.

Where an external credit rating is available for a position, that external rating is used to determine the risk weighting. Commerzbank uses the standard mapping of external credit assessments to the relevant credit quality steps published by the EBA in accordance with Article 136 CRR. Where two or more external credit ratings are available for one position, the risk weighting is assigned in accordance with the provisions of Article 138 CRR.

For unrated positions, if the conditions set out in Articles 139 and 140 CRR are met, a risk weighting is calculated on the basis of a derived credit rating. In all other cases, the position is treated as an unrated exposure.

External ratings are used for central governments or central banks, regional and local governments, public-sector entities, multilateral development banks, institutions, companies and covered bonds. They are not used for positions in local currency in order to derive risk weightings for foreign currency exposures.

Table EU CR4 below shows the impact of the credit risk mitigation techniques used in the SACR portfolio in accordance with Chapter 4 of Title II of Part Three CRR and the conversion factors used in accordance with Article 111 CRR. For the reported SACR exposure value, unlike the IRBA, the valuation allowances based on each of the positions are deducted. Table EU CR5 shows the distribution of exposure values after credit risk mitigation and conversion factors associated with each credit quality step and asset class in accordance with Article 444 (e) CRR..

EU CR4: Standardised approach – Credit risk exposure and CRM effects

		a	b	c	d	e	f
	Exposure classes €m	**Exposures before CCF and CRM**		**Exposures post CCF and CRM**		**RWAs and RWA density**	
		On-balance-sheet amount	**Off-balance-sheet amount**	**On-balance-sheet amount**	**Off-balance-sheet amount**	**RWAs**	**RWA density**
1	Central governments or central banks	48,104	55	52,489	374	371	0.7%
2	Regional government or local authorities	20,487	840	21,225	31	1,513	7.1%
3	Public sector entities	4,232	337	4,387	114	311	6.9%
4	Multilateral development banks	458	0	479	0	0	0.0%
5	International organisations	219	0	219	0	0	0.0%
6	Institutions	2,207	2	2,043	3	389	19.0%
7	Corporates	5,827	2,603	5,298	1,697	6,244	89.3%
8	Retail	4,384	3,939	4,224	197	3,313	74.9%
9	Secured by mortgages on immovable property	2,063	21	2,063	10	752	36.3%
10	Exposures in default	285	9	266	2	367	137.3%
11	Exposures associated with particularly high risk	89	0	89	0	133	150.0%
12	Covered bonds	4	0	4	0	0	10.0%
13	Institutions and corporates with a short-term credit assessment	0	0	0	0	0	0.0%
14	Collective investment undertakings	2,691	0	2,691	0	837	31.1%
15	Equity	970	0	970	0	1,371	141.3%
16	Other items	2,930	64	2,930	64	6,859	229.1%
17	**Total**	**94,949**	**7,871**	**99,377**	**2,492**	**22,460**	**22.1%**

EU CR5: Standardised approach – Credit risk (post CCF and CRM) by exposure class and risk weight

	Exposure classes	Risk weight																Total	Of which unrated
	€m	0%	2%	4%	10%	20%	35%	50%	70%	75%	100%	150%	250%	370%	1250%	Others	Deducted		
1	Central governments or central banks	52,392	0	0	0	0	0	200	0	0	271	0	0	0	0	0	0	52,863	46,279
2	Regional government or local authorities	14,588	0	0	0	6,163	0	450	0	0	55	0	0	0	0	0	0	21,256	20,131
3	Public sector entities	2,968	0	0	0	1,522	0	9	0	0	2	0	0	0	0	0	0	4,501	3,816
4	Multilateral development banks	479	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	479	255
5	International organisations	219	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	219	219
6	Institutions	336	0	0	0	1,592	0	94	0	0	23	0	0	0	0	0	0	2,046	1,989
7	Corporates	0	0	0	0	352	2	1,154	0	0	5,255	233	0	0	0	0	0	6,996	5,950
8	Retail	0	0	0	0	0	0	0	0	4,421	0	0	0	0	0	0	0	4,421	4,421
9	Secured by mortgages on immovable property	0	0	0	0	0	1,919	151	0	0	0	4	0	0	0	0	0	2,073	2,073
10	Exposures in default	0	0	0	0	0	0	0	0	0	68	199	0	0	0	0	0	267	267
11	Exposures associated with particularly high risk	0	0	0	0	0	0	0	0	0	0	89	0	0	0	0	0	89	89
12	Covered bonds	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4	4
13	Institutions and corporates with a short-term credit assessment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Collective investment undertakings	1,284	0	0	0	0	0	0	0	0	91	0	0	0	0	1,316	0	2,691	2,691
15	Equity	0	0	0	0	0	0	0	0	0	702	0	267	0	0	0	0	970	970
16	Other items	0	0	0	0	0	0	0	0	0	418	0	2,576	0	0	0	0	2,994	2,994
17	**Total**	**72,266**	**0**	**0**	**4**	**9,629**	**1,920**	**2,058**	**0**	**4,421**	**6,886**	**525**	**2,844**	**0**	**0**	**1,316**	**0**	**101,869**	**92,071**

In order to mitigate credit risk in the SACR, the Commerzbank Group takes financial collateral and guarantees into consideration. These are dealt with separately in the section on risk mitigation. Furthermore, collateral in the form of property charges also reduces the risk weighting.

Under the SACR, guarantees are treated according to the substitution principle. This means that the borrower's risk weighting is replaced by that of the guarantor. Consequently, the guaranteed amount is transferred from the borrower's exposure class to that of the guarantor. This is why the exposure before CRM for assets guaranteed by central governments and central banks, for example, is less than after CRM. This can be seen in table EU CR4. However, a transfer only takes place if the risk weighting of the guarantor is lower than that of the borrower.

Past due positions are shown with a risk weighting of 150%. Depending on the valuation allowances based on them (SLLP, Port LLP impaired) or the collateral, a risk weighting of 100% can be applied or they may be shifted to another exposure class.

The amount of the exposures secured by collateral, financial guarantees or credit derivatives and the amount of unsecured exposures by asset class is shown in table EU CR3 in the section on credit risk mitigation. The effectively secured risk position values, i.e. taking into consideration all of the relevant haircuts for the collateral, are allocated to the SACR exposure class. In taking financial collateral into account as a credit risk mitigation technique, Commerzbank generally uses the comprehensive method as defined under Articles 223 to 228 CRR. In doing so, the risk exposure value for the default risk position is reduced by the value of the financial collateral.

Overarching portfolio analyses

This section provides an overview of the total portfolio containing default risks from credit risk with a net exposure value of €505bn as at 31 December 2017.

We show the total of SACR and IRBA positions with their net exposure value as defined by the EBA guideline EBA\GL\2016\11 (77) to (83).

In accordance with Chapter 6 of Title II of Part III CRR, instruments with counterparty default risk are not included in this section. They are reported separately in the section on default risks from counterparty credit risk.

Effectively securitised positions are also not included in the tables below. In accordance with Articles 243 and 244 CRR, positions are deemed to be effectively securitised if there has been an effective and operative transfer of risk. This applies regardless of whether these are traditionally or synthetically securitised positions. Securitisation positions arising from Group companies included in this Disclosure Report acting as investors or sponsors are also not included. Due to their particular significance, these are shown in the separate chapter on securitisations.

Table EU CRB-B provides an overview of net exposure values by asset class on the reporting date, average net exposure values during the period under review and the percentage share of exposures in each asset class in the Commerzbank Group's total exposure.

The country clusters selected in table EU CRB-C match the classification by geographical area used for internal purposes. For the presentation of exposures the following materiality threshold was used to identify material geographical regions or countries: all countries where net exposure share is at least 1% of total exposure are reported separately within their region, all other countries within that region are summarised under "Others". All regions where net exposure is at least 1% of the total exposure are reported as a separate region. All other regions are combined in the "Other regions" column. Alongside further additional information, Appendix 4 includes a list of countries which are not considered to be material within a region (share of total exposure <1%).

The breakdown by sector in table EU CRB-D is based on the methodology applied by the Federal Statistical Office and a system used internally.

Table EU CRB-E shows the net exposure values by contractual residual terms. Overnight receivables include net debit balances on current accounts, call and overnight transactions and credit lines that can be terminated at any time.

EU CRB-B: Total and average net amount of exposure

		a	b	
	€m	**Net value of exposures as at 31 December 2017**	**Average net exposures over the entire year 2017**	**Share as at 31.12.2017 %**
1	Central governments or central banks	27,991	31,627	5.5%
2	Institutions	40,136	42,160	8.0%
3	Corporates	201,022	201,783	39.8%
5	thereof SMEs	12,752	13,070	2.5%
4	thereof specialised lending	23,907	25,292	4.7%
	thereof other	164,364	163,420	32.6%
6	Retail	125,348	124,645	24.8%
8	thereof secured by mortgages / SMEs	1,081	1,111	0.2%
9	thereof secured by mortgages / non-SMEs	69,943	67,732	13.9%
10	thereof qualifying revolving	13,066	14,065	2.6%
12	thereof other / SME	12,893	12,805	2.6%
13	thereof other / non-SMEs	28,365	28,932	5.6%
14	Equity exposures IRB	0	0	0.0%
	Other non-credit obligation assets	7,295	6,723	1.4%
15	**Total IRB approach**	**401,793**	**406,938**	**79.6%**
16	Central governments or central banks	48,159	47,397	9.5%
17	Regional governments or local authorities	21,327	22,196	4.2%
18	Public sector entities	4,569	5,101	0.9%
19	Multilateral development banks	458	365	0.1%
20	International organisations	219	372	0.0%
21	Institutions	2,209	3,043	0.4%
22	Corporates	8,431	8,195	1.7%
23	thereof SMEs	503	532	0.1%
24	Retail	8,323	7,148	1.6%
25	thereof SMEs	45	72	0.0%
26	Secured by mortgages on immovable property	2,084	1,739	0.4%
27	thereof SMEs	12	15	0.0%
28	Exposures in default	294	337	0.1%
29	Items associated with particularly high risk	89	114	0.0%
30	Covered bonds	4	68	0.0%
31	Claims on institutions and corporates with a short-term credit assessment	0	9	0.0%
32	Collective investment undertakings	2,691	2,763	0.5%
33	Equity exposures	970	964	0.2%
34	Other exposures	2,994	3,152	0.6%
35	**Total SACR**	**102,820**	**102,962**	**20.4%**
36	**Total**	**504,612**	**509,900**	**100.0%**

EU CRB-C: Geographical breakdown of exposures by exposure class

		Net exposure value								
	Exposure class	**Western Europe**	**thereof...**							
	€m		**Germany**	**Switzerland**	**Great Britain**	**Italy**	**France**	**Netherlands**	**Spain**	**Others**
1	Central governments or central banks	16,670	434	15,117	0	0	0	0	4	1,115
2	Institutions	16,797	3,670	2,430	1,750	1,387	1,176	454	941	4,989
3	Corporates	160,022	105,334	7,010	11,320	2,948	9,751	5,668	3,018	14,973
3a	thereof SMEs	9,323	9,148	45	6	0	4	4	5	110
3b	thereof specialised lending	20,402	13,465	165	1,963	469	611	712	242	2,775
3c	thereof other	130,297	82,720	6,799	9,351	2,479	9,137	4,952	2,771	12,089
4	Retail	113,307	112,175	495	130	34	86	80	35	271
4a	thereof secured by mortgages / SMEs	543	536	0	0	0	0	4	0	4
4b	thereof secured by mortgages / non-SMEs	64,118	63,534	258	83	15	37	48	15	127
4c	thereof qualifying revolving	12,970	12,862	26	13	6	14	8	8	33
4d	thereof other / SME	10,663	10,606	27	4	3	2	5	3	13
4e	thereof other / non-SMEs	25,013	24,637	185	30	10	33	14	9	95
5	Equity exposures IRB	0	0	0	0	0	0	0	0	0
	Other non-credit obligation assets	5,922	5,912	1	7	0	0	0	0	2
6	**Total IRB approach**	**312,718**	**227,525**	**25,053**	**13,208**	**4,369**	**11,013**	**6,202**	**3,998**	**21,349**
7	Central governments or central banks	37,690	26,098	0	1,000	8,599	0	20	0	1,973
8	Regional governments or local authorities	18,987	13,192	0	4,200	405	0	0	1,002	189
9	Public sector entities	4,522	3,738	0	0	0	667	0	0	117
10	Multilateral development banks	224	0	0	0	0	0	0	0	224
11	International organisations	0	0	0	0	0	0	0	0	0
12	Institutions	1,605	1,176	0	221	0	11	0	0	196
13	Corporates	4,543	2,501	0	1,715	5	2	24	0	295
14	Retail	7,473	7,365	75	5	1	4	3	2	18
15	Secured by mortgages on immovable property	206	206	0	0	0	0	0	0	0
16	Exposures in default	195	88	0	0	105	2	0	0	0
17	Items associated with particularly high risk	71	64	0	6	0	2	0	0	0
18	Covered bonds	2	1	0	0	0	0	1	0	0
19	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	0	0	0	0
20	Collective investment undertakings	2,691	2,291	0	0	0	50	0	0	351
21	Equity exposures	756	690	5	6	0	0	1	0	54
22	Other exposures	2,682	2,571	0	43	0	5	0	0	63
23	**Total SACR**	**81,648**	**59,979**	**81**	**7,197**	**9,115**	**743**	**49**	**1,004**	**3,481**
24	**Total**	**394,366**	**287,503**	**25,133**	**20,405**	**13,484**	**11,756**	**6,251**	**5,002**	**24,831**

EU CRB-C_cont.: Geographical breakdown of exposures by exposure class

		Net exposure value					
	Exposure class	**Eastern Europe**	**thereof...**		**North America**	**thereof...**	
	€m		**Poland**	**Others**		**USA**	**Others**
1	Central governments or central banks	513	40	473	5,133	4,051	1,082
2	Institutions	2,125	282	1,843	4,132	3,165	967
3	Corporates	15,418	10,513	4,905	15,850	14,312	1,539
3a	thereof SMEs	3,003	2,814	189	18	18	0
3b	thereof specialised lending	2,381	2,136	245	322	287	35
3c	thereof other	10,033	5,562	4,471	15,511	14,007	1,504
4	Retail	11,385	11,254	131	166	152	14
4a	thereof secured by mortgages / SMEs	534	534	0	3	0	3
4b	thereof secured by mortgages / non-SMEs	5,557	5,511	46	83	79	4
4c	thereof qualifying revolving	17	2	15	22	19	3
4d	thereof other / SME	2,179	2,130	48	15	14	1
4e	thereof other / non-SMEs	3,099	3,077	22	43	40	3
5	Equity exposures IRB	0	0	0	0	0	0
	Other non-credit obligation assets	880	880	0	5	5	0
6	**Total IRB approach**	**30,322**	**22,969**	**7,353**	**25,286**	**21,684**	**3,603**
7	Central governments or central banks	10,299	8,312	1,988	140	140	0
8	Regional governments or local authorities	178	178	0	2,020	1,507	514
9	Public sector entities	29	29	0	18	0	18
10	Multilateral development banks	0	0	0	0	0	0
11	International organisations	0	0	0	0	0	0
12	Institutions	73	25	48	2	2	0
13	Corporates	2,671	2,661	10	731	719	12
14	Retail	826	321	505	5	5	1
15	Secured by mortgages on immovable property	1,878	1,206	672	0	0	0
16	Exposures in default	89	74	15	8	8	0
17	Items associated with particularly high risk	0	0	0	10	10	0
18	Covered bonds	0	0	0	2	0	2
19	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	0
20	Collective investment undertakings	0	0	0	0	0	0
21	Equity exposures	78	47	31	96	96	0
22	Other exposures	167	167	0	0	0	0
23	**Total SACR**	**16,289**	**13,020**	**3,270**	**3,033**	**2,486**	**546**
24	**Total**	**46,611**	**35,989**	**10,622**	**28,319**	**24,170**	**4,149**

EU CRB-C_cont.: Geographical breakdown of exposures by exposure class

		Net exposure value					
	Exposure class	**Asia**	**thereof...**		**Latin America**	**Other regions**	**Total**
	€m		**China**	**Others**	**(incl. Mex.)**		
1	Central governments or central banks	4,550	410	4,140	345	780	27,991
2	Institutions	11,560	3,664	7,896	3,217	2,305	40,136
3	Corporates	6,435	2,524	3,911	2,084	1,213	201,022
3a	thereof SMEs	139	8	131	1	268	12,752
3b	thereof specialised lending	85	9	76	226	491	23,907
3c	thereof other	6,211	2,507	3,704	1,856	454	164,364
4	Retail	361	94	267	56	73	125,348
4a	thereof secured by mortgages / SMEs	0	0	0	0	0	1,081
4b	thereof secured by mortgages / non-SMEs	141	35	106	24	20	69,943
4c	thereof qualifying revolving	28	4	24	16	14	13,066
4d	thereof other / SME	35	18	17	0	1	12,893
4e	thereof other / non-SMEs	156	36	120	17	37	28,365
5	Equity exposures IRB	0	0	0	0	0	0
	Other non-credit obligation assets	1	0	1	0	486	7,295
6	**Total IRB approach**	**22,908**	**6,692**	**16,216**	**5,702**	**4,857**	**401,793**
7	Central governments or central banks	0	0	0	29	0	48,159
8	Regional governments or local authorities	140	0	140	1	0	21,327
9	Public sector entities	0	0	0	0	0	4,569
10	Multilateral development banks	0	0	0	0	234	458
11	International organisations	0	0	0	0	219	219
12	Institutions	0	0	0	18	512	2,209
13	Corporates	2	0	2	388	95	8,431
14	Retail	12	4	8	2	3	8,323
15	Secured by mortgages on immovable property	0	0	0	0	0	2,084
16	Exposures in default	2	0	2	0	0	294
17	Items associated with particularly high risk	1	0	1	6	0	89
18	Covered bonds	0	0	0	0	0	4
19	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	0
20	Collective investment undertakings	0	0	0	0	0	2,691
21	Equity exposures	40	0	40	0	1	970
22	Other exposures	0	0	0	7	138	2,994
23	**Total SACR**	**197**	**4**	**193**	**451**	**1,201**	**102,820**
24	**Total**	**23,104**	**6,696**	**16,408**	**6,153**	**6,058**	**504,612**

EU CRB-D: Concentration of exposures by industry

	Exposure class €m	Production and manufacturing industry	Energy and water supply	Wholesale and retail trade; repairs	Transport and telecommu-nication	Other services	Banks	Other financial industry and insurances	Real estate activities	Public admin. and defence, compulsory social security	Private households	Others	Total
1	Central governments or central banks	0	96	0	1	190	22,081	106	89	5,414	14	1	27,991
2	Institutions	1	831	1	80	93	31,978	1,204	761	5,184	2	1	40,136
3	Corporates	91,782	18,456	23,587	18,857	9,330	66	13,247	19,865	1	4,648	1,182	201,022
3a	thereof SMEs	5,874	269	2,374	502	653	0	725	1,912	0	261	182	12,752
3b	thereof specialised lending	3,181	5,024	470	3,099	1,532	19	2,148	8,303	0	32	99	23,907
3c	thereof other	82,727	13,162	20,744	15,257	7,145	47	10,374	9,651	1	4,355	901	164,364
4	Retail	7,109	108	4,644	1,068	6,865	2	1,355	7,649	0	96,050	498	125,348
4a	thereof secured by mortgages / SMEs	26	0	16	3	51	0	10	438	0	535	3	1,081
4b	thereof secured by mortgages / non-SMEs	1,422	11	999	213	3,394	0	713	3,511	0	59,493	187	69,943
4c	thereof qualifying revolving	0	0	0	0	0	0	0	0	0	13,066	0	13,066
4d	thereof other / SME	4,793	87	2,796	660	1,042	2	252	1,823	0	1,255	183	12,893
4e	thereof other / non-SMEs	869	9	833	191	2,378	0	381	1,877	0	21,701	126	28,365
5	Equity exposures IRB	0	0	0	0	0	0	0	0	0	0	0	0
	Other non-credit obligation assets	255	0	1	1	5,872	3	8	1	90	1,063	0	7,295
6	**Total IRB approach**	**99,147**	**19,491**	**28,232**	**20,007**	**22,351**	**54,131**	**15,920**	**28,365**	**10,689**	**101,777**	**1,682**	**401,793**
7	Central governments or central banks	0	0	0	0	0	3,996	0	0	43,582	581	0	48,159
8	Regional governments or local authorities	0	0	0	0	11	0	0	0	21,290	11	14	21,327
9	Public sector entities	0	126	11	568	706	2,112	0	104	933	0	9	4,569
10	Multilateral development banks	0	0	0	0	0	224	234	0	0	0	0	458
11	International organisations	0	0	0	0	0	0	0	0	219	0	0	219
12	Institutions	18	0	0	0	10	2,134	22	0	24	1	0	2,209
13	Corporates	874	187	237	431	2,214	40	2,884	464	449	529	120	8,431
14	Retail	79	11	42	13	224	1	24	116	0	7,801	11	8,323
15	Secured by mortgages on immovable property	8	0	27	17	49	0	20	38	0	1,918	7	2,084
16	Exposures in default	28	23	2	1	10	0	126	18	0	86	0	294
17	Items associated with particularly high risk	0	0	0	0	0	0	42	47	0	0	0	89
18	Covered bonds	0	0	0	0	0	4	0	0	0	0	0	4
19	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	0	0	0	0	0	0	0
20	Collective investment undertakings	0	0	0	0	0	615	2,076	0	0	0	0	2,691
21	Equity exposures	159	41	0	159	6	0	357	208	0	37	2	970
22	Other exposures	65	0	0	0	0	72	19	35	2,576	225	0	2,994
23	**Total SACR**	**1,232**	**388**	**318**	**1,189**	**3,232**	**9,199**	**5,804**	**1,030**	**69,073**	**11,190**	**164**	**102,820**
24	**Total**	**100,379**	**19,878**	**28,551**	**21,196**	**25,583**	**63,330**	**21,724**	**29,394**	**79,763**	**112,967**	**1,846**	**504,612**

EU CRB-E: Maturity of exposures by exposure classes

		a	b	c	d	e	f
		Net exposure value					
	€m	On demand	≤ 1 year	> 1 year ≤ 5 years	> 5 years	No stated maturity	Total
1	Central governments or central banks	21,882	1,940	2,598	1,571	0	27,991
2	Institutions	7,995	15,708	8,187	8,246	0	40,136
3	Corporates	54,655	41,469	73,788	31,111	0	201,022
4	Retail	27,953	6,436	12,657	78,302	0	125,348
5	Equity exposures IRB	0	0	0	0	0	0
	Other non-credit obligation assets	7,007	288	0	0	0	7,295
6	**Total IRB approach**	**119,492**	**65,840**	**97,230**	**119,230**	**0**	**401,793**
7	Central governments or central banks	27,468	4,628	5,879	10,184	0	48,159
8	Regional governments or local authorities	845	3,122	4,729	12,630	0	21,327
9	Public sector entities	134	1,224	2,035	1,176	0	4,569
10	Multilateral development banks	0	0	224	234	0	458
11	International organisations	0	52	167	0	0	219
12	Institutions	1,646	284	176	104	0	2,209
13	Corporates	3,486	738	1,000	3,207	0	8,431
14	Retail	3,916	850	1,518	2,038	0	8,323
15	Secured by mortgages on immovable property	1,206	13	71	795	0	2,084
16	Exposures in default	122	5	25	142	0	294
17	Items associated with particularly high risk	89	0	0	0	0	89
18	Covered bonds	0	0	2	2	0	4
19	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	0
20	Collective investment undertakings	0	0	0	2,691	0	2,691
21	Equity exposures	761	0	209	0	0	970
22	Other exposures	401	9	7	2,576	0	2,994
23	**Total SACR**	**40,074**	**10,925**	**16,041**	**35,780**	**0**	**102,820**
24	**Total**	**159,566**	**76,765**	**113,271**	**155,010**	**0**	**504,612**

Loan loss provisions for default risks

Responsibility for processing non-performing loans for the core segments Private and Small Buisiness Customers and Corporate Clients lies with Group Intensive Care, while Group Credit Risk Management Non-Core is responsible for the Asset & Capital Recovery (ACR) segment. These two divisions bring together the specific expert knowledge needed to support customers undergoing restructuring and to successfully process terminated commitments including collateral realisation.

The lending risks reported under the IFRS category LaR (loans and receivables) are taken into account by forming specific loan loss provisions (SLLP), portfolio loan loss provisions (PLLP) and general loan loss provisions (GLLP) for on- and off-balance-sheet claims on the basis of the rules and regulations according to IAS 37 and IAS 39.

When determining loan loss provisions, the fundamental criteria include whether the claims are in default or not and whether the claims are insignificant (exposure up to €5m) or significant (exposure over €5m)[1].

All claims which are in default under the Basel regulations are defined as in default or non-performing. The following events are decisive in determining the default of a customer:

[1] Für Commerzbank Z.r.t. the threshold amout was adjusted as at 30 September 2017 to an equivalent value of €1m.

- Imminent insolvency or over 90 days past due.
- The Bank is assisting in the financial rescue measures of the customer with or without restructuring contributions.
- The Bank has demanded repayment of its claim.
- The customer becomes insolvent.

A portfolio loan loss provision (PLLP impaired) is recognised for insignificant defaulted claims using internal parameters. For significant defaulted claims, the net present value of the expected future cash flows is used to calculate both specific valuation allowances and specific loan loss provisions (SLLP). The cash flows include both the expected payments and the expected proceeds from realising collateral and other recoverable cash flows. The loan loss provision is equal to the difference between the claim amount and the net present value of all the expected cash flows. The general loan loss provision (GLLP and PLLP non-impaired) for on-balance-sheet and off-balance-sheet transactions is calculated at individual transaction level using internal default parameters (PD, LGD) and taking the LIP factor into account (LIP = loss identification period). Country risks are not accounted for separately under IFRS but are included for the purposes of the SLLP calculation in the individual cash flow estimates and given a lump-sum value in the LGD parameters when calculating portfolio loan loss provisions.

Impairment tests are also performed for securities classified as available for sale (AfS) and loans and receivables (LaR) if the fair value is below the amortised acquisition costs due to the credit rating. A review is conducted at each balance sheet date to determine whether there is objective evidence (trigger event) of impairment and whether this case of loss will have an impact on the expected cash flows. The trigger event review is based on the creditworthiness of the borrower/issuer or the issue rating, e.g. for Pfandbriefe (German covered bonds) and ABS transactions. Trigger events may include:

- Past due/default in payments of interest or principal on the part of the issuer/borrower.
- Restructuring of the debt instrument due to significant financial difficulties on the part of the issuer (of a security) or debtor (of a loan).
- Increased probability of a restructuring procedure.
- Increased probability of insolvency.

The trigger events are operationalised through a combination of rating and fair value changes. To achieve this, the individual securities are split into three groups (listed and unlisted equity instruments and debt instruments) that form the basis for further individual impairment reviews. If trigger events are found, an impairment is recognised in the income statement and the corresponding claim is deemed to be non-performing. For AfS positions, if no trigger event is found but the fair value is below the amortised acquisition cost, the revaluation reserve is charged. The impairment amount is determined from the difference between the amortised acquisition cost and the fair value.

The total amount of the loan loss provisions, insofar as they relate to claims on the balance sheet, is deducted from the respective balance sheet items. Provision for risks in off-balance-sheet business – guarantees, endorsement liabilities, lending commitments – is shown as other provisions for specific/portfolio risks in lending business.

In accordance with the Group's write-down policy, impaired positions are written down to the net present value of the claim two years after the notice of termination using existing loan loss provisions and valuation allowances (SLLPs/PLLPs impaired). Amounts recovered on claims written down are recognised in the income statement.

The tables on loan loss provisions below show the gross carrying values of all risk positions in default and not in default in IFRS category LaR, including the associated stock of credit risk adjustments, the relevant write-offs and the credit risk adjustment charges of the period (full year).

The gross carrying values for risk positions not in default also include loans that are past due by at least one day up to 90 days but are not defined as in default by virtue of the minimum threshold (2.5% of the limit or €100).

Commerzbank bases its definition of non-performing and past due claims on its accounting. Pursuant to section 315a.1 of the German Commercial Code, the Commerzbank Group issues consolidated financial statements based on International Financial Reporting Standards (IFRS). Credit risk mitigation techniques which can mitigate risks for the purposes of determining the capital requirement are not relevant for the determination of the claim amount for accounting procedures.

The information is structured by risk exposure class (table EU CR1-A), industry (table EU CR1-B) and geography (table EU CR1-C). The following definitions are used:

- Specific credit risk adjustments are the sum of specific loan loss provisions for significant non-performing claims, determined on the basis of individual cash flow estimates (SLLP on-balance).
- The column general loan loss provision comprises the following positions:
  - Holdings of portfolio loan loss provisions for performing, insignificant claims, calculated on a portfolio basis using internal risk parameters (PLLP impaired on-balance).
  - Total amount of provisions for non-performing, significant and insignificant off-balance-sheet claims. These are calculated in line with on-balance-sheet claims (SLLP and PLLP impaired off-balance).
  - Sum of portfolio loan loss provisions relating to performing claims (GLLP/PLLP non impaired (NI) on-/off-balance).
- The column accumulated write-offs is the balance of write-ups and write-downs during the financial year.

The gross carrying values of defaulted risk positions come to €6.0bn. In addition to the loan loss provisions presented in the tables, the gross carrying values are also offset by collateral, which is taken into account accordingly in the calculation of the SLLP, PLLP and GLLP (specific and general loan loss provisions). During the period under review, recoveries on written-down assets of €222m reduced the expenses for credit risk adjustments for loan loss provisions.

The breakdown by gross carrying values reflects the Commerzbank Group's focus on Germany and selected markets throughout Europe. This means that the vast majority of the loan loss provisions are attributable to borrowers based in these regions.

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

		a	b	c	d	e	f	g
	€m	Gross carrying values of		Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs	Credit risk adjustment charges of the period	Net values (a+b-c-d)
		defaulted exposures	non-defaulted exposures					
1	Central governments or central banks	0	27,993	0	2	0	0	27,991
2	Institutions	116	40,080	19	41	4	–12	40,136
3	Corporates	4,064	199,119	1,898	263	1,033	–385	201,022
4	thereof SMEs	561	12,448	242	16	55	–7	12,752
5	thereof specialised lending	1,731	23,121	791	154	554	–385	23,907
	thereof other	1,773	163,550	865	93	424	8	164,364
6	Retail	1,247	124,794	592	101	334	–127	125,348
8	thereof secured by mortgages / SMEs	46	1,055	20	0	5	–3	1,081
9	thereof secured by mortgages / non-SMEs	443	69,673	144	29	27	–12	69,943
10	thereof qualifying revolving	9	13,076	5	14	7	–38	13,066
12	thereof other / SME	341	12,767	192	23	116	15	12,893
13	thereof other / non-SMEs	408	28,223	231	35	179	–88	28,365
14	Equity exposures IRB	0	0	0	0	0	0	0
	Other non-credit obligation assets	19	7,276	0	0	0	0	7,295
15	**Total IRB approach**	**5,447**	**399,262**	**2,510**	**406**	**1,372**	**–523**	**401,793**
16	Central governments or central banks	0	48,159	0	0	0	0	48,159
17	Regional governments or local authorities	0	21,327	0	0	2	0	21,327
18	Public sector entities	0	4,569	0	0	1	0	4,569
19	Multilateral development banks	0	458	0	0	0	0	458
20	International organisations	0	219	0	0	0	0	219
21	Institutions	0	2,209	0	0	0	0	2,209
22	Corporates	0	8,435	4	1	12	–1	8,431
23	thereof SMEs	0	504	1	0	0	0	503
24	Retail	0	8,384	28	33	24	31	8,323
25	thereof SMEs	0	53	8	0	23	0	45
26	Secured by mortgages on immovable property	0	2,085	1	0	0	0	2,084
27	thereof SMEs	0	12	0	0	0	0	12
28	Exposures in default[1]	525	0	228	3	5	60	294
29	Items associated with particularly high risk	0	89	0	0	0	0	89
30	Covered bonds	0	4	0	0	0	0	4
31	Claims on institutions and corporates with a short-term credit assessment	0	0	0	0	0	0	0

EU CR1-A_cont.: Credit quality of exposures by exposure class and instrument

		a	b	c	d	e	f	g
	€m	Gross carrying values of defaulted exposures	Gross carrying values of non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs	Credit risk adjustment charges of the period	Net values (a+b-c-d)
32	Collective investment undertakings	0	2,691	0	0	0	0	2,691
33	Equity exposures	0	970	0	0	0	0	970
34	Other exposures	0	2,994	0	0	0	0	2,994
35	**Total SACR**	**525**	**102,593**	**261**	**37**	**44**	**91**	**102,820**
36	**Total**	**5,972**	**501,855**	**2,771**	**443**	**1,415**	**–432**	**504,612**
37	of which loans	5,261	295,389	2,695	348	1,415	–450	297,606
38	of which debt securities	105	32,560	0	0	0	0	32,666
39	of which off-balance-sheet exposures	303	36,140	63	12	0	24	36,367

[1] According to EBA-Q&A_2017_3481, for the gross carrying values of the first column „a“ of exposures in default (in line 28) in application of Art. 112(j) CRR, the original asset class should be named in addition. To keep the consistency of the table in regard of totals formation under column „g: net values“ or in line 35 „Total SACR“, the required assignment is given below as follows:
The gross carrying values of the exposures in default (row 28) in SACR in the value of €525m with a value of €372m evolved from positions in the asset class „corporates“ (line 22) and with a value of €153m from the asset class „retail“ (line 24) in the SACR.

EU CR1-B: Credit quality of exposures by industry or counterparty types

		a	b	c	d	e	f	g
	€m	Gross carrying values of defaulted exposures	Gross carrying values of non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs	Credit risk adjustment charges of the period	Net values (a+b-c-d)
1	Production and manufactoring industry	1,525	99,664	727	82	406	–195	100,379
2	Energy and water supply	210	19,774	92	13	10	21	19,878
3	Wholesale and retail trade; repairs	735	28,050	202	33	118	–82	28,551
4	Transport and telecommunication	1,026	20,780	489	121	351	–254	21,196
5	Other financial industry and insurances	201	25,771	374	15	34	170	25,583
6	Banks	47	63,330	8	40	49	–16	63,330
7	Other financial industry and insurances	428	21,409	104	8	3	–7	21,724
8	Real estate activities	700	28,921	198	29	178	–39	29,394
9	Public administration and defence, compulsory social security	1	79,764	0	2	0	1	79,763
10	Private households	1,038	112,582	555	98	219	–34	112,967
11	Others	61	1,810	22	2	47	3	1,846
12	**Total**	**5,972**	**501,855**	**2,771**	**443**	**1,415**	**–432**	**504,612**

EU CR1-C: Credit quality of exposures by geography

		a	b	c	d	e	f	g
	€m	Gross carrying values of defaulted exposures	Gross carrying values of non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs	Credit risk adjustment charges of the period	Net values (a+b-c-d)
1	Western Europe	4,148	392,339	1,757	365	1,222	–432	394,366
2	thereof Germany	2,771	286,439	1,397	310	854	–238	287,503
3	Switzerland	3	25,134	0	3	6	–1	25,133
4	Great Britain	97	20,335	20	7	0	15	20,405
5	Italy	255	13,261	28	4	36	–25	13,484
6	France	56	11,720	14	6	19	–10	11,756
7	Netherlands	181	6,096	21	5	7	–18	6,251
8	Spain	66	4,963	23	4	18	7	5,002
9	Others	719	24,392	252	27	283	–162	24,831
10	Eastern Europe	1,281	46,149	809	10	115	48	46,611
11	thereof Poland	1,013	35,599	622	1	74	33	35,989
12	Others	268	10,550	187	9	41	15	10,622
13	North America	93	28,237	3	7	26	1	28,319
14	thereof USA	93	24,088	3	7	26	1	24,170
15	Others	0	4,149	0	0	0	0	4,149
16	Asia	140	23,059	71	24	5	–7	23,104
17	thereof China	0	6,703	0	7	0	2	6,696
18	Others	139	16,356	70	17	5	–9	16,408
19	Latin America	132	6,139	102	15	24	–19	6,153
20	Other regions	178	5,932	30	22	24	–23	6,058
21	**Total**	**5,972**	**501,855**	**2,771**	**443**	**1,415**	**–432**	**504,612**

EU CR1-D: Ageing of past-due exposures

		a	b	c	d	e	f
		Gross carrying values					
	€m	**≤ 30 days**	**> 30 days ≤ 60 days**	**> 60 days ≤ 90 days**	**> 90 days ≤ 180 days**	**> 180 days ≤ 1 year**	**> 1 year**
1	Loans and advances	2,940	110	3,163	386	572	1,813
2	Debt securities	0	0	85	0	0	0
3	**Total exposure**	**2,940**	**110**	**3,248**	**386**	**572**	**1,813**

EU CR1-E: Non-performing and forborne exposures

		a	b	c	d	e	f	g	h	i	j	k	l	m
		Gross carrying values of performing and non-performing exposures							**Accumulated impairment and provisions and negative fair value adjustments due to credit risk**				**Collaterals and financial guarantees received**	
			Of which performing but past due > 30 days and ≤ 90 days	**Of which performing forborne**	**Of which non-performing**				**On performing exposures**		**On non-performing exposures**		**On non-performing exposures**	**Of which forborne exposures**
	€m					**Off which defaulted**	**Off which impaired**	**Of which forborne**		**Of which forborne**		**Of which forborne**		
010	Debt securities	55,711	85	0	85	85	85	0	–15	0	–36	0	0	0
020	Loans and advances	318,216	3,273	3,467	5,870	5,371	5,371	1,856	–447	–113	–2,672	–720	1,773	1,304
030	Off-balance-sheet exposures	172,844		507	626	577		150	99	4	112	37	0	29

Table EU CR2-A below only shows total credit risk adjustments and changes therein relating to the lending business. Only claims or loan commitments under the IFRS category LaR and their corresponding loan loss provisions are included in the tables. Write-downs on securities are not recognised in loan loss provisions but in "Other realised profit or loss and net remeasurement gain or loss". Note (11) to the Group financial statements in the Annual Report 2017 provides more details on this.

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

		a	b
	€m	**Accumulated specific credit risk adjustment**	**Accumulated general credit risk adjustment**
1	**Opening balance**	**2,664**	**1,431**
2	Increases due to amounts set aside for estimated loan losses during the period	1,234	381
3	Decreases due to amounts reversed for estimated loan losses during the period	–494	–284
4	Decreases due to amounts taken against accumulated credit risk adjustments	–952	–187
5	Transfers between credit risk adjustments	0	0
6	Impact of exchange rate differences	23	–18
7	Business combinations, including acquisitions and disposals of subsidiaries	0	0
8	Other adjustments	–11	40
9	**Closing balance**	**2,464**	**1,363**
10	Recoveries on credit risk adjustments recorded directly to the statement of profit or loss	0	0
11	Specific credit risk adjustments directly recorded to the statement of profit or loss	0	0

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

		a
	€m	**Gross carrying value of defaulted exposures**
1	**Opening balance**	**6,914**
2	Loans and debt securities that have defaulted or impaired since the last reporting period	658
3	Returned to non-defaulted status	–892
4	Amounts written off	–1,485
5	Other changes	374
6	**Closing balance**	**5,569**

According to Art. 452 g) and i) CRR, the components of the realised losses have to be reported for the year under review and to be compared to the expected losses for the exposures in AIRB.

Table addCR1 shows the realised losses related to the lending business over the reporting period in detail. Losses incurred in the lending business refer to direct write-downs (net of write-ups) and the utilisation of valuation allowances for claims classified as IRBA positions according to the CRR. Amounts recovered on written-down claims reduce the realised loss.

In addition, table addCR2 shows the expected losses of the preceding period for the non-defaulted portfolio.

addCR1: Realised losses in the lending business 2017

Exposure class €m	Utilisation of risk provision	Direct write-downs	Write-ups	Recoveries on written-down assets	Total
Central governments or central banks	0	0	0	0	0
Institutions	2	3	0	1	3
Corporates	561	475	4	189	843
thereof SMEs	35	20	1	0	55
thereof specialised lending	220	334	0	0	554
thereof other	306	121	4	189	234
Retail	255	83	3	32	303
thereof SMEs	72	46	1	0	116
thereof secured by mortgages	28	4	0	0	32
thereof qualifying revolving	3	4	0	0	7
thereof other	152	29	1	32	148
Gesamt 2017	**818**	**561**	**7**	**222**	**1,150**
Gesamt 2016	**994**	**236**	**6**	**195**	**1,029**

addCR2: Expected and realised losses in the lending business since 2014

Exposure class €m	Expected loss as at 31.12.2016	Realised loss 2017	Expected loss as at 31.12.2015	Realised loss 2016	Expected loss as at 31.12.2014	Realised loss 2015
Central governments or central banks	34	0	34	0	29	0
Institutions	100	3	123	13	147	97
Corporates	796	843	998	854	960	1,834
thereof SMEs	53	55	66	54	61	87
thereof specialised lending	537	554	726	535	649	1,474
thereof other	206	234	206	265	251	273
Retail	217	303	221	162	252	232
thereof SMEs	64	116	61	143	67	80
thereof secured by mortgages	62	32	87	17	97	62
thereof qualifying revolving	14	7	15	2	20	2
thereof other	76	148	58	0	68	88
Total	**1,148**	**1,150**	**1,375**	**1,029**	**1,388**	**2,163**

For the direct comparison of the realised loss to the expected loss it has to be considered that the realised loss comprises the utilisation of risk provisions and write-downs of defaulted assets across several reporting periods whereas the expected loss relates to a one-year horizon only.

Unlike in the Annual Report, the expected loss amounts reported in this Disclosure Report do not include SACR or securitisation positions. Also, due to the change to SACR (permanent partial use pursuant to Article 150 CRR) in 2009, the asset class Investments is not shown here.

Investments in the banking book

Investment risks or shareholder risks are potential losses arising from the provision of equity capital to investments as a result of a fall in their value. They can be caused by general market fluctuations or company-specific factors.

Composition of investments

Commerzbank's portfolio of holdings is broken down in accordance with its significance to business policy. The bulk of the investments held as financial assets (banking book) and holdings in consolidated companies are designed to further the Bank's business objectives by supporting business lines/segments in the Bank (segment-supporting investments) or by having a strategic management or service function for the Group as a whole (other strategic investments).

There are also other non-strategic investments, some of which are allocated to the Assets & Capital Recovery segment. A divestment concept is applied here, the aim of which is to optimise Commerzbank's market value, capital and income statement under appropriate market conditions.

Risk management

The investment risks are managed centrally as part of the ongoing management and monitoring of Commerzbank's holdings by the Group Finance department and locally by the segments. The central monitoring is primarily concentrated on the non-strategic investments, while the strategic investments that form part of the Bank's core business are controlled on a decentralised basis by the Commerzbank segments responsible for them. The strategic investments are mainly majority holdings.

Under the "three lines of defence" principle, aimed at protecting against undesirable risks and set out by Commerzbank in the Group Risik Strategy, the respective operational segments responsible therefore represent the first line of defence for investment risks, while Group Finance, as the area responsible for the investment risk strategy, represents the second line of defence.

Regulatory valuation of investments

The Commerzbank Group and accordingly the group companies included in the disclosure are, as IRBA banks as defined in Article 147 CRR, generally obliged to value investments in accordance with the IRBA rules. For investments entered into prior to 1 January 2008, Commerzbank has opted to apply grandfathering. These investment positions are temporarily excluded from the IRBA and treated in accordance with the SACR rules. They are given a risk weighting of 100%. The CRR also allows items to be permanently exempted from the IRBA. Since 31 December 2009 Commerzbank has applied the partial use option pursuant to section 70 sentence 1 no. 9b SolvV and Article 150 CRR, and uses the SACR permanently to value all investment positions which do not fall under the above-mentioned temporary grandfathering option. Investments that are associated with particularly high risk according to the definition under Article 128 CRR, such as private equity investments or venture capital investments, are recognised in the corresponding SACR asset class.

Commercial valuation and accounting

Investments and shares in the banking book comprise equity instruments classified as available for sale (AfS) and those reported in the financial statements as fully consolidated or using the at equity method. All equity instruments not held in the trading portfolio are therefore accounted for in this category.

Investments classified as AfS are reported at their fair value if it is available. Differences between historic costs and fair value are reported as equity capital without effect on net income. Equity instruments that are unlisted or listed but not actively traded are recognised at historic cost if their fair value is not reliably determinable.

Listed investments are continuously monitored with regard to their market price development. External analysts' opinions and share price forecasts (consensus forecasts) are included in the risk assessment. Listed holdings are monitored by means of impairment tests carried out at least quarterly by Group Finance in accordance with the impairment policy and tested for any significant qualitative or quantitative indicators (trigger events) of impairment. As soon as there are any indications of significant or lasting impairment, unrealised losses are written down.

Risks arising from unlisted holdings are subject to regular monitoring involving a database-supported year-end valuation, a monitoring of trigger events for relevant holdings to each balance sheet reporting date and special monitoring of investments classified as critical. Various valuation methods (e.g. capitalised earnings value, net asset value, liquidation value) are used to quantify the risks, depending on the book value, status (e.g. active, inactive, in liquidation) and type of business activity (e.g. operational, property holding company, holding) of the investment. If the intention is to sell the investment, it will be written down, if necessary, to a lower expected selling price; any appreciation in value would be reported in the revaluation reserve without effect on net income. For companies valued using the equity method, the valuation is equal to the proportionate IFRS equity capital.

Quantitative information on investments

This section covers investments as defined in Article 112 p) CRR. This means that only equity investments that are not consolidated for regulatory purposes but relate to the companies covered by this report are shown. The definition of an investment in CRR is wider than the usual accounting definition. For example, shares in limited companies (GmbHs), profit-sharing certificates with equity characteristics, promissory notes and derivative positions whose underlying is an investment position have to be classified as investments for regulatory purposes. Classical forms of investments nevertheless make up the majority of this CRR asset class.

The table below shows the book value and fair value of the investment instruments under IFRS as reported in the financial statements for the investment groups relevant to the Group's objectives and strategy.

INV1: Valuation of investment instruments

	Book value (IFRS)		Fair value		Market value (listed positions)	
Investment group | €m	**2017**	**2016**	**2017**	**2016**	**2017**	**2016**
Segment-supporting investments	295	448	295	448	7	5
thereof listed positions	2	2	2	2	7	5
thereof unlisted positions	293	445	293	445	0	0
Other strategic investments	35	35	35	35	0	0
Other investments	481	358	481	358	0	0
Funds and certificates	0	0	0	0	0	0
Investments total	**811**	**840**	**811**	**840**	**7**	**5**

For listed positions the market value is given as well. For listed investments the book value under IFRS is their historic costs. Differences between book value under IFRS and fair value of listed investments result from the revaluation reserve.

For unlisted companies the book values under IFRS are used as fair value. Special purpose vehicles (SPVs) are not shown as they are not investments pursuant to regulatory definitions. The positions shown under Other strategic investments are exclusively unlisted positions. Only €0.2m of the Other investments are listed positions. All unlisted positions are classified as adequately diversified investment portfolios.

Shares in investment funds are allocated to the investment group Funds and certificates if the precise composition of the investment fund is not known and an average risk weighting supplied by the investment company is not used for capital adequacy purposes. Only shares in investment funds that invest wholly or partly in investment instruments are relevant. Therefore, shares in investment funds that are solely invested in fixed-income securities (e.g. bond funds) are not included here.

INV2: Realised and unrealised profits/losses from investment instruments

€m	Realised profit/loss from sale/liquidation	Unrealised revaluation profit/loss (accounted for in CET1 capital)
2017	**105**	**45**
2016	130	103

B. Counterparty credit risk (CCR)

Risk management

Counterparty credit risk (default risk from counterparty default risk) is defined as the risk of losses sustained or profits foregone due to the default of a counterparty in the context of a derivative or securities financing transaction. In addition to market price risks, derivative positions also give rise to default risks when a claim arises against the counterparty in the form of positive market values.

Commerzbank also looks at what is known as correlation risk (wrong way risk). This occurs when a counterparty's exposure and credit quality (rating) are negatively correlated. Wrong way risk is therefore an additional risk source, as the credit exposure is generally measured independently from the counterparty's creditworthiness. Commerzbank has a clear definition of specific and general wrong way risk. There are guidelines to assist in identifying and quantifying wrong way risk. They also set out how the exposure must be adjusted to allow for the wrong way risk. In the case of secured transactions, the potential relationship between the performance of the collateral and the credit rating of the counterparty also has to be considered and captured according to the Commerzbank collateral matrix.[1]

The derivative positions shown in the tables below do not include securitisation positions as defined in the CRR as these are shown in the securitisations chapter. This means that interest rate and currency swaps or credit derivative transactions entered into with special-purpose securitisation companies are not included.

Risk appetite is operationally structured in the Group Risik Strategy through a consistent management system with limits, benchmarks for risk strategy positioning and supplementary guidelines. The specific risk appetite for the lending business is derived from this and structured further in the credit risk strategy. The risk strategy focus of the credit risk strategy thus adopts the cross-segment benchmarks of the Group Risik Strategy that are relevant for the default risk and specifies them specifically for the lending business of the individual segments. Furthermore the limit concept of the Group Risik Strategy is supplemented by quantitative guidelines to limit risk concentrations and weaker credit ratings. Downstream policies operationalise the risk appetite at the level of selected sub-portfolios.

In order to minimise both the economic and the regulatory credit risk arising from these instruments, Commerzbank enters into master agreements (bilateral netting agreements) such as the 2002 ISDA Master Agreement or the German Master Agreement for Financial Futures with the respective counterparties. By means of such bilateral netting agreements, the positive and negative market values of the derivatives contracts included under a master agreement can be offset against one another, and the regulatory add-ons for future risks of these products can be reduced. This netting process reduces the credit risk to a single net claim on the contracting party (close-out netting). Table EU CCR5-A contains a detailed presentation of netting effects. The netting policy sets out the requirements for the external and internal netting of derivatives and repo transactions. For Repo/lending transactions Commerzbank makes a distinction between "full netting" and "single transaction netting". Single transaction netting allows the netting of exposure and collateral in one transaction, while in full netting all transactions can be netted against each other.

For both regulatory reports and the internal measurement and monitoring of credit exposures, these risk-mitigating techniques are only used if Commerzbank considers them enforceable in the jurisdiction in question, should the counterparty become insolvent. Legal opinions are obtained from various international law firms in order to verify enforceability.

Similar to the master agreements are the collateral agreements (e.g. collateralisation annex for financial futures contracts, Credit Support Annex), which Commerzbank concludes with its business partners to secure the net claim or liability remaining after netting (receipt or provision of collateral). As a rule, this collateral management reduces credit risk by means of prompt, usually daily or weekly, measurement and adjustment of the customer exposure.

[1] Although in a regulatory context wrong way risk is normally mentioned in connection with counterparty risk, Commerzbank also considers it in connection with issuer risk (e.g. between the issuer of a bond and the guarantor).

Commerzbank only uses cash and securities pledged as collateral under master agreements. Table EU CCR5-B gives a detailed list of collateral provided and received.

Regulations for risk mitigation measures are stipulated by the "Guideline for Collateralized Trading". The guideline covers legal aspects such as types of master agreements and the enforceability of netting transactions and collateral under master agreements. It describes the requirements governing the netting of collateral and the structuring of Credit Support Annexes.

The basis for determining the netting amounts for the default risk from derivative positions is not the positive market values but instead the so-called credit equivalent values. To determine the assessment basis of derivative default risk positions, Commerzbank uses the internal model method (IMM) pursuant to Article 283 ff. CRR and the market valuation method pursuant to Article 274 CRR.

The approach to risk quantification under the IMM is generally based on a risk simulation which generates future market scenarios and creates portfolio valuations based on these scenarios. Netting and collateral agreements are taken into account.

In applying the internal model method, the EaD is defined per counterparty as the product of the alpha factor and the calculated effective expected positive exposure E*. Risks that are not taken into account when determining E*, correlation risks for example, are included in the capital adequacy calculation through the alpha factor. Banks can either estimate the alpha factor themselves or use the supervisory value of 1.4. Commerzbank does not estimate its own alpha factor, preferring instead to use the supervisory value to calculate exposure at default.

The credit equivalent values for the counterparty default risk from derivative positions and securities financing transactions – including exchange-traded derivatives – used to determine the (net) assessment basis amounted to €3,171m at the end of 2017 using the market valuation method and €17,984m using the internal model method (see table EU CCR1 – Analysis of counterparty credit risk by approach). The proportion of derivatives and securities financing transactions processed via central counterparties measured by EaD according to credit risk mitigation techniques was 14% as at the end of the year (see table EU CCR8 – Exposures to central counterparties (CCP). Table EU CCR4 provides an overview of the risk positions managed under the AIRB approach by exposure class and PD scale.

Credit equivalent values effectively correspond to the risk position values of balance-sheet default risk positions, as a credit conversion factor of 100% is applied to derivative positions.

All operative units, branches and subsidiaries are, subject to compliance with the regulations, authorised to use credit derivatives to hedge credit risks in loan portfolios (i.e. purchase of hedges). This allows them to hedge credit risks with a credit derivative without having to sell or assign the loan. A detailed list of credit derivatives can be found in table EU CCR6 – Credit derivatives exposures.

As part of the new regulatory requirements under Basel 3, since 2015 the Commerzbank Group has additionally calculated the capital requirements for credit value adjustments (CVA risk) according to Article 381 ff. CRR. For the portfolios of Commerzbank Aktiengesellschaft, CVA risk is calculated using the advanced method according to Article 383 CRR via a sensitivity-based approach. For the Group's subsidiaries, the standardised approach according to Article 384 CRR is applied. As at 31 December 2017 there were eligible hedges under Article 386 CRR: iTraxx Senior Financials of €440m and single name CDS of €129m. The capital requirements for CVA risk amounted to €334m (€4,169m RWA, see table EU CCR2 – CVA capital charge) as at 31 December 2017 for the Group.

Information on regulatory methods

EU CCR1: Analysis of CCR exposure by approach

		a	b	c	d	e	f	g
	€m	Notional	Replacement cost/current market value	Potential future credit exposure	EEPE	Multiplier	EaD post CRM	RWAs
1	Mark to market approach		2,091	827			3,171	1,307
2	Original exposure	0					0	0
3	Standardised approach		0			1.4	0	0
4	IMM (for derivatives and SFTs)				18,236	1.4	17,984	6,790
5	Of which securities financing transactions				5,266	1.4	5,271	289
6	Of which derivatives and long settlement transactions				12,970	1.4	12,713	6,501
7	Of which from contractual cross-product netting				0	1.4	0	0
8	Financial collateral simple method (for SFTs)						0	0
9	Financial collateral comprehensive method (for SFTs)						1,135	129
10	VaR for SFTs						0	0
11	**Total**							**8,226**

EU CCR2: CVA (credit value adjustments) capital charge

		a	b
	€m	Exposure value	RWAs
1	Total portfolios subject to the advanced method	4,326	3,633
2	(i) VaR component (including the 3× multiplier)		418
3	(ii) SVaR component (including the 3× multiplier)		3,215
4	All portfolios subject to the standardised method	304	536
EU4	Based on the original exposure method	0	0
5	**Total subject to the CVA capital charge**	**4,630**	**4,169**

EU CCR8: Exposures to CCP (central counterparties)

		a	b
	€m	**EaD post CRM**	**RWAs**
1	**Exposures to QCCPs (total)**		**217.7**
2	Exposures for trades at QCCPs (excluding initial margin and default fund contributions); of which	2,953	60.5
3	(i) OTC derivatives	1,098	23.4
4	(ii) Exchange-traded derivatives	1,067	21.3
5	(iii) SFTs	788	15.8
6	(iv) Netting sets where cross-product netting has been approved	0	0.0
7	Segregated initial margin	0	
8	Non-segregated initial margin	0	0.0
9	Prefunded default fund contributions	178	157.2
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); of which	0	0.0
13	(i) OTC derivatives	0	0.0
14	(ii) Exchange-traded derivatives	0	0.0
15	(iii) SFTs	0	0.0
16	(iv) Netting sets where cross-product netting has been approved	0	0.0
17	Segregated initial margin	0	
18	Non-segregated initial margin	0	0.0
19	Prefunded default fund contributions	0	0.0
20	Unfunded default fund contributions	0	0.0

Information by regulatory risk-weighting approach

EU CCR4: IRB approach – CCR exposures by portfolio and PD scale

		a	b	c	d	e	f	g
	PD scale	EaD post CRM	Average PD	Number of obligors	Average LGD	Average maturity[1]	RWAs	RWA density
		€m	%		%	years	€m	
Central governments or central banks	0.00 to < 0.15	660	0.03	50	35.66	2.7	71	10.7%
	0.15 to < 0.25	3	0.18	2	100.00	1.3	2	72.4%
	0.25 to < 0.50	71	0.29	11	31.50	0.5	23	32.2%
	0.50 to < 0.75	20	0.66	3	100.00	1.5	32	157.1%
	0.75 to < 2.50	2	0.98	8	100.00	2.2	4	200.0%
	2.50 to < 10.00	4	4.16	9	100.00	1.6	13	303.7%
	10.00 to < 100.00	0	89.34	1	100.00	1.0	0	132.3%
	100.00 (Default)	0	0.00	0	0.00	0.0	0	0.0%
	Subtotal	**760**	**0.14**	**84**	**37.73**	**2.5**	**144**	**18.9%**
Institutions	0.00 to < 0.15	7,176	0.05	299	54.06	1.7	1,656	23.1%
	0.15 to < 0.25	263	0.20	79	48.97	3.2	181	68.9%
	0.25 to < 0.50	591	0.36	141	51.52	2.0	455	77.0%
	0.50 to < 0.75	119	0.57	60	45.49	3.1	123	103.4%
	0.75 to < 2.50	142	1.37	122	47.80	2.2	173	121.7%
	2.50 to < 10.00	64	5.42	57	45.87	3.4	113	176.6%
	10.00 to < 100.00	77	18.40	6	42.50	3.9	215	280.0%
	100.00 (Default)	0	0.00	0	0.00	0.0	0	0.0%
	Subtotal	**8,432**	**0.31**	**764**	**53.33**	**1.8**	**2,917**	**34.6%**
Corporates TOTAL	0.00 to < 0.15	2,568	0.05	2,186	30.98	2.1	503	19.6%
	0.15 to < 0.25	2,541	0.18	1,418	40.63	1.8	930	36.6%
	0.25 to < 0.50	1,846	0.33	2,184	40.38	3.2	1,181	64.0%
	0.50 to < 0.75	533	0.57	1,122	35.96	2.8	366	68.6%
	0.75 to < 2.50	363	1.12	1,900	43.24	2.0	348	95.9%
	2.50 to < 10.00	90	4.02	666	36.97	1.7	104	116.1%
	10.00 to < 100.00	563	19.93	182	41.57	3.6	1,421	252.3%
	100.00 (Default)	10	100.00	56	77.45	2.6	1	6.1%
	Subtotal	**8,515**	**1.72**	**4,854**	**38.25**	**2.5**	**4,853**	**57.0%**
Corporates, thereof SMEs	0.00 to < 0.15	136	0.05	174	43.62	3.2	26	19.0%
	0.15 to < 0.25	91	0.18	123	58.20	4.0	58	63.7%
	0.25 to < 0.50	82	0.40	185	59.14	3.2	66	80.4%
	0.50 to < 0.75	26	0.60	124	55.15	2.8	23	87.8%
	0.75 to < 2.50	60	1.22	329	46.98	2.0	53	87.2%
	2.50 to < 10.00	27	4.41	159	46.08	2.7	35	126.8%
	10.00 to < 100.00	8	24.42	34	55.43	3.6	21	263.5%
	100.00 (Default)	7	100.00	13	77.45	2.6	0	0.0%
	Subtotal	**438**	**2.60**	**1,141**	**51.62**	**3.1**	**281**	**64.2%**
Corporates, thereof specialised lending	0.00 to < 0.15	0	0.00	0	0.00	0.0	0	0.0%
	0.15 to < 0.25	0	0.00	0	0.00	0.0	0	0.0%
	0.25 to < 0.50	0	0.00	0	0.00	0.0	0	0.0%
	0.50 to < 0.75	0	0.00	0	0.00	0.0	0	0.0%
	0.75 to < 2.50	0	0.00	0	0.00	0.0	0	0.0%
	2.50 to < 10.00	0	0.00	0	0.00	0.0	0	0.0%
	10.00 to < 100.00	0	0.00	0	0.00	0.0	0	0.0%
	100.00 (Default)	0	0.00	0	0.00	0.0	0	0.0%
	Subtotal	**0**	**0.00**	**0**	**0.00**	**0.0**	**0**	**0.0%**

[1] Parameter is not subject to the RWA calculation for retail business. Hence, in compliance with EBA/GL/2016/11, no disclosure for retail business.

EU CCR4_cont.: IRB approach – CCR exposures by portfolio and PD scale

		a	b	c	d	e	f	g
	PD scale	EaD post CRM €m	Average PD %	Number of obligors	Average LGD %	Average maturity[1] years	RWAs €m	RWA density
Corporates, thereof other	0.00 to < 0.15	2,432	0.07	919	30.98	2.1	477	19.6%
	0.15 to < 0.25	2,450	0.18	586	40.63	1.8	872	35.6%
	0.25 to < 0.50	1,764	0.33	907	40.38	3.3	1,115	63.2%
	0.50 to < 0.75	507	0.57	437	35.96	3.0	343	67.6%
	0.75 to < 2.50	303	1.12	621	43.24	2.1	296	97.6%
	2.50 to < 10.00	62	4.02	174	36.97	1.7	69	111.4%
	10.00 to < 100.00	555	19.93	57	41.57	4.7	1,400	252.2%
	100.00 (Default)	4	100.00	15	80.59	2.9	1	17.3%
	Subtotal	**8,077**	**1.67**	**3,713**	**37.53**	**2.5**	**4,572**	**56.6%**
Retail	0.00 to < 0.15	101	0.04	3988	43.28		6	6.1%
	0.15 to < 0.25	12	0.19	626	43.48		2	15.1%
	0.25 to < 0.50	11	0.34	620	44.44		2	21.6%
	0.50 to < 0.75	5	0.57	322	43.33		1	29.4%
	0.75 to < 2.50	61	1.18	2,140	44.14		31	51.5%
	2.50 to < 10.00	7	3.92	540	45.13		4	52.4%
	10.00 to < 100.00	1	16.96	62	44.12		1	72.6%
	100.00 (Default)	0	100.00	19	48.83		0	0.0%
	Subtotal	**198**	**0.90**	**4,199**	**45.80**		**48**	**24.0%**
Total	**0.00 to < 0.15**	**10,504**	**0.03**	**3,436**	**30.98**	**1.0**	**2,236**	**21.3%**
	0.15 to < 0.25	**2,818**	**0.18**	**1,103**	**40.63**	**1.0**	**1,115**	**39.5%**
	0.25 to < 0.50	**2,520**	**0.29**	**1,554**	**31.50**	**0.5**	**1,661**	**65.9%**
	0.50 to < 0.75	**677**	**0.57**	**785**	**35.96**	**1.0**	**521**	**77.0%**
	0.75 to < 2.50	**568**	**0.98**	**2,150**	**43.24**	**1.2**	**556**	**97.9%**
	2.50 to < 10.00	**165**	**3.92**	**669**	**36.97**	**1.0**	**234**	**141.7%**
	10.00 to < 100.00	**641**	**16.96**	**160**	**41.57**	**1.0**	**1,637**	**255.3%**
	100.00 (Default)	**11**	**100.00**	**47**	**48.83**	**2.6**	**1**	**5.9%**
	Total (all portfolios)	**17,905**	**0.98**	**9,900**	**45.41**	**2.2**	**7,961**	**44.5%**

[1] Parameter is not subject to the RWA calculation for retail business. Hence, in compliance with EBA/GL/2016/11, no disclosure for retail business.

EU CCR4_cont.: IRB approach – CCR exposures by retail sub-portfolio and PD scale

		a	b	c	d	e	f	g
	PD scale	EaD post CRM €m	Average PD %	Number of obligors	Average LGD %	Averag maturity years	RWAs €m	RWA density
Retail	0.00 to < 0.15	101	0.04	3,988	43.28		6	6.1%
	0.15 to < 0.25	12	0.19	626	43.48		2	15.1%
	0.25 to < 0.50	11	0.34	620	44.44		2	21.6%
	0.50 to < 0.75	5	0.57	322	43.33		1	29.4%
	0.75 to < 2.50	61	1.18	2,140	44.14		31	51.5%
	2.50 to < 10.00	7	3.92	540	45.13		4	52.4%
	10.00 to < 100.00	1	16.96	62	44.12		1	72.6%
	100.00 (Default)	0	100.00	19	48.83		0	0.0%
	Subtotal	**198**	**0.90**	**4,199**	**45.80**		**48**	**24.0%**
…secured by mortgages / SMEs	0.00 to < 0.15	0	0.00	0	0.00		0	0.0%
	0.15 to < 0.25	0	0.00	0	0.00		0	0.0%
	0.25 to < 0.50	0	0.00	0	0.00		0	0.0%
	0.50 to < 0.75	0	0.00	0	0.00		0	0.0%
	0.75 to < 2.50	0	0.00	0	0.00		0	0.0%
	2.50 to < 10.00	0	0.00	0	0.00		0	0.0%
	10.00 to < 100.00	0	0.00	0	0.00		0	0.0%
	100.00 (Default)	0	0.00	0	0.00		0	0.0%
	Subtotal	**0**	**0.00**	**0**	**0.00**		**0**	**0.0%**
…secured by mortgages / non-SMEs	0.00 to < 0.15	0	0.00	0	0.00		0	0.0%
	0.15 to < 0.25	0	0.00	0	0.00		0	0.0%
	0.25 to < 0.50	0	0.00	0	0.00		0	0.0%
	0.50 to < 0.75	0	0.00	0	0.00		0	0.0%
	0.75 to < 2.50	0	0.00	0	0.00		0	0.0%
	2.50 to < 10.00	0	0.00	0	0.00		0	0.0%
	10.00 to < 100.00	0	0.00	0	0.00		0	0.0%
	100.00 (Default)	0	0.00	0	0.00		0	0.0%
	Subtotal	**0**	**0.00**	**0**	**0.00**		**0**	**0.0%**
…qualified revolving	0.00 to < 0.15	0	0.00	0	0.00		0	0.0%
	0.15 to < 0.25	0	0.00	0	0.00		0	0.0%
	0.25 to < 0.50	0	0.00	0	0.00		0	0.0%
	0.50 to < 0.75	0	0.00	0	0.00		0	0.0%
	0.75 to < 2.50	0	0.00	0	0.00		0	0.0%
	2.50 to < 10.00	0	0.00	0	0.00		0	0.0%
	10.00 to < 100.00	0	0.00	0	0.00		0	0.0%
	100.00 (Default)	0	0.00	0	0.00		0	0.0%
	Subtotal	**0**	**0.00**	**0**	**0.00**		**0**	**0.0%**
…other / SMEs	0.00 to < 0.15	8	0.10	174	43.28		1	8.3%
	0.15 to < 0.25	9	0.19	273	43.48		1	13.8%
	0.25 to < 0.50	10	0.35	272	44.44		2	20.7%
	0.50 to < 0.75	4	0.61	145	43.33		1	28.0%
	0.75 to < 2.50	12	1.18	425	44.14		4	37.6%
	2.50 to < 10.00	7	3.92	265	45.13		3	51.9%
	10.00 to < 100.00	1	16.96	62	44.12		1	72.6%
	100.00 (Default)	0	100.00	19	48.83		0	0.0%
	Subtotal	**51**	**2.03**	**1,635**	**44.04**		**14**	**27.0%**
…other / non-SMEs	0.00 to < 0.15	93	0.04	1,820	47.16		5	5.9%
	0.15 to < 0.25	3	0.19	40	46.61		1	19.4%
	0.25 to < 0.50	1	0.34	38	47.38		0	28.7%
	0.50 to < 0.75	1	0.57	16	47.38		0	38.8%
	0.75 to < 2.50	50	1.38	645	44.97		27	54.8%
	2.50 to < 10.00	0	4.90	5	47.80		0	74.4%
	10.00 to < 100.00	0	0.00	0	0.00		0	0.0%
	100.00 (Default)	0	0.00	0	0.00		0	0.0%
	Subtotal	**147**	**0.50**	**2,564**	**46.41**		**34**	**23.0%**

[1] Parameter is not subject to the RWA calculation for retail business. Hence, in compliance with EBA/GL/2016/11, no disclosure for retail business.

EU CCR7: RWA flow statements of CCR exposures under the IMM

		a	b
	€m	Risk weighted assets (RWAs)	Capital requirements
1	**RWA as at the end of the previous reporting period**	**7,550.9**	**604.1**
2	Asset size	–767.6	–61.4
3	Asset quality	8.0	0.6
4	Model updates	–3.0	–0.2
5	Methodology and policy	0.0	0.0
6	Acquisitions and disposals	0.0	0.0
7	Foreign exchange movements	59.7	4.8
8	Other	0.0	0.0
9	**RWA as at the end of the reporting period**	**6,848.0**	**547.8**

EU CCR3: Standardised approach – CCR exposures by regulatory portfolio and risk

	Exposure classes | €m	Risk weight											Total	Of which unrated
		0%	2%	4%	10%	20%	50%	70%	75%	100%	150%	Other		
1	Central governments or central banks	887	0	0	0	0	0	0	0	0	0	0	887	887
2	Regional governments or local authorities	756	0	0	0	2	0	0	0	0	0	0	758	758
3	Public sector entities	2,282	0	0	0	71	0	0	0	0	0	0	2,353	2,353
4	Multilateral development banks	0	0	0	0	0	0	0	0	0	0	0	0	0
5	International organisations	0	0	0	0	0	0	0	0	0	0	0	0	0
6	Institutions	4	892	71	0	30	153	0	0	6	0	0	1,156	932
7	Corporates	0	1,990	0	0	22	12	0	0	115	0	0	2,139	2,103
8	Retail	0	0	0	0	0	0	0	31	0	0	0	31	31
9	Durch Immobilien besichert	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Exposures in default	0	0	0	0	0	0	0	0	0	1	0	1	1
11	Items associated with particularly high risk	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Covered bonds	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Institutions and corporates with a short-term credit assessment	0	0	0	0	2	0	0	0	0	0	0	2	0
14	Collective investment undertakings	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Equity exposure	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Other items	0	0	0	0	0	0	0	0	0	0	0	0	0
17	**Total**	**3,929**	**2,882**	**71**	**0**	**127**	**166**	**0**	**31**	**120**	**1**	**0**	**7,326**	**7,064**

Further information on counterparty credit risk

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

		a	b	c	d	e
	€m	Gross positive fair value or net carrying amount	Netting benefits	Netted current credit exposure	Collateral held	Net credit exposure
1	Derivatives	121,639	97,517	24,122	13,873	10,249
2	SFTs (securities financing transactions)	112,689	104,946	7,743	1,832	5,911
3	Cross-product netting	0	0	0	0	0
4	**Total**	**234,328**	**202,463**	**31,865**	**15,705**	**16,160**

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

		a	b	c	d	e	f
		Collateral used in derivative transactions				Collateral used in SFTs	
	€m	Fair value of collateral received		Fair value of posted collateral		Fair value of collateral received	Fair value of posted collateral
		Segregated	Unsegregated	Segregated	Unsegregated		
1	Cash	179	14,412	0	17,845	251	5,411
2	Sovereign Bonds	0	1,449	0	3,714	52	5,356
3	Other Bonds	0	1,131	0	756	6	2,637
4	Equities	0	0	0	0	1,782	6,292
5	Other collateral	0	0	0	445	0	0
6	**Total**	**179**	**16,992**	**0**	**22,760**	**2,091**	**19,696**

EU CCR6: Credit derivatives exposures

		a	b	c
	€m	Credit derivative hedges		Other credit derivatives
		Protection bought	Protection sold	
1	Notionals			
2	Single-name credit default swaps	3,304	2,182	13,216
3	Index credit default swaps	0	425	18,252
4	Total return swaps	0	0	918
5	Credit options	0	0	0
6	Other credit derivatives	0	0	0
7	**Total notionals**	**3,304**	**2,607**	**32,387**
8	**Fair values**			
9	**Positive fair value (asset)**	**883**	**62**	**367**
10	**Negative fair value (liability)**	**27**	**698**	**395**

Contractual agreements that oblige Commerzbank to provide additional collateral to its counterparties in the event of a downgrading of its own rating are governed in the Credit Support Annexes which are established as part of the netting master agreements for OTC derivative business.

The counterparty ratings (from Standard & Poor's, Moody's and FitchRatings) are automatically uploaded on a daily basis via interfaces with Reuters, Telerate or Bloomberg into the collateral management system, which can simulate downgrade scenarios if necessary. This makes it possible to carry out an advance analysis of the potential effects on the collateral amounts. Commerzbank regularly reviews these collateral amounts as part of its stress test assuming a simultaneous two-notch downgrade by the three big rating agencies.

addCCR1: Additional contractual obligations (in stress test)

Additional contractual obligations | €m	
Contractual derivative outflows and margin calls	584
thereof collateralised interest rate derivatives	100
thereof uncollateralised interest rate derivatives	484
Other contractual outflows and margin calls	50
Gesamt 2017	**634**
Gesamt 2016	617

C. Securitisations (SEC)

Securitisation process

In securitisation business Commerzbank performs the three roles provided for in regulatory legislation, namely originator, sponsor and investor.

› **Originator** Parts of the Bank's own loan portfolio are placed selectively on the capital markets through securitisation transactions. The transfer of the credit risk is mainly by means of synthetic securitisations where the portfolio is hedged through financial guarantee contracts. During the year under review Commerzbank issued CoCo Finance III-1, consisting of European, primarily German corporate loans and small and medium-sized business loans with a volume of €1.5bn. As at 31 December 2017, of the outstanding securitisations of Commerzbank, risk exposures of €7.1bn (securitised volume €7.6bn) were retained. By far the largest portion of these positions is accounted for by €7.0bn of senior tranches, which are nearly all rated good or very good. As at the reporting date, Commerzbank's securitisation transactions placed on the capital markets and used to free up regulatory capital were as follows:

SEC1: Securitisation transactions with regulatory capital relief

Securitisation programme[2]	Type[1]	Securitisation pool	Maturity	Issue currency	Current volume | €m
CoSMO Finance III–1	S	Corporates	2025	EUR	1,000
Coco Finance II–2	S	Corporates	2025	EUR	3,000
CoSMO Finance III–2	S	Corporates	2026	EUR	2,000
Coco Finance III–1	S	Corporates	2026	EUR	1,500
CB MezzCAP	T	Corporates	2036	EUR	71
Total Commerzbank AG					**7,571**

[1] S = synthetic, T = True sale.
[2] Securatisation of own customer receivables.

In addition, the SME Commerz SCB GmbH transaction (original volume €1.5bn) continues, which does not qualify for capital relief for regulatory purposes. In the reporting year, due to the structure of the transactions Commerzbank did not hold any securitisation exposures for which additional capital was required as a result of an investor share to be taken into consideration by the originator under Articles 256 and 265 CRR. In addition, during the reporting year Commerzbank provided no implicit support within the meaning of Article 248 CRR. Where Commerzbank cooperated with rating agencies in connection with originator securitisation transactions (synthetic), the agency in question was Moody's. The assets securitised by Commerzbank belong to the Bank and derive from its lending business with small and medium-sized business customers and from business with large customers. As part of the overall management of the Bank, the Commerzbank Group constantly reviews opportunities to securitise its own assets. This process is primarily influenced by the market conditions prevailing at any one time. No placement of further securitisation transactions is planned for the first half of 2018 at the reporting date.

› **Sponsor** By securitising their own portfolios of receivables, i.e. selling their receivables on a non-recourse basis, Commerzbank's customers are able to tap alternative sources of funding on the capital markets. Structuring, arranging and securitising these receivables portfolios, particularly those of customers in the Corporate Clients segment, is a key component of the structured finance product range. Special purpose vehicles (purchasing entities) are typically established to manage these assets. The purchases of receivables are funded primarily by the issue of short-term commercial papers (CPs) under the Bank's asset-backed commercial paper (ABCP) programme Silver Tower (conduit). The commercial papers issued are rated by Standard & Poor's, Moody's and FitchRatings. As sponsor, the Bank is responsible for structuring and, as a rule, purchasing and refinancing the transactions. Commerzbank provides the special purpose vehicles with liquidity facilities so that they have access to short-term liquidity. These liquidity facilities are counted in full when determining the risk-weighted exposures. The mainly high diversified portfolios of receivables generally derive from customers' working capital, such as trade receivables and car, machinery and equipment leases.

The receivables portfolios therefore reflect the differing businesses of those selling the receivables. The volume in the Silver Tower conduit was reduced by €0.1bn to €4.0bn in 2017. The securitisation exposures deriving from the Silver Tower conduit largely consist of liquidity facilities and back-up lines.

› **Investor** The Commerzbank Group invests under its regulatory banking book in securitisation positions. The Bank's internal credit risk strategy provides limited scope for entering into new securitisation positions provided that the risk profile of each securitisation position is subjected to a differentiated analysis and documentation. This allows transaction risk drivers that may impact directly or indirectly on the securitised position's risk content to be taken into account. In the year under review Commerzbank invested in senior-ranking securitisation positions, mainly backed by pools of corporate loans and consumer loans.

Risk management

The internal processes for monitoring the risk profile of securitisation exposures are based on the provisions of Articles 406 and 408 CRR and on the principles of the Minimum Requirements for Risk Management (MaRisk) as amended. They apply equally to all securitisation exposures, irrespective of whether they are part of the regulatory trading or banking book, or whether Commerzbank acts as the originator, sponsor or investor.

The processes put in place by the Bank take account of the individual risk profile of securitisation exposures on the basis of a wide range of information sources. They ensure that various risks directly and indirectly affecting the probability of default of the securitised positions are monitored in a continuous and timely manner. This also includes carrying out regular stress tests that take account of macroeconomic factors and the individual risk profile of the securitised positions.

› **Originator** The credit process for loans to customers does not distinguish between loans which the Bank will securitise at a later date and those for which it will continue to assume the risk. Transactions which allow reliefs in capital for regulatory purposes are subject to a monitoring process that ensures the continuous compliance with the regulations on significant risk transfer according to Articles 243 and 244 CRR. The amount to be retained in securitisation transactions in accordance with Article 405 CRR is reviewed regularly and published in the Investor Report. A potential placement risk for Commerzbank's transactions is taken fully into account, as the receivables are included in full in the Bank's risk and capital management process up until the actual risk transfer by means of securitisation and placement.

› **Sponsor** The customer transactions funded via conduits are subject to an ongoing credit process. A risk analysis of the transactions is conducted when the transactions are structured and again in regular reviews which are carried out annually and as circumstances require. A rating is assigned using the ABS rating systems certified by the banking regulators (internal assessment approach). For this purpose we take into account all significant risk drivers of the securitised receivables portfolio (e.g. type of receivable, default rates, collateral provided, diversification, dilution risks, commingling risks) and of the securitisation structure (e.g. whether the creditor claims have a waterfall structure, credit enhancements). Qualitative risk drivers ascertained from regular on-site visits to the seller of receivables as well as the seller's financial position are also taken into account. For trade receivables, structure-inherent covers through credit insurance are taken into account in the rating model and credit analysis. Credit insurance is used in order to mitigate concentration risk. The main counterparties here are Euler Hermes Kreditversicherungs AG and the German branch of Coface S.A. Before any purchase of customer receivables, the minimum conditions agreed in the contract documentation are reviewed and any non-qualifying receivables are excluded. After the receivables have been bought, their quality is reviewed continuously. If any potential problems come to light another credit analysis of the structure is carried out.

› **Investor** Strict internal guidelines must be followed when acquiring a new securitisation position. Such positions are subject to a specific internal credit process that also ensures that the specific requirements for securitisation positions regarding due diligence and retention under Articles 405-406 CRR are met. In the credit process applied to the Bank's securitisation portfolio, the risk profile of the securitisation positions is analysed quarterly or as circumstances require. In preparing a credit assessment, at the level of the individual tranche a securitisation-specific rating system is used which has been developed internally within the Bank, while external standard models are also applied. In the case of resecuritisations, the analysis relates not only to the securitisation exposures contained in the pool but also covers the underlying portfolios on a risk basis (look-through principle). As with securitisation exposures, the ranking of the individual tranches contained in the pool within a securitisation structure are taken into account in this analysis, as are the specific features of the asset classes and of the different jurisdictions, in order to generate the expected aggregate cash flow. The results are then used to model the entire waterfall structure at the level of the resecuritisation.

Commerzbank takes into account not only the original default risk of the securitised receivables but also secondary risks such as market value risk, liquidity risk, legal risk and operational risk insofar as they are relevant with a direct or indirect impact on the default risk. This process looks, for example, at the performance reports for the securitised receivables, changes in external ratings and movements in the market value of the securitisation exposures.

When determining market price risk, changes relating to interest rates, foreign currency rates or credit spreads, among others, are taken into account for the risk assessment of each tranche. In addition, the combination of various conventional risk measures (e.g. VaR) ensures the appropriate management of market risk concentrations at Group level.

Liquidity risk refers in this context to the risk that Commerzbank will be unable to meet its payment obligations on a day-to-day basis. Liquidity risks from ABS transactions are modelled conservatively in the internal liquidity risk model. Firstly, a worst case assumption is made that Commerzbank has to take on virtually the entire funding of the purchase facilities provided to the special purpose vehicles under the Silver Tower conduit. Secondly, the Bank's holdings of securitisation transactions only qualify as liquid assets if they are eligible for rediscount at the European Central Bank. These positions are only included in the liquidity risk calculation after applying conservative discounts. With regard to the Silver Tower conduit, it is assumed not only that external refinancing of the conduit will be replaced by Commerzbank on expiry, but also that additional drawdowns on credit lines by customers of the conduit will have to be refinanced by Commerzbank.

Legal risk in the context of securitisation transactions is the risk that the Bank might suffer losses as a result of flaws in legal transaction structures or as a result of missing or flawed legal documentation. Commerzbank's independent Legal department is responsible for examining legal structures and all transaction contracts. In terms of content, risks are divided into those arising from the sphere of the originator itself or those directly connected with the portfolio to be securitised. The subsequent refinancing and collateral structure is also a key element of legal structuring and risk assessment.

As well as being associated with legal risk as a risk type under the overall heading of operational risk, securitisation business is subject to the Group-wide management of operational risks. It therefore falls within the framework of the certified advanced measurement approach used by Commerzbank to measure operational risks.

Valuation methods and quantitative information

Regulatory valuation of securitisations

Securitisation positions in the banking book In the reporting period, Commerzbank applied the regulations of both the IRBA and the SACR for regulatory purposes.

› **Originator** The ratings-based approach is used for externally rated securitisation exposures that have been retained from the Commerzbank Group's own securitisation transactions. Capital is held against synthetic securitisation tranches that have been placed on the market based on the risk weighting of the party providing the collateral. Counterparties to the hedging instruments used, e.g. financial guarantees, are institutional investors, whose deposits serve as collateral, as well as multilateral development banks. For all synthetic transactions the supervisory formula approach (SFA) is used.

› **Sponsor** The overwhelming majority of sponsor transactions have to be allocated to the conduit business. Only in a few cases does Commerzbank hold other sponsor positions. Under the internal assessment approach (IAA), ABS rating systems certified by the supervisory authority are used for the Silver Tower conduit sponsored by Commerzbank. In the reporting period, we applied our own rating systems to the Silver Tower conduit for the following classes of receivables: trade receivables, car finance and leasing, equipment leasing and consumer lending. The rating systems are developed in accordance with the stipulations of regulatory requirements, independently of the front office, by Commerzbank's risk function. In accordance with the CRR, the methodology follows the guidelines of the rating agencies Standard & Poor's, Moody's and FitchRatings. The systems were certified at the outset by BaFin and the Bundesbank. They are subject to a regular review by the supervisors and internal audit. In addition, the internal assessment approach is subject to an annual validation by Commerzbank's risk function.

The various internal assessments take account of all features of the securitised receivables portfolio identified by the rating agencies as significant risk drivers as well as the specific structuring characteristics of the securitisation exposure. Other quantitative and qualitative risk components that are regarded as material by Commerzbank are also included in the assessment. These include, in particular, seller risks and qualitative risk drivers that are evaluated via structured qualitative questionnaires. The result of the rating process is a tranche-specific rating derived from the quantitative and qualitative results of the assessment approach. Depending on the specific approach used, this rating is based on the probability of default or expected loss (EL) of the securitised tranche. No external ratings from the above-mentioned rating agencies are available for the securitisation exposures subject to the internal assessment approach. The results of the internal assessment approach are used to determine regulatory capital requirements. They are also used within the internal capital model, in portfolio monitoring and in setting limits (ICAAP processes).

The approaches to modelling probability of default or expected loss (EL) for securitisation tranches differ depending on the type of securitised asset class. For the asset classes trade receivables, car finance and leasing, equipment leasing and consumer lending, a range of different stress factors used by the rating agencies are applied, depending on the main risk drivers for the relevant transactions. These are, for example, stress factors on concentration risks, default risks, dilution risks and interest rate risks. Quantitative and qualitative modelling components devised by the Bank are also used. When calculating loss buffers, stress factors are determined individually for different securitised asset types on the basis of the risk profiles of the securitisation transactions. Furthermore, the practice of making a capital deduction where no applicable external rating is available, the supervisory formula approach (SFA) and the look-through approach (LTA) are both used in a single case each.

› **Investor** For investor positions, external ratings are generally available and lead to the ratings-based approach (RBA) being applied. Commerzbank takes account of all available external ratings of securitisation positions issued by the rating agencies nominated by Commerzbank, namely Standard & Poor's, Moody's and Fitch-Ratings. It does so irrespective of the type of receivables securitised and the type of securitisation exposure. A very small portion of investor positions is covered by guarantees from guarantors including the European Investment Fund (EIF). The guarantee is taken into account in the calculation of RWAs by substituting the risk weighting of the guarantor for the risk weighting of the securitisation. The look-through approach is used to a limited extent. In just a few cases a capital deduction is used due to the lack of an applicable external rating.

Companies which are consolidated within the Commerzbank Group for regulatory purposes may, as part of the Group-wide business and risk strategy, act as investors in securitisation transactions in which the Bank is acting as sponsor or originator.

Commerzbank currently only holds securitisation exposures from transactions where it acts as sponsor or originator. All retentions or repurchases of securitisation exposures from the Bank's own transactions with recognised regulatory risk transfer and securitisation exposures from transactions where Commerzbank has acted as sponsor are taken into account when determining the regulatory capital requirement. In the case of transactions without recognised regulatory risk transfer, the regulatory capital requirement is determined for the securitised portfolio.

Securitisation exposures in the trading book As at 31 December 2017, the majority of securitisation positions included in the trading book are hedged against performance-induced market price risks by means of credit default swaps with counterparties of good credit quality. In addition, further positions are allocated to the correlation trading book. The capital adequacy requirements are determined by application of the provisions of Articles 337 and 338 CRR relevant for securitisation exposures.

Valuation and accounting procedures

In true sale or synthetic securitisation transactions via special purpose vehicles, IFRS accounting regulations require the Bank to review whether or not the securitising special purpose vehicles need to be consolidated in accordance with IFRS 10. This review process is centralised in the Commerzbank Group in the accounting department. The central unit is informed of the establishment or restructuring of a special purpose vehicle. On the basis of the information submitted, it carries out a review to determine whether or not the special purpose vehicle needs to be consolidated.

› **Originator** If the special purpose vehicle is consolidated as part of the Commerzbank Group, no further derecognition test is carried out under IAS 39 rules or, from 2018 onwards, IFRS 9. The asset is not derecognised in this case. If the special purpose vehicle does not have to be consolidated, in true sale securitisations the possible derecognition of the securitised receivables from the balance sheet is assessed. Following an assessment of the risks and rewards of ownership as the primary derecognition criterion and the control concept as the secondary derecognition criterion (IAS 39.15 ff. or, from 2018 onwards, IFRS 9.3.2), a derecognition or partial derecognition (continuing involvement) is reported where appropriate. In the case of synthetic securitisations, the underlying receivables remain on the balance sheet. As with securitised receivables in true sale securitisations that are not derecognised, they are reported in their original IFRS category. These receivables continue to be accounted for in accordance with the rules for this IFRS category. Where securitised receivables are derecognised, any resultant gains or losses are recognised in the income statement. In some cases, the derecognition of receivables may lead to the first-time recognition of new exposures, for example bonds issued by special purpose vehicles. Under IFRS these exposures are categorised on the basis of the intention with which the securities were acquired and the type of securities in one of the three IAS 39 categories (held for trading, loans and receivables or available for sale) or, from 2018 onwards, according to IFRS 9 (FVTPL, amortised cost and FVOCI). Please refer to the notes to the IFRS Group financial statements (notes to the balance, from page 175 onwards) for a detailed explanation of the classification rules and the related valuation procedures. No securitisation transactions leading to derecognition of receivables were carried out in the period under review. As a result, no gains or losses were realised from the sale of receivables in connection with securitisation transactions during the reporting period.

The securitising special purpose vehicles for the following transactions are currently consolidated for accounting purposes: Coco Finance II–2 Ltd. and SME Commerz SCB GmbH. However, these entities are not consolidated for regulatory purposes. CB MezzCap Limited Partnership is currently not consolidated either for accounting purposes or for the purposes of regulatory capital adequacy requirements. If assets are earmarked for securitisation, this has no direct impact on their accounting treatment or measurement within the applicable IFRS categories.

› **Sponsor** Under IFRS the funding entities Silver Tower Funding Ltd and Silver Tower US Funding LLC are not consolidated under Silver Tower. No purchasing entities are consolidated either. Moreover, no purchasing or funding entities are consolidated under Silver Tower for regulatory purposes. If a beneficiary special purpose vehicle is not consolidated under IFRS, the liquidity line provided to it is recorded in the notes to the Annual Report as a contingent liability in its full unutilised amount. Any utilised amount is recognised as a receivable in the IFRS category loans and receivables.

› **Investor** Under IFRS, investor positions are categorised on the basis of the intention with which the securities were acquired and the type of securities into one of the three IAS 39 categories (held for trading, loans and receivables or available for sale) or, from 2018 onwards, according to IFRS 9 (FVTPL, amortised cost and FVOCI). For a detailed explanation, please refer to the notes to the IFRS Group financial statements (notes to the balance, from page 175 onwards), which also explains the related valuation procedures. If the securitisation exposures are traded on liquid markets with observable pricing, they are valued on the basis of independent market prices. If direct measurement at market prices is not possible, the value of the securitisation exposure is determined using prices from external providers. In some cases the value of the securitisation exposure is determined with the help of valuation models. This involves the application of a discounted cash flow approach, with the cash flows and other relevant parameters being based on data observable on the market. Moreover, the approach is calibrated with market data for application to similar securitisation structures. In many cases the prices estimated by external providers are used. There were no significant changes in the methods used to value securitisation positions in the period under review.

Quantitative information on securitisations

Securitisation positions in the banking book The following information relates to transactions for which risk-weighted exposures are determined in accordance with Articles 242–270 CRR. This also includes the Commerzbank Group's own securitisation transactions for which capital relief is available and made use of for regulatory purposes.

The total volume of all retained or acquired securitisation exposures (on- and off-balance-sheet) was €14.7bn as at the reporting date. This amount corresponds to the IRBA and SACR exposures after deducting eligible collateral.

A breakdown of retained or acquired securitisation exposures by exposure type and the regulatory role assumed by Commerzbank is given in the following table.

SEC2: Retained or acquired securitisation exposures in the banking book by type of exposure

	Originator		Investor		Sponsor	
€m	IRBA	SACR	IRBA	SACR	IRBA	SACR
Receivables[1]	7,074	0	13	0	1,111	0
Securities[2]	24	0	3,629	3,761	144	141
Other positions on-balance	0	0	0	0	0	0
Liquidity facilities	0	1	0	0	2,650	0
Derivatives[3]	0	0	15	92	4	0
Other positions off-balance[4]	0	0	0	0	16	53
Total 2017	**7,098**	**1**	**3,656**	**3,854**	**3,925**	**193**
Total 2016	5,662	1	3,019	4,952	4,041	295

[1] For example, drawdowns on liquidity facilities, cash loans, on-balance positions from synthetic transactions etc.
[2] ABS, RMBS, CMBS etc.
[3] Counterparty risk from market value hedges (interest rate and currency risk).
[4] Garantees etc.

The table below provides a breakdown of the securitisation exposures shown above by type of underlying assets.

SEC3: Retained or acquired securitisation exposures in the banking book by type of asset

	Originator		Investor		Sponsor	
€m	IRBA	SACR	IRBA	SACR	IRBA	SACR
Loans to companies/SMEs	7,098	1	2,062	32	148	0
Commercial real estate	0	0	94	0	0	0
Residential real estate	0	0	19	373	0	0
Consumer loans	0	0	887	3,354	0	192
Securitised positions	0	0	8	9	0	1
Leasing receivables	0	0	0	1	1,476	0
Trade receivables	0	0	0	0	2,301	0
Other	0	0	588	84	0	0
Total 2017	**7,098**	**1**	**3,656**	**3,854**	**3,925**	**193**
Total 2016	5,662	1	3,019	4,952	4,041	295

Based on the country of the securitised claim, the securitisation exposures originate predominantly from Germany at 64% (2016: 60%), the USA 21% (2016: 29%) and the UK/Ireland 2% (2016: 3%).

The next table provides a breakdown of acquired or retained securitisation exposures by risk weighting bands. Risk weightings are ascertained by applying the risk approach applicable to each securitisation exposure as per Article 259 CRR. If a securitisation exposure has an external rating of B+ or worse, the exposure is deducted from CET1 capital. The capital requirements are determined by the exposure and its risk weighting after taking account of any impairments.

SEC4: Retained or acquired securitisation exposures in the banking book by risk weighting band

IRBA	RBA		IAA		SFA	
Risk weighting band €m	Position value	Capital requirement	Position value	Capital requirement	Position value	Capital requirement
≤ 10%	3,612	22	1,521	11	6,958	39
> 10% ≤ 20%	9	0	1,443	22	143	1
> 20% ≤ 50%	0	0	558	12	0	0
> 50% ≤ 100%	0	0	255	13	0	0
> 100% ≤ 650%	0	0	0	0	9	3
> 650% < 1,250%	0	0	0	0	21	15
Total 2017	**3,620**	**22**	**3,777**	**57**	**7,130**	**58**
Total 2016	2,972	19	3,885	63	5,747	51

SACR	RBA		IAA		LTA	
Risk weighting band €m	Position value	Capital requirement	Position value	Capital requirement	Position value	Capital requirement
≤ 10%	0	0	0	0	0	0
> 10% ≤ 20%	3,487	56	192	3	0	0
> 20% ≤ 50%	84	3	0	0	0	0
> 50% ≤ 100%	121	10	0	0	0	0
> 100% ≤ 650%	13	4	0	0	65	8
> 650% < 1,250%	0	0	0	0	0	0
Total 2017	**3,704**	**72**	**192**	**3**	**65**	**8**
Total 2016	4,779	91	188	8	94	11

As at 31 December 2017 the value of the securitisation exposures deducted from equity capital was €239m (2016: €287m). After taking account of impairments, the capital deduction amounted to €192m (2016: €254m).

As at 31 December 2017 there were no retained or acquired resecuritisation exposures in the banking book, hence a breakdown of such resecuritisation positions by risk weighting bands and reporting of the resultant capital requirement is not provided. As at 31 December 2016 the total exposure value of the retained or acquired resecuritisation exposures in the banking book came to €17m and the resultant capital requirement to €1m. The capital requirement values do not consider hedge positions or insurance; all positions were shown in the IRBA.

The table below shows the outstanding volumes of Commerzbank's securitisation transactions. These were originator transactions with recognised regulatory risk transfer or primary ABCP-funded sponsor transactions.

SEC5: Securitisation assets outstanding

	Originator Traditional		Originator Synthetic		Sponsor[1]	
€m	2017	2016	2017	2016	2017	2016
Loans to companies/SMEs	71	71	6,326	5,996	187	214
Consumer loans	0	0	0	0	189	189
Securitised positions	0	0	0	0	1	1
Leasing receivables	0	0	0	0	1,396	2,316
Trade receivables	0	0	0	0	1,681	1,824
Commercial real estate	0	0	0	0	0	0
Residential real estate	0	0	0	0	0	0
Other	0	0	0	0	0	40
Total	**71**	**71**	**6,326**	**5,996**	**3,453**	**4,583**

[1] Mainly ABCP.

On the reporting date, the securitised portfolios included non-performing or past due loans as shown below:

SEC6: Impaired / past-due assets securitised

	Non-performing loans		Past due loans	
€m	2017	2016	2017	2016
Loans to companies/SMEs	51	13	6	9
Commercial real estate	0	0	0	0
Residential real estate	0	0	0	0
Total	**51**	**13**	**6**	**9**

During the period under review, no portfolio losses occurred under the Commerzbank originator transactions. We have taken the information on portfolio losses and on impaired and past due claims from the investor reports for the respective underlying transactions.

Securitisation transactions in the trading book The information in this section relates to securitisation exposures in the trading book (excluding the correlation trading portfolio) for which risk-weighted exposure values are determined in accordance with Article 337 CRR. This comprises securitisation exposures where Commerzbank acts as sponsor, originator or investor.

The total net exposure of all retained or acquired securitisation positions was €2m at the reporting date, including credit derivative hedges according to article 337 CRR. There are no further off-balance-sheet hedge positions.

The trading book's total retained or acquired securitisation position with a total net exposure of €2m is subject to the SACR as at 31 December 2017 – as in the previous year – and relates to the type of asset "Securitisation position".

Based on the country of the securitised claim most of these securitisation exposures originate from the USA.

At year-end 2017 (as at year-end-2016) there were no retained or acquired resecuritisation exposures in the trading book, hence no report by risk weighting band is provided.

As at the end of the reporting period, there were no trading book securitisation exposures that were not deducted from CET1. As at 31 December 2017 the value of the securitisation exposures to be deducted from equity capital (including resecuritisations) as well as the capital requirement was €2m (2016: €2m).

D. Market risk (MR)

Market risk is the risk of financial losses due to changes in market prices (interest rates, commodities, credit spreads, exchange rates and equity prices) or in parameters that affect prices such as volatilities and correlations. Losses may impact profit or loss directly, e.g. in the case of trading book positions. However, for banking book positions they would be reflected in the revaluation reserve or in hidden liabilities/reserves.

Risk management

Strategy and organisation

Commerzbank's market risk strategy is derived from its Group Risik Strategy and the business strategies of the individual segments. It sets targets for market risk management in relation to Commerzbank's main business activities. The core market risk management tasks are the identification of all material market risks and drivers of market risk for the Group and the independent measurement and evaluation of these. The results and estimates serve as the basis for risk/return-oriented management.

The Board of Managing Directors of Commerzbank is responsible for ensuring the effective management of market risk throughout the Commerzbank Group. Specific levels of authority and responsibility in relation to market risk management have been assigned to the appropriate market risk committees.

Within the Bank, various market risk committees have been established. In these, segment representatives, along with representatives from the risk function and finance area, discuss current risk positioning issues and decide on appropriate action. Chaired by the risk function, the Group Market Risk Committee, which meets monthly, deals with the Commerzbank Group's market risk position. Discussions centre on the monthly market risk report, which is also presented to the Board of Managing Directors for their consideration. The report summarises the latest developments on financial markets, the Bank's positioning and the risk ratios derived from this. The Segment Market Risk Committee, which focuses on the Corporate Clients segment and the Treasury division, meets once a week. This committee also manages market risks arising from non-core activities (Asset & Capital Recovery).

The risk management process involves the identification, measurement, management and monitoring of risks and reporting on them. It is the responsibility in functional terms of market risk management, which is independent of trading activities. Central market risk management is complemented by decentralised market risk management units at segment level and for regional units and subsidiaries. The close integration of central and local risk management with the business units means that the risk management process starts in the trading areas themselves. The trading units are responsible in particular for the active management of market risk positions, e.g. reduction measures or hedging.

Risk management

Commerzbank uses a wide range of quantitative and qualitative tools to manage and monitor market risk. Quantitative limits for sensitivities, value at risk (VaR) figures, stress tests, scenario analyses and ratios on economic capital limit the market risk. Our comprehensive rulebook, in the form of market risk policies and guidelines as well as restrictions on portfolio structure, new products, maturities and minimum ratings, establishes the qualitative framework for market risk management. The market risk strategy lays down the weighting of figures in each segment by reference to their relevance. Thereby allowance is made for the varying impact of the parameters for the management of the segments in line with the business strategy.

Market risk is managed internally at Group level, segment level and in the segment's reporting units. A comprehensive internal limit system broken down to portfolio level is implemented and forms a core part of internal market risk management.

The quantitative and qualitative factors limiting market price risk are determined by the market risk committees by reference to the Group's management of economic capital. The utilisation of these limits, together with the relevant net income figures, is reported daily to the Board of Managing Directors and the responsible heads of the Group divisions. Based on qualitative analyses and quantitative ratios, the market risk function identifies potential future risks, anticipates potential financial losses in collaboration with the finance function, and draws up proposals for further action, which are discussed with the market units. Voting on the proposed measures or exposures takes place in the above-mentioned market risk committees and is subsequently submitted to the Board of Managing Directors for approval.

Risk concentrations are restricted directly with specific limits or are indirectly avoided, for example using stress test limits. In addition, the combination of various conventional risk measures (e.g. VaR, sensitivities) ensures the appropriate management of concentration risks. Furthermore, risk drivers are analysed on a regular basis in order to identify concentrations. The risk management of existing concentrations is also reviewed using situation-driven analyses and, where necessary, supplemented by targeted measures such as limits.

Any limits that are breached are handled in a separate escalation procedure. After a limit breach has been identified, the front office and risk units design adequate countermeasures. If the limit breach cannot be remedied within a few days, it will be escalated by the market risk function to the next hierarchical level.

Regulatory risk measures that are not included in economic risk-bearing capacity are limited and managed separately. These include, for example, stressed VaR and incremental risk charge.

Tradability and measurement of financial instruments

The criteria applicable within the Bank for the allocation of transactions to the trading book or banking book are set as part of a Group-wide policy which implements the regulatory requirements for the allocation of transactions to the trading book with regard to the bank-specific circumstances, particularly also with regard to organisation and the focus of business policy.

Commerzbank has various control processes in place to identify illiquid markets and trading restrictions, which provide indications to determine the procedures to adopt in such cases. In addition to this, the ability to hedge trading book positions and the assessment of the reliability of measuring these trading book positions are subject to regular reviews.

IFRS 13, which has had to be applied since the financial year 2013, standardises the rules for measuring fair value. Under IFRS 13, the fair value of an asset is the amount for which it could be sold between knowledgeable, willing, independent parties in an arm's length transaction. The fair value therefore represents a realisable price.

The fair value of a liability is defined as the price at which the debt could be transferred to a third party as part of an orderly transaction. Furthermore, for the valuation of a debt one's own default risk has to be considered.

The most suitable measure of fair value is the quoted price for an identical instrument in an active market (fair value hierarchy level I). In cases where no quoted prices are available, valuation is based on quoted prices for similar instruments in active markets. Where quoted prices are not available for identical or similar financial instruments, fair value is derived using an appropriate valuation model where the data inputs are obtained, as far as possible, from verifiable market sources (fair value hierarchy level II).

Most valuation methods are based on data from verifiable market sources. However, some valuation models use inputs for which sufficient verifiable current market data is not available. These valuation methods inherently include a greater level of expert or management judgement. These unobservable inputs may include data that is extrapolated or interpolated, or may be derived by approximation to correlated or historical data. However, to a maximum extent, these inputs are market or third-party inputs and rely as little as possible on expert estimates or company-specific inputs (fair value hierarchy level III).

Valuation models must be consistent with accepted economic methodologies for pricing financial instruments. They must incorporate all factors that market participants would consider appropriate in setting a price. In the Commerzbank Group, standards have been established in the form of internal controls and procedures for the independent verification and validation of all fair values including the creation of a valuation reserve. These controls and procedures are carried out by various units within the independent finance and risk functions, with a central supervisory function being exercised by the Independent Price Verification (IPV) Group within the finance function. The models, inputs and resulting fair values are reviewed regularly by senior management, the finance and the risk function.

The fair value itself is determined in a two-step process. As a first step, the individual fair value components are calculated in accordance with the relevant rules and parameters; the second step involves combining the components on a monthly basis in a consolidated fair value report for reporting at Group level.

The independent price verification (IPV) process ensures the correctness of the prices and parameters used in the fair value calculation as a central, independent process for determining the fair value. The IPV process is based on a risk-oriented approach which also takes into account internal factors such as changes in business strategy, the expansion or downsizing of business activities and external factors such as developments in markets, products and valuation models. If a price is directly observable, e.g. the settlement price of a future or the stock market price of a share, the products are valued at the bid or offer side, depending on whether they are a long or a short position. However, if a valuation model for determining fair value is applied, the respective input parameters at mid-market are used, e.g. interest rates and implied volatilities to value an interest rate option. This results in the positions affected being overvalued because their liquidation or hedging in the market would always be realised at a bid or offer price. Accordingly, “bid-offer reserves” - totalling ½ of the bid-offer spread in relation to the associated position - must be taken into account as liquidation or hedge costs for all positions valued at mid-market.

In the event of illiquid products or input parameters the availability of independent market data sources may be restricted. Where sufficient information is available for a solid independent estimate made by experts, a parameter uncertainty reserve is set up. Such estimates are usually based on other comparable and available market data (mapping), so the corresponding reserve can be calculated on the basis of the standard deviation of this market data. Some valuation models use input parameters for which no market data or no sufficiently verifiable market data is available (see Level III above). In these cases a “Day1 reserve” is set up on the day the transaction is executed. To this end, the profit or loss calculated by the valuation model on the first day of trading (Day1) is set aside and recognised pro rata over the term of the transaction or the period during which the relevant market parameters are expected to be unobservable.

Some of the models used to measure derivative instruments, in particular, can show theoretical deficits or be subject to certain restrictions in their practical application. In such cases it becomes necessary to set up model reserves to reflect the uncertainties of model-based measurement. Here, a distinction is made between generic model reserves, which relate to all transactions measured using a specific model, and specific model reserves, which affect only individual transactions or a particular model combination. These reserves are usually estimated using a revaluation in alternative models.

In addition, for some years valuation adjustments (summarised under the term xVA) for OTC derivatives have increasingly been taken into account as a result of the financial crisis. These valuation adjustments include the risk and funding profiles of counterparties and of the bank itself in the valuation. Thus the credit valuation adjustment (CVA) describes the valuation adjustment of OTC derivatives for the default risk of the counterparty while the debit valuation adjustment (DVA) depicts the adjustment for own default risk. The funding valuation adjustment (FVA) for its part offsets differences in funding costs on account of the incomplete collateralisation of derivatives transactions.

Market risk model

Value at Risk

A standardised value at risk model incorporating all positions is used for the internal management of market risk. VaR quantifies the potential loss from financial instruments due to changed market conditions over a predefined time horizon and with a specific probability.

Our VaR market risk model is based on a historical simulation with a one-year interval of historical market data. The historical simulation determines the profit and loss distribution of the current portfolio by means of revaluation using historical changes in market prices and volatility. This is done on the basis of independent market data which is quality-assured on a daily basis and fed into a central market database at a standard defined time. Market data is provided for all relevant positions in the asset classes interest rates, credit spreads, equities, foreign currencies and commodities. This market data takes the form of prices quoted directly on the market or market data such as yield and credit spread curves derived using internal methods. A proxy concept is used if no market data is available for individual exposures. In this case, prices are derived from those for comparable instruments.

For internal management purposes, a confidence level of 97.5% and a holding period of one day are assumed. The value at risk concept makes it possible to compare risks over a variety of business areas. It enables many positions to be aggregated, taking account of correlations between different assets. This ensures a consolidated view of the market risk at all times. A comprehensive internal limit system broken down to portfolio level is implemented and represents an important part of internal market risk management.

The VaR market risk model described above is also used to calculate regulatory required capital. This regulatory capital backing is required for trading book risks and for currency and commodity price risks in the banking book. A confidence level of 99% and a ten-day holding period are used for the regulatory capital adequacy requirement. These assumptions meet the requirements of the Basel Committee and other international standards on the management of market risk. For certain evaluations, such as backtesting, the VaR is also calculated on the basis of a one-day holding period.

Stress test

As the VaR concept gives a prediction of potential losses on the assumption of normal market conditions, it is supplemented by the calculation of stress tests. These stress tests measure the risk to which Commerzbank is exposed, based on unlikely but still plausible events. These events may be simulated using extreme movements on various financial markets. The key scenarios relate to major changes in credit spreads, interest rates and yield curves, exchange rates, share prices and commodities prices. Events simulated in stress tests include all stock prices falling by 15%, a parallel shift in the yield curve or changes to the curve's steepness.

Extensive Group-wide stress tests and scenario analyses are carried out as part of risk monitoring. The Bank-wide stress test calculation is based on a combination of short-term stress test scenarios and scenarios based on macro-economic variables. The stress test framework is completed by portfolio-specific stress tests and ad-hoc scenario analyses.

Stress tests are intended to simulate the impact of crises and extreme market conditions on the Bank's overall market risk position. The impact on the respective components of capital and the income statement is also quantified in these tests.

In order to manage and monitor risks, short-term scenarios are calculated daily, compared against fixed limits and reported to the Board of Managing Directors. The longer-term scenarios are calculated on a monthly basis and discussed in the respective committees.

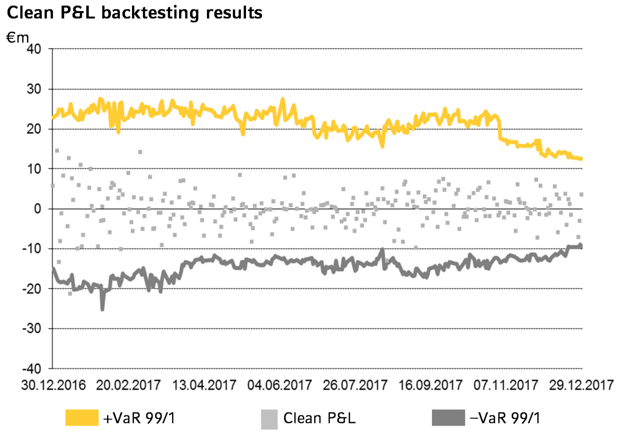
Model validation

The reliability of the internal model (historic simulation) is monitored in various ways, including by backtesting on a daily basis. The VaR calculated is set against actually occurring profits and losses. The VaR used in backtesting is based on the complete historic simulation and therefore represents all internal models used in the market risk VaR calculation of capital adequacy requirements at Group level. The process draws a distinction between "clean P&L" and "dirty P&L" backtesting. In the former, exactly the same positions in the income statement are used as were used for calculating the VaR. This means that the profits and losses result only from changes in market prices (hypothetical changes in the portfolio value). In dirty P&L backtesting, by contrast, profits and losses from newly concluded and expired transactions from the day under consideration are also included (actual profits and losses induced by portfolio value changes). Profits and losses from valuation adjustments and model reserves are factored into dirty and clean P&L according to the regulatory requirements.

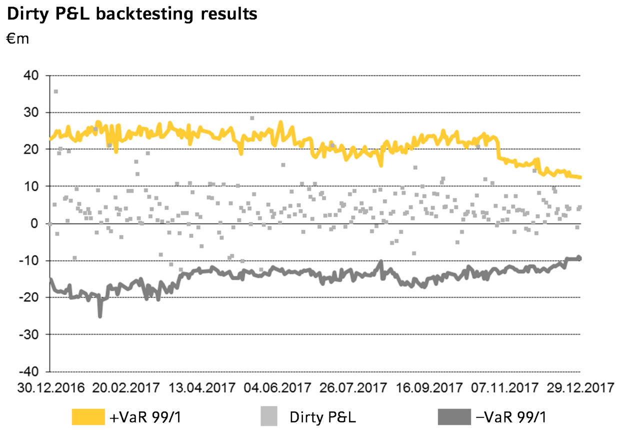
If the actual loss exceeds the VaR, it is described as a negative backtesting outlier. Analysing the results of backtesting provides an informative basis for checking parameters and for improving the market risk model. In 2017, we saw one negative clean P&L outlier and no negative dirty P&L outliers. At 11 January 2017 the VaR came to €17.9m while the associated clean P&L at 12 January 2017 showed a loss of €21.3m. The main reasons for this were changes in the EUR/USD exchange rate and in CNY/CNH spreads.

As such, the results are in line with statistical expectations and confirm the quality of the VaR model. Backtesting is also used by the supervisory authorities for evaluating internal risk models. Negative outliers are classified by means of a traffic-light system laid down by the supervisory authorities. All negative backtesting outliers at Group level (from both clean P&L and dirty P&L) must be reported to the supervisory authorities, citing their extent and cause.

EU MR4: Comparison of VaR estimates with gains/losses (clean)



EU MR4: Comparison of VaR estimates with gains/losses (dirty)



The individual components of the internal model are regularly validated for their appropriateness for risk measurement. These include the underlying model assumptions and parameters and the proxies used. Validation analyses are carried out based on the validation concept using materiality- and risk-based prioritisation and planning. The Validation Committee is informed of the validation planning and its progress.

The validations performed are reported to the Group Market Risk Committee on a quarterly basis. The identification and elimination of model weaknesses are of particular importance. Against this background, an application for a model change to enhance the accuracy of risk measurement was submitted to the regulator in 2016. This was especially due to a changed market environment for interest rates and volatilities. The regulator conducted its review in 2017 and its final approval is currently pending. In November 2016 a new division was created in GRM-CC to bundle together validation activities for risk models for all risk types.

Quantitative information on market risks

Pursuant to Article 92 (3) b) and c) CRR, adequate capital must be set aside for market risk positions. Commerzbank uses an internal market risk model to calculate the regulatory capital requirement. This affects both the equity price and interest rate-related risk positions in the trading book as well as the currency positions and commodity positions. The standardised approaches are applied for smaller units in the Commerzbank Group in accordance with the partial use option.

Development of market risk assets in the standard approach

The standard approach is essentially used to include the market risk positions of investments/subsidiaries in the calculation of capital requirements. At 31 December 2017, the standard approach accounted for 11% of all market risk assets. The risk-weighted assets for market risk positions in the standard approach increased in the fourth quarter 2017 by €251m to €967m at year-end 2017. The main reason for this was higher foreign exchange risk due to an increased volume of the securities lending business. The dominant risk classes are foreign exchange and interest rate risks.

EU MR1: Market risk under the standardised approach

		a	b
	€m	**RWAs**	**Capital requirements**
	Outright products		
1	Interest rate risk (general and specific)	324	26
2	Equity risk (general and specific)	1	0
3	Foreign exchange risk	623	50
4	Commodity risk	0	0
	Options		
5	Simplified approach	3	0
6	Delta-plus method	0	0
7	Scenario approach	0	0
8	Securitisations (specific risk)	0	0
9	Collective investment undertakings	16	1
10	**Total**	**967**	**77**

Market risk in the internal model approach

At 31 December 2017, the internal model approach accounted for 89% of all market risk assets. The risk-weighted assets for market risk positions in the internal model approach declined in the fourth quarter 2017 by €120m to €7,706m at year-end 2017. The decline was due to lower risk-weighted assets from VaR, stressed VaR and IRC as a result of exposure changes in the Corporate Clients and Treasury divisions and from lower market volatility.

EU MR2-A: MR under the Internal Model Approach (IMA)

		a	b
	€m	**RWAs**	**Capital requirements**
1	**VaR (higher of values a) and b))**	**1,818**	**145**
a)	Previous day's VaR (Article 365(1) of the CRR (VaRt-1))		30
b)	Average of the daily VaR (Article 365(1)) of the CRR on each of the preceding 60 business days (VaRavg) x multiplication factor (mc) in accordance with Article 366 of the CRR		145
2	**sVaR (higher of values a) and b))**	**5,355**	**428**
a)	Latest SVaR (Article 365(2) of the CRR (SVaRt-1))		101
b)	Average of the SVaR (Article 365(2) of the CRR) during the preceding 60 business days (SVaRavg) x multiplication factor (ms) (Article 366 of the CRR)		428
3	**IRC (higher of values a) and b))**	**534**	**43**
a)	Most recent IRC value (incremental default and migration risks calculated in accordance with Article 370 and Article 371 of the CRR)		43
b)	Average of the IRC number over the preceding 12 weeks		43
4	**Comprehensive risk measure (higher of values a), b) and c))**	**0**	**0**
a)	Most recent risk number for the correlation trading portfolio (Article 377 of the CRR)		0
b)	Average of the risk number for the correlation trading portfolio over the preceding 12 weeks		0
c)	8% of the own funds requirement in the standardised approach on the most recent risk number for the correlation trading portfolio (Article 338(4) of the CRR)		0
5	**Others**	**0**	**0**
6	**Total**	**7,706**	**616**

EU MR2-B: RWA flow statements of market risk exposures under the Internal Model Approach (IMA)

		a	b	c	d	e	f	g
	€m	**VaR**	**SVaR**	**IRC**	**Comprehensive risk measure**	**Others**	**Total RWAs**	**Total capital requirement**
1	**RWAs at previous quarter end**	**2,706**	**6,004**	**1,117**	**0**	**0**	**9,826**	**786**
1a	Regulatory adjustment	0	0	0	0	0	0	0
1b	RWAs at previous quarter end (end of day)	2,706	6,004	1,117	0	0	9,826	786
2	Movement in risk levels	–314	459	–583	0	0	–438	–35
3	Model updates/changes	–553	–632	0	0	0	–1,186	–95
4	Methodology and policy	–20	–476	0	0	0	–496	–40
5	Acquisitions and disposals	0	0	0	0	0	0	0
6	Foreign exchange movements[1]	-	-	-	0	0	-	-
7	Others	0	0	0	0	0	0	0
8a	RWAs at the end of the reporting period (end of day)	1,818	5,355	534	0	0	7,706	616
8b	Regulatory adjustment	0	0	0	0	0	0	0
8	**RWA at the end of the reporting period**	**1,818**	**5,355**	**534**	**0**	**0**	**7,706**	**616**

[1] Changes of RWA which are due to foreign exchange movements are reported under „Movement in risk levels".

The decline in RWA in the row Model updates/changes results from the release of a capital buffer for the introduction of a new interest rate model. The reduced RWA in the row Methodology and policy results from changes in the treatment of foreign exchange risks on future income from positions categorised as loans and receivables and on valuation adjustments (CVA/DVA/FVA) for derivative positions. The changes in risk levels cover position and market changes including changes of exchange rates.

Market risk in the trading book

Below, we show how the regulatory market risk ratios of the trading book portfolio developed. Most of Commerzbank's trading book positions derive from the Corporate Clients segment and Treasury division.

The VaR (10 days 99%) fell from €47m to €30m over the year. A key reason was position changes in the Corporate Clients segment, the Treasury division and lower market volatilities.

The market risk profile is diversified across all asset classes. The dominant asset classes are interest rate, foreign exchange and equity price risks. To a lesser extent, value at risk is also affected by credit spread, commodity and inflation risks.

Further risk ratios are calculated for regulatory capital adequacy. This includes the calculation of stressed VaR. Stressed VaR is calculated using the internal model on the basis of the VaR method described above. The main difference lies in the market data used to value the assets. Stressed VaR measures the risk in the present position in the trading book by reference to market movements from a specified crisis period in the past. The crisis observation period used for this is checked regularly through model validation and approval processes and adjusted where necessary. The crisis observation period remained the same in the course of the year.

In addition, the incremental risk charge and the equity event VaR figures quantify the risk of deterioration in creditworthiness and event risks in trading book positions. Equity event VaR is conceptually part of the historical simulation taking into account empirical equity events over long observation periods. It is a component in the regulatory VaR calculation and included in the values of the following table EU MR3. Commerzbank does not have an internal model for correlation trading activities.

The incremental risk charge is based on the credit VaR model with historical data for rating migration and default probabilities and for recovery factors. The model shows current gains and losses on positions in the event of rating changes. In addition, in calculating the incremental risk charge, assumptions are made regarding liquidity (average regrouping/liquidity horizon). These liquidity horizons are set on a portfolio-specific basis, taking into account market structure and activity and concentrations of positions.

Stressed VaR (10 days 99%) fell by €56m year-on-year to €97m, mainly as a result of exposure changes in the Treasury and Corporate Clients areas. The incremental risk charge declined by €121m to €43m. This was primarily owing to the settlement of a credit linked note and the associated hedge positions in the Corporate Clients segment.

EU MR3: IMA values for trading portfolios

	€m	a
	VaR (10 day 99%)	
1	Maximum value	80
2	Average value	46
3	Minimum value	28
4	Period end	30
	sVaR (10 day 99%)	
5	Maximum value	164
6	Average value	114
7	Minimum value	77
8	Period end	97
	IRC (99.9%)	
9	Maximum value	166
10	Average value	101
11	Minimum value	28
12	Period end	43
	Comprehensive risk capital charge (99.9%)	
13	Maximum value	-
14	Average value	-
15	Minimum value	-
16	Period end	-

addMR1: Incremental Risk Charge by sub-portfolio

Sub-portfolio	IRC[1] €m	Average regrouping horizon | months
Corporates & Markets	43	5
Treasury	4	12

[1] Excluding diversification effects between sub-portfolios.

Market liquidity risk

In taking steps to ensure economic capital adequacy, Commerzbank also considers market liquidity risk. This is the risk of the Bank not being able to liquidate or hedge risky positions in a timely manner, to the desired extent and on acceptable terms as a result of insufficient liquidity in the market.

The first step is to create a realistic downsizing profile for each portfolio on the basis of its product and risk strategies and an assessment of the market. This enables portfolios to be classified in terms of their convertibility into cash using a "market liquidity factor". The market liquidity factor takes into account the heightened volatility of portfolio value resulting from the extended holding period for risk positions in line with the portfolio's downsizing profile. The market risk of every portfolio is then evaluated based on a one-year view and weighted with the market liquidity factor.

As at the end of 2017, Commerzbank has earmarked €0.1bn in economic capital to cover market liquidity risk in the trading and banking book. Asset-backed securities and structured products in particular have a higher market liquidity risk.

addMR2: Market liquidity VaR

Capital requirement | €m	2017	2016
Minimum	136	193
Average	178	219
Maximum	239	251
Year-end figure	136	217

Interest rate risk in the banking book

Interest rate risk is one of the most significant financial risks posed by banking operations. This includes in particular the risk of value adjustments as a result of interest rate fluctuations over time. The maturity of interest rate positions and their refinancing structure are fundamental factors in the management of interest rate risks. In commercial business, the modelling of interest rate risk includes assumptions on early repayments and on investor behaviour when deposits are open-ended. The risk of a flattening or steepening in the yield curve is also covered. Interest rate risks may also arise if positions are closed as a result of hedging transactions with a different pricing type to the underlying transaction (basis risks). Interest rate risks relate to Commerzbank's banking book and trading book. The combined position of both books results in Commerzbank's overall interest rate risk.

Strategy and organisation

The interest rate risk in the Commerzbank Group's banking book primarily results from commercial business. Interest rate risks arise here if interest rate positions in customer business are not hedged or are only partially hedged. Interest rate risks also arise from the investment models used by the central ALCO (Asset Liability Committee), which comprise in particular the investment and/or refinancing of products without contractually fixed interest rates, e.g. for equity capital, savings and sight deposits.

In the Commerzbank Group, interest rate risk in the banking book is the responsibility of Group Treasury within the scope of the business strategy. In addition to the positions of the central Group Treasury division, the treasury activities of branches and all subsidiaries are also taken into consideration.

Treasury's main tasks include the management of the balance sheet structure and of liquidity risks. The aim is to generate a positive interest margin from interest income and refinancing expenses. This gives rise to interest rate risks if positions are not refinanced with matching maturities and matching currencies.

Management

Commerzbank jointly manages interest rate risk from both the trading and banking book, as well as managing this risk separately for the trading book and banking book. This is done strategically by means of risk policies and operationally by means of appropriate limit systems. The risks are consolidated in central risk management. Central risk management is supplemented by a risk management unit for Treasury within the market risk function.

Interest rate risks in the banking book are managed in line with the business strategy by means of maturity- and currency-congruent refinancing and the use of interest rate derivatives. For example, interest rate swaps with sufficient market liquidity enable a prompt response to management measures. However, some products without fixed maturities, such as sight and savings deposits or equity capital, are available to the Bank in the long term. Here the Bank uses appropriate models to manage interest rate risks and stabilise earnings performance. Our models are regularly monitored.

Quantitative information on interest rate risks in the banking book

The measurement of interest rate risk is completely integrated into the Bank's daily measurement and monitoring of risk. As with the measurement of trading book risks, risks in the banking book are also quantified using the value at risk method. Stress tests and scenario analyses are also calculated on a daily and monthly basis. The stress test calculations as mentioned above are used for this purpose. This standardised procedure is intended to ensure transparency of interest rate risks in both the trading and banking book.

A further control variable for interest rate risks in the banking book is interest rate sensitivities. These indicate how interest income varies following a change in interest rates, for example of one basis point (bp). Interest rate sensitivities are also monitored on a daily and monthly basis. This monitoring takes place at both portfolio and segment level as well as for the Commerzbank Group. For management purposes, interest rate sensitivities are limited to the various maturity bands at both Group and segment level. The main focus is on interest rate sensitivities relating to long maturity periods.

The impact of an interest rate shock on the economic value of the Group's banking books is simulated monthly in compliance with regulatory requirements. In accordance with the Banking Directive, the Federal Financial Supervisory Authority (BaFin) has prescribed two uniform, sudden and unexpected changes in interest rates (+/–200 basis points) to be used by all banks, which have to report on the results of this stress test every quarter.

On this basis, the interest rate shift of +200 basis points would give a potential loss of €1,578m, and the shift of –200 basis points a potential gain of €457m as at 31 December 2017. Commerzbank does therefore not need to be classified as a bank with higher interest rate risk as the negative changes in present value account for less than 20% of regulatory capital.

addMR3: Interest rate risk in the banking book by currency

€m	2017		2016	
Interest rate shock	**–200bp**	**+200bp**	**–200bp**	**+200bp**
EUR	92	–1,587	–311	–1,618
USD	–39	24	147	–67
GBP	361	13	463	–391
JPY	2	5	66	2
CHF	1	9	54	12
Others	41	–42	6	–4
Total	**457**	**–1,578**	**425**	**–2,066**

The potential gains and losses in comparison to 2016 are influenced by movements in the euro and GBP yield curves. In addition, a change in the interest rate positions in Treasury and in the ACR segment affected the EUR and GBP result.

E. Liquidity risk (LR)

We define liquidity risk in a narrower sense as the risk that Commerzbank will be unable to meet its payment obligations on a day-to-day basis. In a broader sense, liquidity risk describes the risk that future payments cannot be funded for the full amount, in the required currency or at standard market conditions, as and when they are due.

Risk management

Strategy and organisation

The Board of Managing Directors adopts the business strategy and the Bank's risk tolerance, which is associated with it. Liquidity risk tolerance is then operationalised by defining the liquidity reserve period and the limit framework. In order to ensure an appropriate liquidity risk management process, the Board of Managing Directors delegates certain competences and responsibilities in connection with the Group-wide liquidity risk strategy to the risk and treasury functions.

The central Asset Liability Committee (ALCO) is responsible for limiting, analysing and monitoring liquidity risk and for strategic liquidity positioning. ALCO is supported by various sub-committees in this.

Risk management

Commerzbank uses a wide range of tools to manage and monitor liquidity risks on the basis of its internal liquidity risk model. The stress scenario within the Bank that underlies the model and is relevant for management purposes allows for the impact of both a bank-specific stress event and a broader market crisis. Binding regulatory requirements are an integral component of the management mechanism.

Group Treasury is responsible for the Group's liquidity management operations. Group Treasury is represented in all major locations of the Group in Germany and abroad and has reporting lines into all subsidiaries.

Commerzbank manages its global liquidity centrally using cash pooling. This approach ensures liquidity resources are used efficiently and that this occurs across all time zones, as Group Treasury units are located in Frankfurt, London, New York and Singapore.

Additional information on this subject can be found in the section "Funding and liquidity of the Commerzbank Group" in the Group Management Report. Liquidity risk is monitored on the basis of the Bank's own liquidity risk model by the independent risk function.

The Bank has established early warning indicators for the purpose of managing liquidity risk. These ensure that appropriate steps can be taken in good time to secure long-term financial solidity.

Risk concentrations can lead to increased outflows of liquidity, particularly in a stress situation, and thus to increased liquidity risk. They can, for example, occur with regard to maturities, large individual creditors or currencies. By means of ongoing monitoring and reporting, emerging risk concentrations in funding can be recognised in a timely manner and mitigated through suitable measures.

This is also applicable for payment obligations in foreign currencies. In addition, the Bank also mitigates a concentration by continuously using broadly diversified sources of funding, particularly diverse customer deposits and capital market instruments.

Commerzbank also ensures that it monitors foreign exchange risks and fulfils the currency matching requirements for highly liquid assets and net liquidity outflows.

In the event of a liquidity crisis, the emergency plan provides for various measures for different types of crisis that can be launched by the central ALCO. The emergency plan forms an integral part of Commerzbank's recovery plan and is updated at least once a year, whereas the individual liquidity emergency measures are checked regularly during the year for plausibility. The emergency plan also defines a clear allocation of responsibilities for the processes to be followed in emergency situations and gives details of any action that may need to be taken.

Information on the encumbrance of assets pursuant to Article 443 CRR can be found in the Annual Report 2017, pages 305-307.

Liquidity risk model

A key component of liquidity risk management is the daily calculation of the liquidity gap profile. The liquidity gap profile shows the deterministic or stochastic inflows and outflows expected in the future on a given reporting date and across all portfolios. This forms the basis for calculating liquidity requirements or excess liquidity per maturity band. This also includes modelling the proportion of customer deposits that will be permanently available, known as the core deposit base.

The liquidity gap profile is also used to set the issuance strategy of the Commerzbank Group, which is operationalised by the Group Treasury division. The Group Finance division is responsible for calculating and allocating liquidity costs on the basis of the liquidity gap profile, which are then incorporated in the management of the segments' business activities.

Based on the methodology of the liquidity gap profile, management mechanisms such as recovery and early warning indicators are limited and monitored accordingly. The liquidity gap profile is limited in all maturity bands. The Group limits are broken down into individual Group units and currencies. The internal liquidity risk model is complemented by the regular analysis of additional adverse, reverse and historic stress scenarios.

Quantification and stress testing

Commerzbank uses a wide range of tools to manage and monitor liquidity risks on the basis of its internal liquidity risk model. In addition to internal economic considerations, liquidity risk modelling also factors in the binding regulatory requirements under the Capital Requirements Regulation (CRR) and the stricter requirements of the Minimum Requirements for Risk Management (MaRisk), the revised version of which has been in place since end-2017. Commerzbank incorporates this within its liquidity risk framework, thereby quantifying the liquidity risk appetite established by the full Board of Managing Directors.

The stress scenarios within the Bank that underlie the model and are relevant for management purposes allow for the impact of both a bank-specific stress event and a broader market crisis. The Commerzbank-specific idiosyncratic scenario simulates a stress situation arising from a rating downgrade of two notches, whereas the market-wide scenario is derived from experience of the subprime crisis and simulates an external, market-wide shock. The main liquidity risk drivers of both scenarios are a markedly increased outflow of short-term customer deposits, above-average drawdown of credit lines, extensions of lending business regarded as commercially necessary, the need to provide additional collateral for secured transactions and the application of higher risk discounts to the liquidation values of assets.

As a complement to the individual scenarios, the Bank also simulates the impact on the liquidity gap profile (net liquidity position) of a scenario that combines idiosyncratic and market-specific effects. The liquidity gap profile is shown for the whole of the modelling horizon across the full spectrum of maturities and follows a multi-level concept. This allows for a nuanced presentation of deterministic and modelled cash flows in existing business on the one hand and the inclusion of prolongations on the other.

The table below shows the liquidity gap profile after application of the respective stress scenarios for periods of one and three months. Significantly more liquidity flows out in a combined scenario compared with the individual scenarios. As at end-2017, in the one-month and three-month periods, the combined stress scenario leaves net liquidity of €16.9bn and €17.1bn respectively.

addLR1: Liquidity gap profile in the stress scenarios

Net liquidity in the stress scenario | €bn		**31.12.2017**
Idiosyncratic scenario	1 month	23.5
	3 months	24.3
Market-wide scenario	1 month	26.3
	3 months	26.5
Combined scenario	1 month	16.9
	3 months	17.1

Liquidity reserves

Significant factors in the liquidity risk appetite include the reserve period, the size of the liquidity reserve portfolio held to compensate for unexpected short-term liquidity outflows, and the limits in the various maturity bands. As the liquidity reserve portfolio consists of highly liquid assets, it functions as a buffer in stress situations. The liquidity reserve portfolio is funded in line with the liquidity risk appetite in order to ensure that it is kept at the required size throughout the entire reserve period stipulated by the Board of Managing Directors.

As at the reporting date, the Bank had a liquidity reserve of €88.3bn in the form of highly liquid assets. A part of this liquidity reserve is held in a separate stress liquidity reserve portfolio managed by Treasury to cover liquidity outflows should a stress event occur and to ensure solvency at all times. In addition, the Bank operates an intraday liquidity reserve portfolio in the amount of €9.7bn as at the reporting date.

The liquidity reserves in the form of highly liquid assets consists of the following three components:

addLR2: Liquidity reserves from highly liquid assets

Liquidity reserves from highly liquid assets €bn	31.12.2017
Highly liquid assets	83.3
of which level 1	77.8
of which level 2A	4.8
of which level 2B	0.7

Liquidity ratios

Throughout 2017, Commerzbank's internal liquidity ratios, including the regulatory liquidity coverage ratio (LCR), were at all times above the limits set by the Board of Managing Directors. The same is true of compliance with the survival period calculation set downby MaRisk and with the external German Liquidity Regulation. At the end of the year, the liquidity ratio under the German Liquidity Regulation (LiqV) stood at 1.55.

In agreement with the Deutsche Bundesbank, BaFin has revised the German Liquidity Regulation (LiqV). One consequence of this is that from 1 January 2018 the Bank is no longer required to comply with the German Liquidity Regulation's liquidity ratio, which has now been replaced by the liquidity coverage ratio (LCR).

The regulatory LCR is integrated in the internal liquidity risk model as a binding secondary condition. The LCR is calculated as the ratio of liquid assets to net liquidity outflows under stressed conditions. It is used to measure whether a bank has a large enough liquidity buffer to independently withstand any potential imbalance between inflows and outflows of liquidity under stressed conditions over a period of 30 calendar days. Following an introductory period, a minimum ratio of 100% must be complied with from 1 January 2018 onwards.

In 2017, Commerzbank significantly exceeded the minimum ratio of 80% stipulated for that year on every reporting date. At year end, the average LCR of the last 12 reporting periods of the Commerzbank Group was 144.61%.

The Bank has established corresponding limits and early warning indicators to ensure the LCR minimum requirements are met.

Further information on the composition of the LCR is given in Note (61) of the Annual Report 2017.

F. Operational risk (OR)

Based on the Capital Requirements Regulation (CRR), Commerzbank defines operational risk (OpRisk) as the risk of loss resulting from the inadequacy or failure of internal processes, people and systems or from external events. This definition includes legal risks; it does not cover strategic or reputational risks. Given its heightened economic significance, compliance risk is managed as a separate risk type. In line with the CRR, however, losses from compliance risks are still incorporated into the model for determining regulatory and economic capital for operational risks.

Risk management

Strategy and organisation

Within Commerzbank, OpRisk and governance issues of the internal control system (ICS) are closely connected in terms of both organisational structure and methodology and are continuously being enhanced. This is because many OpRisk cases are closely linked with failures in the control mechanisms. A properly functioning ICS thereby helps to reduce or avoid losses from operational risks and thus to lower the amount of capital required to cover operational risks in the medium to long term. Conversely, the operational risk management systems enable the ICS to adapt itself consistently to them. The reinforcement of the ICS structure is an essential aspect of the pro-active reduction or prevention of operational risks.

Chaired by the CRO, the Group OpRisk Committee meets four times a year and deals with the management of operational risks within the Commerzbank Group. It also acts as the escalation and decision-making committee for key OpRisk topics that span all areas. The Management Boards and/or the Segment Committees with responsibility for operational risk deal with the management of operational risk in the relevant units. They analyse OpRisk issues that affect them, such as loss events, and define subsequent measures or recommend action.

Commerzbank's OpRisk strategy is approved on an annual basis by the full Board of Managing Directors after it has been discussed and voted upon in the Group OpRisk Committee. The OpRisk strategy describes the risk profile, key elements of the desired risk culture, its management framework and measures to be taken by Commerzbank to manage operational risk.

As such, OpRisk management is based on three consecutive levels (three lines of defence) which, when taken together, are crucial for reaching the given strategic aims.

Risk management

Commerzbank takes an active approach to managing operational risk, aiming to systematically identify OpRisk profiles and risk concentrations and to define, prioritise and implement risk mitigation measures.

Operational risks are characterised by asymmetric distribution of losses. This means that most of the losses are relatively small, while isolated losses with a very low probability of occurrence have the potential to be large and devastating. This makes it necessary not only to limit high loss potential but also to proactively manage losses that can be expected to occur frequently.

To do this, Commerzbank has set up a multi-stage system that brings together the defined limits on economic capital (risk capacity) and those set for operational risk management during the year (risk appetite/tolerance), complemented by rules on the transparent and conscious acceptance and approval of individual risks (risk acceptance).

OpRisk management includes an annual evaluation of the Bank's ICS and a risk scenario assessment. OpRisk loss events are also subject to ongoing analysis and ICS backtesting on an event-driven basis. Where loss events involve ≥ €1m, lessons learned activities are carried out. External OpRisk events at competitors are also systematically evaluated.

A structured, centralised and decentralised reporting system ensures that the management of the Bank and its segments, members of the OpRisk Committee and the supervisory bodies are informed regularly, promptly and fully about operational risk. OpRisk reports are produced quarterly. They contain changes in OpRisk losses, the segments' main loss events, current risk analyses, changes in the capital requirement and the status of measures implemented. Operational risks are also part of the regular risk reporting process to the Board of Managing Directors and to the Risk Committee of the Supervisory Board.

OpRisk model

Commerzbank measures regulatory and economic capital for operational risk using the advanced measurement approach (AMA). The capital charge determined using quantitative methods is supplemented by qualitative components, in line with the requirements of CRR. The AMA is applied throughout the group. Until second quarter of 2017 Commerzbank took account of the capital requirement for a subsidiary not included in the AMA by means of a capital add-on. Since the takeover of the instalment loan portfolio of Commerz Finanz GmbH in August 2017, the loss data of the former subsidiary are taken directly into account in the AMA model.

Quantitative components

The AMA model's quantitative components include internal and external OpRisk loss data along with mathematical/statistical modelling.

Group-wide internal OpRisk loss data in line with regulatory requirements is collected from a starting threshold of €10,000 in a Group-wide loss database. As the internally calculated loss data history cannot always reflect extreme OpRisk events adequately, external OpRisk events must also be factored into the AMA model. For this purpose we use relevant external data from the Operational Riskdata eXchange Association (ORX), Zurich, a data consortium of international banks. For mathematical/statistical modelling, the data is grouped by combinations of business line, event category and region. Loss frequency is modelled on the basis of internal loss data, while distribution is modelled on the basis of internal and external loss data.

Modelling of insurance and alternative OpRisk transfers does not currently take place.

Qualitative components

Qualitative methods (risk scenario assessment and business environment and control system) are used to complement the information from the quantitative model components.

The risk scenario assessment is an ex-ante risk assessment of operational risks. Based on expert opinions and in accordance with the requirements of MaRisk, they serve to identify exceptionall but plausibly possible risk events which could jeopardise the Bank's existence or severely affect its results and incorporate these into modelling.

The business environment and control (BEC) system provides incentives to reduce operational risk and improve risk management. Business environment and internal control factors are shown in the OpRisk model in the form of add-ons and reductions to regulatory and economic OpRisk capital. The BEC system takes into account the following qualitative OpRisk elements:

- Internal control system (ICS): As part of the annual ICS review, the company-wide ICS control mechanism is evaluated in terms of its functionality. To ensure that the internal control system factors are properly represented, the ICS as a BEC subject area consists of three components: ICS self-assessment (assessment by the units carrying out the controls), ICS testing (independent review by internal audit) and ICS documentation (modelling status in the Bank's process model).
- Human resources risk: The human resources risk report prepared by the Group Human Resources division takes into account current areas of human resources activity and presents risk information on the basis of set criteria.
- IT risk: The IT risk report prepared by the Group Services division brings together data relating to IT risk in the areas of IT changes and incidents, IT security and access management. The data cover the four IT security targets: confidentiality, integrity, availability and transparency.
- Key risk indicators (KRIs): KRIs are used to manage operational risk proactively by means of early warning signals.
- OpRisk management: The OpRisk & ICS area evaluates the active OpRisk management of the material units on the basis of a uniform list of criteria. Information on the progress made towards processing audit findings is also included in the BEC system.
- Top-level adjustments (TLAs): TLAs are only used in well-founded exceptional cases to establish a risk buffer for extraordinary changes in the OpRisk environment and include this in the OpRisk capital calculation at short notice. No TLAs are currently applied.

Stress testing and validation

As an integral part of risk management and the risk-bearing capacity concept, stress tests for operational risk are carried out on a regular basis. As a basis for the stress methodology, the AMA model is consistently used to determine the capital requirement, with suitable increases in the relevant influencing factors (such as losses).

To ensure that the AMA model remains appropriate, the measurement approach is validated on a regular basis. The validation covers assessments of both quantitative and qualitative components and the interaction between them. The validation of all AMA components conducted in 2017 confirmed the appropriateness of the model. Insignificant changes are planned or have already been implemented as part of the ongoing development of the AMA measurement system. No need for material additions or changes was identified.

Outlook

On 7 December 2017, the Basel Committee on Banking Supervision finalised the Basel 3 reform package. It provides for a new standardised approach for calculating operational risk capital requirements. Implementation into national law is scheduled to be completed by 2022.

G. Other risks

Beyond the risk types explicitly mentioned in the CRR and presented in the previous chapters, the following risk types were classified as material in the risk inventory for 2017 and are subject to active management within the Commerzbank Group:

- Compliance risk
- Cyber risk
- Property value change risk
- Investment portfolio risk
- Business risk
- Reputational risk
- Model risk.

Information on taking into account the property value change risk, investment portfolio risk and business risk can be found in the chapter on risk-bearing capacity and stress testing in this report. Details on the other risks, particularly on the reputational risk and human resources risk (a sub-category of operational risk) can be found in the risk report of the Annual Report 2017 from page 128 onwards.

Appendix

Appendix 1: Outline of the differences in the scopes of consolidation (entity by entity)

Appendix 2: Calculation of the institution-specific countercyclical capital buffer

Appendix 3: Supplement to equity structure (CAP1)

Appendix 4: Material geographical regions or countries

Appendix 5: Credit risk parameters by geographical location

Appendix 6: Overview – Compliance with the CRR requirements

List of abbreviations

Disclaimer

Appendix 1: Outline of the differences in the scopes of consolidation (entity by entity)

While for Commerzbank Group's Annual Report pursuant to the German Commercial Code the consolidation is based on IFRS, the information in the Disclosure Report is based on the group of companies consolidated for regulatory purposes.

Subsidiaries or companies controlled by the ultimate parent company according to IFRS, which do not belong to the financial sector are not part of the regulatory consolidation, but they are included in the consolidated accounts according to IFRS.

In applying article 436 (b) CRR the differences in the scopes of consolidation for financial accounting and regulatory purposes, respectively, have to be disclosed by the institutions. For this purpose, EBA/GL/2016/11 (Guidelines on disclosure requirements under Part Eight of regulation (EU) No 575/2013 (CRR)) provides the table EU LI3.

All entities for which the method of the accounting consolidation is different from the method of the regulatory consolidation have to be included in the disclosure. On an entity-by-entity level the method of accounting consolidation has to be disclosed and whether and how – under the regulatory scope of consolidation – the entity is recognised, supplemented by a short description of the entity.

Commerzbank complies with these requirements through the table EU LI3 given on the following pages.

EU LI3: Outline of the differences in the scopes of consolidation (entity by entity)

a	b	c	d	e	f	g
	Accounting	Regulatory consolidation				Description
Name of the entity	consolidation	full	pro rata	neither… nor (1)	deducted	of the entity
1. CR Fonds-Verwaltungsgesellschaft mbH	not included (2)				x	
10. CR Fonds-Verwaltungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
11. CR Fonds-Verwaltungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
12. CR Fonds-Verwaltungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
13. CR Fonds-Verwaltungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
14. CR Fonds-Verwaltungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
2. CR Fonds-Verwaltungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
3. CR Fonds-Verwaltungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
4. CR Fonds-Verwaltungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
5. CR Fonds-Verwaltungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
6. CR Fonds-Verwaltungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
7. CR Fonds-Verwaltungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
8. CR Fonds-Verwaltungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
9. CR Fonds-Verwaltungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ABANTITIM Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ABELASSA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ABELASSA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Witt Weiden KG	not included (2)				x	Financial institution (financial firm)
ABODA Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ACARINA Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ACCESSA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ACILIA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ACINA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ACONITA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ACRONA Photovoltaik-Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ACTOSA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ADAMANTA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ADENARA Flugzeug-Leasinggesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ADMEO Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ADMERA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ADRUGA Verwaltungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ADURAMA Verwaltung und Treuhand GmbH	not included (2)				x	Financial institution (financial firm)
AF Beteiligung Elf GmbH	not included (2)				x	Financial institution (financial firm)
AF Beteiligung Neun GmbH	not included (2)				x	Financial institution (financial firm)
AF Beteiligung Zehn GmbH	not included (2)				x	Financial institution (financial firm)
AF Eigenkapitalfonds für deutschen Mittelstand GmbH & Co. KG	not included (2)				x	Financial institution (financial firm)
AF Investment Acht GmbH	not included (2)				x	Financial institution (financial firm)
AF Investment Drei GmbH	not included (2)				x	Financial institution (financial firm)
AF Investment Eins GmbH	not included (2)				x	Financial institution (financial firm)
AF Investment Fünf GmbH	not included (2)				x	Financial institution (financial firm)
AF Investment Sechs GmbH	not included (2)				x	Financial institution (financial firm)
AF Investment Sieben GmbH	not included (2)				x	Financial institution (financial firm)
AF Investment Vier GmbH	not included (2)				x	Financial institution (financial firm)
AF Investment Zwei GmbH	not included (2)				x	Financial institution (financial firm)
AGARBA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
AGASILA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
AHOIH Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
AJOLA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
AKA Ausfuhrkredit-Gesellschaft mbH	at equity				x	Credit institution
AKERA Verwaltung und Treuhand GmbH	not included (2)				x	Financial institution (financial firm)
ALACRITAS Verwaltungs- und Treuhand GmbH	not included (2)				x	Financial institution (financial firm)
ALBELLA Verwaltung und Treuhand GmbH	not included (2)				x	Financial institution (financial firm)
ALBOLA Verwaltung und Treuhand GmbH	not included (2)				x	Financial institution (financial firm)

a	b	c	d	e	f	g
	Accounting	Regulatory consolidation				Description
Name of the entity	consolidation	full	pro rata	neither… nor (1)	deducted	of the entity
ALCARDA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Tübingen KG	not included (2)				x	Financial institution (financial firm)
ALDINGA Verwaltung und Treuhand GmbH	not included (2)				x	Financial institution (financial firm)
ALDULA Verwaltung und Treuhand GmbH	not included (2)				x	Financial institution (financial firm)
ALEMONA Verwaltung und Treuhand GmbH	not included (2)				x	Financial institution (financial firm)
ALFUTURA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ALIVERA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ALLATA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ALLORUM Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ALMARENA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ALMONDA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ALSANTA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ALSENNA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ALUBRA Verwaltung und Treuhand GmbH	not included (2)				x	Financial institution (financial firm)
ALVARA Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ALVINA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
AMALIA Verwaltung und Treuhand GmbH	not included (2)				x	Financial institution (financial firm)
AMERA Verwaltung und Treuhand GmbH	not included (2)				x	Financial institution (financial firm)
AMONEUS Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
AMTERA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ANBANA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ANCAVA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ANDINO Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ANDINO Dritte Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ANDINO Vierte Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ANDINO Zweite Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ANET Verwaltungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ARAFINA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ARAUNA Verwaltung und Treuhand GmbH	not included (2)				x	Financial institution (financial firm)
AREBA Verwaltung und Treuhand GmbH	not included (2)				x	Financial institution (financial firm)
ARVINA Verwaltung und Treuhand GmbH	not included (2)				x	Financial institution (financial firm)
ASCETO Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ASERTUNA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ASERTUNA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Schülke-Mayr KG	not included (2)				x	Financial institution (financial firm)
ASKIBA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ASSANDRA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ASSENTO Photovoltaik-Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ASSERTA Flugzeug-Leasinggesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ASTIRA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ASTRADA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ATUNO Verwaltung und Treuhand GmbH	not included (2)				x	Financial institution (financial firm)
AURESTA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
AVALERIA Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
AVERTUM Flugzeug-Leasinggesellschaft mbH	not included (2)				x	Financial institution (financial firm)
AVIO Verwaltung und Treuhand GmbH	not included (2)				x	Financial institution (financial firm)
AVOLO Flugzeugleasinggesellschaft mbH	not included (2)				x	Financial institution (financial firm)
Actium Leasobjekt Gesellschaft mbH	not included (2)				x	Financial institution (financial firm)
Agate Assets S.A. S014	full (3)			x		Special purpose entity
Alma Atlas Investments Limited	not included (2)				x	Financial institution (financial firm)
Apolline Bail S.A.S.	not included (2)	x				Financial institution (financial firm)
Ariondaz SAS	not included (2)				x	Financial institution (financial firm)
Arvilla Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
BBB Bürgschaftsbank zu Berlin-Brandenburg GmbH	not included (2)				x	Other financial institution
BDH Development Sp. z o.o.	full (3)			x		Special purpose entity
BENE Verwaltung und Treuhand GmbH	not included (2)				x	Financial institution (financial firm)

a	b	c	d	e	f	g
	Accounting	Regulatory consolidation				Description
Name of the entity	consolidation	full	pro rata	neither… nor (1)	deducted	of the entity
BONITAS Mobilien-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
BONITAS Mobilien-Vermietungsgesellschaft mbH & Co. Objekt Friedrichshafen KG	not included (2)				x	Financial institution (financial firm)
BREL-PRO Sp. z.o.o.	not included (2)				x	Financial institution (financial firm)
BTG Beteiligungsgesellschaft Hamburg mbH	not included (2)				x	Financial institution (financial firm)
Blue Amber Fund Management S.A.	not included (2)				x	Asset management company (Fin. Investment mgmt. company)
Borromeo Finance S.r.l.	full (3)			x		Special purpose entity
Bosphorus Capital DAC	full (3)			x		Special purpose entity
Bosphorus Investments DAC	full (3)			x		Special purpose entity
Bürgschaftsbank Brandenburg GmbH	not included (2)				x	Other financial institution
Bürgschaftsbank Mecklenburg-Vorpommern GmbH	not included (2)				x	Other financial institution
Bürgschaftsbank Sachsen GmbH	not included (2)				x	Other financial institution
Bürgschaftsbank Sachsen-Anhalt GmbH	not included (2)				x	Other financial institution
Bürgschaftsbank Thüringen GmbH	not included (2)				x	Other financial institution
Bürgschaftsgemeinschaft Hamburg GmbH	not included (2)				x	Other financial institution
CDBS-Cofonds	full (3)			x		Special purpose entity
CDBS-Cofonds II	full (3)			x		Special purpose entity
CDBS-Cofonds III	full (3)			x		Special purpose entity
CDBS-Cofonds IV	full (3)			x		Special purpose entity
CDBS-Cofonds V	full (3)			x		Special purpose entity
CENULA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
CFB-Fonds Transfair GmbH	not included (2)				x	Financial institution (financial firm)
CIMONUSA Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
Capital Investment Trust Corporation	at equity				x	Asset management company (Fin. Investment mgmt. company)
CoCo Finance II–2 DAC	full (3)			x		Special purpose entity
Commerz Asset Management Asia Pacific Pte Ltd	full (3)			x		Special purpose entity
Commerz Immobilien Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
Commerz Real Asset Verwaltungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
Commerz Real Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
Commerz Real Fund Management S.à.r.l.	not included (2)				x	Asset management company (Fin. Investment mgmt. company)
Commerz Unternehmensbeteiligungs-Aktiengesellschaft	at equity			x		Special purpose entity
CommerzKommunalbau GmbH	not included (2)				x	Financial institution (financial firm)
Commerzbank Asset Management Asia Ltd.	full (3)			x		Special purpose entity
Commerzbank Finance 3 S.à.r.l.	full (3)			x		Special purpose entity
Custody Account Severn Trent Euroclear 11948 @ Citibank	full (3)			x		Special purpose entity
DRABELA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
DRABELA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Stade KG	not included (2)				x	Financial institution (financial firm)
DREBOSTA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
DREBOSTA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Schwerin KG	not included (2)				x	Financial institution (financial firm)
DREDOLA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
DREFLORA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
DRELARA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
DRELARA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Freiburg KG	not included (2)				x	Financial institution (financial firm)
DRELOBA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
DRELOSINA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
DRENITA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
DRESANA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
DTE Energy Center, LLC	at equity			x		Special purpose entity
Danube Delta PLC	full (3)			x		Special purpose entity
Delphi I LLC	at equity				x	Financial institution (financial firm)

a	b	c	d	e	f	g
Name of the entity	Accounting consolidation	Regulatory consolidation				Description of the entity
		full	pro rata	neither… nor (1)	deducted	
Deutsche Börse Commodities GmbH	not included (2)				x	Investment firm
Dr. Gubelt Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
Dr. Gubelt Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
Dr. Gubelt Immobilien Vermietungs-Gesellschaft mbH	not included (2)				x	Financial institution (financial firm)
EHY Real Estate Fund I, LLC	not included (2)				x	Financial institution (financial firm)
ELEGANTIA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
EURO Kartensysteme Gesellschaft mit beschränkter Haftung	not included (2)				x	Investment firm
EVIDENTIA Immobilien-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
Entertainment Asset Holdings C.V.	full (3)			x		Special purpose entity
Entertainment Asset Holdings GP B.V.	full (3)			x		Special purpose entity
FORNAX Kraftwerk-Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
FRAST Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
FRAST Beteiligungsgesellschaft mbH & Co. Objekt Kokerei KG	not included (2)				x	Financial institution (financial firm)
FUCATUS Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
FUGA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
FUNGOR Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
FV Holding S.A.	at equity			x		Special purpose entity
FXSpotStream Asia GK	not included (2)				x	None-core services provider included in an institution's consolidated financial assets
FXSpotStream Europe Ltd.	not included (2)				x	None-core services provider included in an institution's consolidated financial assets
FXSpotStream LLC	not included (2)				x	None-core services provider included in an institution's consolidated financial assets
Fernwärmenetz Leipzig GmbH	not included (2)				x	Financial institution (financial firm)
Film Library Holdings LLC	full (3)			x		Special purpose entity
GIE Go Lease	not included (2)				x	Financial institution (financial firm)
GIE Hu Lease	not included (2)				x	Financial institution (financial firm)
GRADARA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
GRADARA Vermietungsgesellschaft mbH & Co. Objekt Neu-Ulm KG	not included (2)				x	Financial institution (financial firm)
GRAFINO Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
GRALANA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
GRAMINA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
GRAMOLDISCUS Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
GRAMOLINDA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
GRASSANO Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
GRATIA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
GRATNOMA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
GRENADO Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
GRENADO Vermietungsgesellschaft mbH & Co. Objekt Brigachschiene KG	not included (2)				x	Financial institution (financial firm)
GRETANA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
GRONDOLA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
GROSINA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
GROTEGA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
GRUMENTO Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
GRUMOSA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
GRUNATA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
Garbary Sp. z o.o.	full (3)			x		Special purpose entity
Gesellschaft für Kreditsicherung mbH	not included (2)				x	Financial institution (financial firm)
Green Loan Fund I	full (3)			x		Special purpose entity
Gresham Leasing March (3) Limited	not included (2)				x	Financial institution (financial firm)
HAGIA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)

a	b	c	d	e	f	g
	Accounting	Regulatory consolidation				Description
Name of the entity	consolidation	full	pro rata	neither… nor (1)	deducted	of the entity
HAJOBANTA GmbH	not included (2)				x	Financial institution (financial firm)
HAJOBANTA GmbH & Co. Asia Opportunity I KG	at equity			x		Special purpose entity
HAJOBURGA Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
HAJOGA-US Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
HAJOLENA Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
HAJOLINDA Beteiligungsgesellschaft GmbH	not included (2)				x	Financial institution (financial firm)
HAJOLUCA Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
HAJOMA Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
HAJOMINA Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
HAJORALDIA Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
HAJOSINTA Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
HAJOSOLA Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
HAJOTARA Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
HALOS Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Göttingen KG	not included (2)				x	Financial institution (financial firm)
HDW Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
Hamudi S.A.	not included (2)				x	Financial institution (financial firm)
Histel Beteiligungs GmbH	not included (2)				x	Financial institution (financial firm)
ILV Immobilien-Leasing Verwaltungsgesellschaft Düsseldorf mbH	at equity				x	Financial institution (financial firm)
ILV-Fonds-Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
J. F. Müller & Sohn Aktien-Gesellschaft	not included (2)				x	Financial institution (financial firm)
J. F. Müller & Sohn Beteiligungs GmbH	not included (2)				x	Financial institution (financial firm)
JBBK Verwaltungs S.à.r.l.	not included (2)				x	Financial institution (financial firm)
Justine Capital SRL	full (3)			x		Special purpose entity
Kommanditgesellschaft MS "CPO ALICANTE" Offen Reederei GmbH & Co.	full (3)			x		Special purpose entity
Kommanditgesellschaft MS "CPO ANCONA" Offen Reederei GmbH & Co.	full (3)			x		Special purpose entity
Kommanditgesellschaft MS "CPO BILBAO" Offen Reederei GmbH & Co.	full (3)			x		Special purpose entity
Kommanditgesellschaft MS "CPO MARSEILLE" Offen Reederei GmbH & Co.	full (3)			x		Special purpose entity
Kommanditgesellschaft MS "CPO PALERMO" Offen Reederei GmbH & Co.	full (3)			x		Special purpose entity
Kommanditgesellschaft MS "CPO TOULON" Offen Reederei GmbH & Co.	full (3)			x		Special purpose entity
Kommanditgesellschaft MS "CPO VALENCIA" Offen Reederei GmbH & Co.	full (3)			x		Special purpose entity
Koppelenweg I BV	not included (2)				x	Financial institution (financial firm)
LIVIDA MOLARIS Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
LOUISENA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
LUTEA MOLARIS Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
LiquidityMatch LLC	not included (2)				x	Financial institution (financial firm)
Livingstone Mortgages Limited	full (3)			x		Special purpose entity
MARBINO Vermietungsgesellschaft mbH & Co. Objekt BBS Stade KG	not included (2)				x	Financial institution (financial firm)
MARBREVA Vermietungsgesellschaft mbH & Co. Objekt AOK Rheinland-Pfalz KG	not included (2)				x	Financial institution (financial firm)
MARIUS Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLANA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLANA Vermietungsgesellschaft mbH & Co. Objekt Gymnasium Harsefeld KG	not included (2)				x	Financial institution (financial firm)
MOLANCONA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLANDA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLANGA Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLANZIO Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLAREZZO Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLARGA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)

a	b	c	d	e	f	g
	Accounting	Regulatory consolidation				Description
Name of the entity	consolidation	full	pro rata	neither… nor (1)	deducted	of the entity
MOLARIS Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLARIS Geschäftsführungs GmbH	not included (2)				x	Financial institution (financial firm)
MOLARIS Grundstücksverwaltung GmbH	not included (2)				x	Financial institution (financial firm)
MOLARIS Immobilienverwaltung GmbH	not included (2)				x	Financial institution (financial firm)
MOLARIS Managementgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLARIS Objektverwaltung GmbH	not included (2)				x	Financial institution (financial firm)
MOLARISSA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLAROSA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLASSA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLASSA Vermietungsgesellschaft mbH & Co. Objekt Herten KG	not included (2)				x	Financial institution (financial firm)
MOLATHINA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLBAKKA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLBARVA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLBERA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLBERNO Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLBOLLA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLBONA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLBONA Vermietungsgesellschaft mbH & Co. Objekt Schulgebäude Stade KG	not included (2)				x	Financial institution (financial firm)
MOLBRIENZA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLBURGA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLCAMPO Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLCENTO Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLCORA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLDEO Mobilien-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLDEO Mobilien-Vermietungsgesellschaft mbH & Co. Objekt Lünen KG	not included (2)				x	Financial institution (financial firm)
MOLDOMA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLDORA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLEMPA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLETUM Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLFOKKA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLFUNDA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLGABA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLGEDI Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLGERO Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLIGELA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLIGELA Vermietungsgesellschaft mbH & Co. Objekt Celle KG	not included (2)				x	Financial institution (financial firm)
MOLIGO Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLIGO Vermietungsgesellschaft mbH & Co. Objekte Schulsanierungen Rostock KG	not included (2)				x	Financial institution (financial firm)
MOLISTA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLISTA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Gesamtschule Peine KG	not included (2)				x	Financial institution (financial firm)
MOLITA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLITA Vermietungsgesellschaft mbH & Co. Objekt Klinikum Barmbek KG	not included (2)				x	Financial institution (financial firm)
MOLITA Vermietungsgesellschaft mbH & Co. Objekt TPFZ Hannover KG	not included (2)				x	Financial institution (financial firm)
MOLKANDIS Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Kaltenkichen KG	not included (2)				x	Financial institution (financial firm)
MOLMARTA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLMIRA Vermietungsgesellschft mbH	not included (2)				x	Financial institution (financial firm)
MOLOTA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLPANA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLPERA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLPETTO Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)

a	b	c	d	e	f	g
Name of the entity	Accounting consolidation	Regulatory consolidation full	pro rata	neither… nor (1)	deducted	Description of the entity
MOLPETTO Vermietungsgesellschaft mbH & Co. Objekt Bracht KG	not included (2)				x	Financial institution (financial firm)
MOLPIKA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLPIREAS Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLPURA Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLRANO Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLRATUS Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLRATUS Vermietungsgesellschaft mbH & Co. Objekt Loxstedt KG	not included (2)				x	Financial institution (financial firm)
MOLRISTA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLRONDA Vermietungsgesellschaft mbH & Co. Objekt Nürnberg KG	not included (2)				x	Financial institution (financial firm)
MOLSANA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLSCHORA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLSOLA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLSOLA Vermietungsgesellschaft mbH & Co. Objekt Geminus KG	not included (2)				x	None-core services provider included in an institution's consolidated financial assets
MOLSOLA Vermietungsgesellschaft mbH & Co. Objekt Halle Markt 11 KG	not included (2)				x	None-core services provider included in an institution's consolidated financial assets
MOLSOLA Vermietungsgesellschaft mbH & Co. Objekt Halle Riegel KG	not included (2)				x	None-core services provider included in an institution's consolidated financial assets
MOLSTEFFA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLSTINA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLSURA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLTANDO Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLTANDO Vermietungsgesellschaft mbH & Co. Objekt Kassel KG	not included (2)				x	Financial institution (financial firm)
MOLTARA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLTIVOLA Vermietungsgesellschaft mbH & Co. Objekt Gladbeck KG	not included (2)				x	Financial institution (financial firm)
MOLUGA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLVANI Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLWALLA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLWANKUM Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLWARGA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MOLWORUM Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MONATA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
MONEA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
Magnascope GmbH	not included (2)				x	Financial institution (financial firm)
Main Incubator GmbH	not included (2)				x	Financial institution (financial firm)
Marie Lease S.à r.l.	not included (2)				x	Financial institution (financial firm)
Mittelständische Beteiligungsgesellschaft Berlin-Brandenburg GmbH	not included (2)				x	Financial institution (financial firm)
Mittelständische Beteiligungsgesellschaft Mecklenburg-Vorpommern mbH	not included (2)				x	Financial institution (financial firm)
Mittelständische Beteiligungsgesellschaft Niedersachsen (MBG) mbH	not included (2)				x	Financial institution (financial firm)
Mittelständische Beteiligungsgesellschaft Sachsen mbH	not included (2)				x	Financial institution (financial firm)
Mittelständische Beteiligungsgesellschaft Sachsen-Anhalt (MBG) mbH	not included (2)				x	Financial institution (financial firm)
Mittelständische Beteiligungsgesellschaft Thüringen mbH	not included (2)				x	Financial institution (financial firm)
NACOLO Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NACONA Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NACONGA Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NAFARI Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NAFIRINA Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NASIRO Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)

a	b	c	d	e	f	g
	Accounting	Regulatory consolidation				Description
Name of the entity	consolidation	full	pro rata	neither… nor (1)	deducted	of the entity
NASTO Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NAUCULA Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NAULUMO Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NAURANTO Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NAURATA Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NAUSOLA Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NAUTARO Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NAUTESSA Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NAUTIS Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NAUTLUS Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NAUTO Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NAUTORIA Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NAUTUGO Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NAVALIS Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NAVIBOLA Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NAVIBOTO Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NAVIFIORI Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NAVIGA Schiffsbeteiligung GmbH	not included (2)				x	Financial institution (financial firm)
NAVIGATO Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NAVIGOLO Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NAVILO Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NAVINA Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NAVIRENA Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NAVIROSSA Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NAVITA Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NAVITARIA Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NAVITONI Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NAVITOSA Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NAVITURA Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NEPTANA Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NEPTILA Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NEPTORA Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NEPTUGA Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NEPTUNO Schiffsbetriebsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NERVUS Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NESTOR Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NOLICA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NORA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NORA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Castrop-Rauxel KG	not included (2)				x	Financial institution (financial firm)
NORA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Koblenz-Kesselheim KG	not included (2)				x	Financial institution (financial firm)
NORA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekte Plön und Preetz KG	not included (2)				x	Financial institution (financial firm)
NOSCO Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NOTITIA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
NURUS Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
OLEANDRA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
OPTIONA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ORBITA Kraftwerk-Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ORNATUS Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
OSKAR Medienbeteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
Octopus Investment Sp. z o.o.	not included (2)				x	Financial institution (financial firm)
PAREO Kraftwerk-Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
PATELLA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)

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Name of the entity	Accounting consolidation	Regulatory consolidation				Description of the entity
		full	pro rata	neither… nor (1)	deducted	
PATELLA Vermietungsgesellschaft mbH & Co. Objekt Bibliothek Berlin KG	not included (2)				x	Financial institution (financial firm)
PATELLA Vermietungsgesellschaft mbH & Co. Objekt Collegium Hungaricum KG	not included (2)				x	Financial institution (financial firm)
PATELLA Vermietungsgesellschaft mbH & Co. Objekt Pulvermühle KG	not included (2)				x	Financial institution (financial firm)
PATELLA Vermietungsgesellschaft mbH & Co. Objekt Technikmuseum KG	not included (2)				x	Financial institution (financial firm)
Pantheon Master Fund PLC	full (3)			x		Special purpose entity
Polski Standard Platnosci Sp. z o.o.	not included (2)				x	None-core services provider included in an institution's consolidated financial assets
RA Holding Corp.	not included (2)				x	Financial institution (financial firm)
RALTO Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
RAMONIA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
RAMONIA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Friedrichshafen KG	not included (2)				x	Financial institution (financial firm)
RAMONIA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Lichtenau KG	not included (2)				x	Financial institution (financial firm)
RAMONIA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt München-Haar KG	not included (2)				x	Financial institution (financial firm)
RANA Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
RAPIDA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
RAYMO Vierte Portfolio GmbH	not included (2)				x	Financial institution (financial firm)
RECURSA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
RESIDO Flugzeug-Leasinggesellschaft mbH	not included (2)				x	Financial institution (financial firm)
RIPA Medien-Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ROSARIA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ROSARIA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Dettingen KG	not included (2)				x	Financial institution (financial firm)
ROSARIA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Frechen KG	not included (2)				x	Financial institution (financial firm)
ROSARIA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Gymnasium Buchholz KG	not included (2)				x	Financial institution (financial firm)
ROSARIA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Kahl KG	not included (2)				x	Financial institution (financial firm)
ROSARIA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Ochsenfurt KG	not included (2)				x	Financial institution (financial firm)
ROSARIA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Peugeot KG	not included (2)				x	Financial institution (financial firm)
ROSARIA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Singen KG	not included (2)				x	Financial institution (financial firm)
ROSATA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ROSATA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Garching KG	not included (2)				x	Financial institution (financial firm)
ROSATA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Neustadt-Schwaig KG	not included (2)				x	Financial institution (financial firm)
ROSEA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ROSEA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Essen KG	not included (2)				x	Financial institution (financial firm)
ROSEA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Ettlingen KG	not included (2)				x	Financial institution (financial firm)
ROSEA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt ISF Sindlingen KG	not included (2)				x	Financial institution (financial firm)
ROSEA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Köngen KG	not included (2)				x	Financial institution (financial firm)
ROSEA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Oelkinghausen KG	not included (2)				x	Financial institution (financial firm)
ROSEA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Schwalbach KG	not included (2)				x	Financial institution (financial firm)
ROSEA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Schweinfurt KG i.L.	not included (2)				x	Financial institution (financial firm)

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	Accounting	Regulatory consolidation				Description
Name of the entity	consolidation	full	pro rata	neither… nor (1)	deducted	of the entity
ROSEA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekte TANK & RAST KG	not included (2)				x	Financial institution (financial firm)
ROSINTA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ROSOLA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
ROSOLA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Lünen/Soest KG	not included (2)				x	Financial institution (financial firm)
ROSOLA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Wetzlar KG	not included (2)				x	Financial institution (financial firm)
S.N.C. Rivoli Palais Royal 2	not included (2)	x				Financial institution (financial firm)
SENATORSKA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
SOLTRX Transaction Services GmbH	not included (2)	x				None-core services provider included in an institution's consolidated financial assets
TALORA Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
TAMOLDINA Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
TIGNARIS Beteiligungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
TIGNARIS Beteiligungsgesellschaft mbH & Co. Objekt Burscheid KG	not included (2)				x	Financial institution (financial firm)
TIGNARIS Beteiligungsgesellschaft mbH & Co. Objekt Heidelberg KG	not included (2)				x	Financial institution (financial firm)
TIGNARIS Beteiligungsgesellschaft mbH & Co. Objekt Kleve KG	not included (2)				x	Financial institution (financial firm)
TIGNARIS Beteiligungsgesellschaft mbH & Co. Objekt Ostfildern KG	not included (2)				x	Financial institution (financial firm)
TIGNARIS Beteiligungsgesellschaft mbH & Co. Objekt Überherrn KG	not included (2)				x	Financial institution (financial firm)
TIGNARIS Beteiligungsgesellschaft mbH & Co. Streubesitz KG	not included (2)				x	Financial institution (financial firm)
TIGNARIS Verwaltungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
Twins Financing LLC	full (3)			x		Special purpose entity
Windpark Karche 2 Verwaltungs GmbH	not included (2)				x	Financial institution (financial firm)
Windpark Ottweiler-Bexbach Verwaltungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
Windsor Canada Verwaltungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)
mCorporate Finance S.A.	not included (2)				x	Financial institution (financial firm)
mLocum S.A.	at equity			x		Special purpose entity
paydirekt GmbH	not included (2)				x	None-core services provider included in an institution's consolidated financial assets
quatron Grundstücks-Vermietungsgesellschaft mbH	not included (2)				x	Financial institution (financial firm)

(1) neither consolidated nor deducted
(2) not included due to subordinated importance
(3) fully consolidated

Appendix 2: Calculation of the institution-specific countercyclical capital buffer

APP2: Geographical distribution of credit exposures relevant for the calculation of the countercyclical buffer

	General credit exposure		Trading book exposure		Securitisation exposure		Capital requirements					
Countries €m	Exposure value (SA)	Exposure value (IRB)	Sum of long and short position of trading book	Value of trading book exposure (internal models)	Exposure value (SA)	Exposure value (IRB)	Of which: General credit exposures	Of which: Trading book exposures	Of which: Securitisation exposures	Total	Own funds requirements weights	Countercyclical capital buffer rate | %
Germany	12,052	169,164	0	467	43	12,058	4,483	4	118	4,736	0.521	0.00
Poland	4,407	19,342	0	0	0	0	1,065	0	0	1,129	0.124	0.00
Great Britain / Nothern Ireland	3,819	11,017	0	139	234	1,731	628	7	21	656	0.072	0.00
USA	712	9,375	0	28	3,436	545	499	7	67	573	0.063	0.00
France	94	6,077	0	169	4	205	241	7	1	250	0.027	0.00
Netherlands	27	3,773	0	95	201	30	143	7	3	154	0.017	0.00
Switzer-land	25	4,191	0	73	0	0	122	3	0	125	0.014	0.00
Italy	111	2,079	0	61	40	2	110	5	5	120	0.013	0.00
Luxembourg	133	3,644	0	12	0	35	113	4	1	118	0.013	0.00
Cayman Islands	319	934	0	0	0	0	112	0	0	112	0.012	0.00
Spain	0	1,965	0	6	68	0	96	2	2	101	0.011	0.00
China	0	1,943	0	3	0	0	63	2	0	65	0.007	0.00
Czech Republic	321	897	0	0	0	0	60	0	0	60	0.007	0.50
Russian Federation	23	778	0	21	0	0	45	15	0	60	0.007	0.00
Isle of Man	0	387	0	0	0	0	60	0	0	60	0.007	0.00
Austria	63	1,644	0	17	0	73	58	1	0	59	0.007	0.00
Belgium	59	1,390	0	16	0	0	57	1	0	58	0.006	0.00
Cyprus	0	415	0	0	0	0	53	0	0	53	0.006	0.00
Ireland	210	978	0	40	0	0	45	3	0	48	0.005	0.00
Turkey	5	535	0	18	0	0	36	7	0	42	0.005	0.00
Liberia	0	337	0	0	0	0	42	0	0	42	0.005	0.00
Marshall Islands	0	213	0	0	0	0	40	0	0	40	0.004	0.00
Sweden	50	1,145	0	37	0	0	37	3	0	40	0.004	2.00
Cook Islands	0	429	0	0	0	0	2	0	0	40	0.004	0.00
Hungary	7	958	0	6	0	0	33	0	0	33	0.004	0.00
Portugal	19	776	0	1	22	0	31	0	1	32	0.003	0.00
Singapore	15	757	0	0	0	0	30	0	0	30	0.003	0.00
Jersey	32	323	0	0	0	0	23	0	0	23	0.003	0.00
Slovakia	86	325	0	0	0	0	22	0	0	22	0.002	0.50
Denmark	0	547	0	15	0	0	17	3	0	21	0.002	0.00
Japan	1	314	0	1	0	0	20	0	0	20	0.002	0.00
Finland	0	456	0	7	0	0	14	0	0	15	0.002	0.00
Virgin Islands (brit)	12	100	0	0	0	0	14	0	0	14	0.002	0.00
Canada	4	348	0	5	0	0	12	1	0	13	0.001	0.00
Hong Kong	0	379	0	0	0	0	12	0	0	12	0.001	1.25
Norway	0	263	0	16	0	0	12	0	0	12	0.001	2.00
Brazil	42	31	0	9	0	0	4	4	0	9	0.001	0.00

APP2_cont.: Geographical distribution of credit exposures relevant for the calculation of the countercyclical buffer

	General credit exposure		Trading book exposure		Securitisation exposure		Capital requirements					
Countries €m	**Exposure value (SA)**	**Exposure value (IRB)**	**Sum of long and short position of trading book**	**Value of trading book exposure (internal models)**	**Exposure value (SA)**	**Exposure value (IRB)**	**Of which: General credit exposures**	**Of which: Trading book exposures**	**Of which: Securitisation exposures**	**Total**	**Own funds requirements weights**	**Countercyclical capital buffer rate | %**
Korea (South)	0	427	0	245	0	0	8	0	0	8	0.001	0.00
South Africa	1	104	0	5	0	0	4	4	0	8	0.001	0.00
Greece	0	92	0	0	0	0	7	0	0	7	0.001	0.00
Mexico	0	48	0	6	0	0	1	6	0	7	0.001	0.00
Bermuda	0	221	0	0	0	0	7	0	0	7	0.001	0.00
Australia	0	255	0	1	1	0	6	0	0	6	0.001	0.00
Taiwan	22	24	0	0	0	0	5	0	0	5	0.001	0.00
Malta	0	83	0	0	0	0	5	0	0	5	0.001	0.00
Ghana	0	44	0	0	0	0	4	0	0	4	0.000	0.00
Columbia	0	0	0	4	0	0	0	3	0	3	0.000	0.00
Panama	0	93	0	0	0	0	3	0	0	3	0.000	0.00
Quatar	0	69	0	0	0	0	3	0	0	3	0.000	0.00
Mongolia	0	44	0	0	0	0	3	0	0	3	0.000	0.00
UAE	1	184	0	0	0	0	2	0	0	2	0.000	0.00
Slovenia	0	15	0	0	0	0	2	0	0	2	0.000	0.00
Malaysia	2	68	0	0	0	0	2	0	0	2	0.000	0.00
Curacao	0	73	0	0	0	0	2	0	0	2	0.000	0.00
Greenland	0	39	0	0	0	0	2	0	0	2	0.000	0.00
Rep. of Iceland	0	1	0	0	0	0	2	0	0	2	0.000	1.25
Israel	1	56	0	1	0	0	1	0	0	1	0.000	0.00
Romania	0	111	0	0	0	0	1	0	0	1	0.000	0.00
Peru	0	20	0	0	0	0	1	0	0	1	0.000	0.00
Liechtenstein	0	90	0	0	0	0	1	0	0	1	0.000	0.00
Mauritius	0	14	0	0	0	0	1	0	0	1	0.000	0.00
Kazakhstan	0	12	0	0	0	0	1	0	0	1	0.000	0.00
Lebanon	0	14	0	0	0	0	1	0	0	1	0.000	0.00
New Zealand	0	80	0	0	0	0	1	0	0	1	0.000	0.00
Belarus	0	5	0	0	0	0	1	0	0	1	0.000	0.00
Indonesia	0	23	0	0	0	0	1	0	0	1	0.000	0.00
India	0	22	0	0	0	0	1	0	0	1	0.000	0.00
Others	2	331	0	0	0	0	4	0	0	4	0.000	0.00
Total	22,678	250,894	0	1,526	4,048	14,680	8,537	100	220	9,090	1.000	-

APP2: Amount of institution-specific countercyclical capital buffer

€m	**31.12.2017**
Total risk exposure amount	171,368.81
Institution specific countercyclical buffer rate	0.018%
Institution specific countercyclical buffer requirement	30.39

Appendix 3: Supplement to equity structure (CAP1)

Line	(B) Reference to article in the regulation (EU) Nr. 575/2013
1	27 (1), 27, 28, 29, EBA list 26 (3)
1a	EBA list 26 (3)
1b	EBA list 26 (3)
1c	EBA list 26 (3)
2	26 (1) (c)
3	26 (1)
3a	26 (1) (f)
4	486 (2)
4a	483 (2)
5	84, 479, 480
5a	26 (2)
6	
7	34, 105
8	36 (1) (b), 37, 472 (4)
9	
10	36 (1) (c), 38, 472 (5)
11	33 (a)
12	36 (1) (d), 40, 159, 472 (6)
13	32 (1)
14	33 (b)
15	36 (1) (e), 41, 472 (7)
16	36 (1) (f), 42, 472 (8)
17	36 (1) (g), 44, 472 (9)
18	36 (1) (h), 43, 45, 46, 49 (2) (3), 79, 472 (10)
19	36 (1) (i), 43, 45, 47, 48 (1) (b), 49 (1) to (3), 79, 470, 471 (11)
20	
20a	36 (1) (k)
20b	36 (1) (k) (i), 89 to 91
20c	36 (1) (k) (ii), 243 (1) (b), 244 (1) (b), 258
20d	36 (1) (k) (iii), 379 (3)
21	36 (1) (c), 38, 48 (1) (a), 470, 472 (5)
22	48 (1)
23	36 (1) (i), 48 (1) (b), 470, 472 (11)
24	
25	36 (1) (c), 38, 48 (1) (a), 470, 472 (5)
25a	36 (1) (a), 472 (2)
25b	36 (1) (l)
26	
26a	
26a.1	467
26a.2	468
26b	481
27	36 (1) (j)
28	
29	
30	51, 52
31	
32	
33	486 (3)
33a	486 (3)
34	85, 86, 480
35	486 (3)
36	
37	52 (1) (b), 56 (a), 57, 475 (2)
38	56 (b), 58, 475 (3)
39	56 (c), 59, 60, 79, 475 (4)
40	56 (d), 59, 79, 475 (4)
41	
41a	472, 472 (3) (a), 472 (4), 472 (6), 472 (8) (a), 472 (9), 472 (10) (a), 472 (11) (a)
41a.1	472 (3) (a)
41a.2	472 (4)
41a.3	472 (6)
41a.4	472 (8) (a)
41a.5	472 (9)
41a.6	472 (10)
41a.7	472 (11) (a)
41b	477, 477 (3), 477 (4) (a)
41c	467, 468, 481
41c.1	467
41c.2	468
41c.3	481
42	56 (e)
43	
44	
45	
46	62, 63
47	486 (4)
47a	483 (4)
48	87, 88, 480
49	486 (4)
50	62 (c) & (d)
51	
52	63 (b) (i), 66 (a), 67, 477 (2)
53	66 (b), 68, 477 (3)
54	66 (c), 69, 70, 79, 477 (4)
55	66 (d), 69, 79, 477 (4)
56	
56a	472, 472 (3)(a), 472 (4), 472 (6), 472 (8) (a), 472 (9), 472 (10) (a), 472 (11) (a)
56b	475, 475 (2) (a), 475 (3), 475 (4) (a)
56c	467, 468, 481
56c.1	467
56c.2	468
57	
58	

Line	(B) Reference to article in the regulation (EU) Nr. 575/2013
59	
59a	
59a.1	472, 472 (5), 472 (8) (b), 472 (10) (b), 472 (11) (b)
59a.2	475, 475 (2) (b), 475 (2) (c), 475 (4) (b)
59a.3	477, 477 (2) (b), 477 (2) (c), 477 (4) (b)
60	
61	92 (2) (a), 465
62	92 (2) (b), 465
63	92 (2) (c)
64	CRD 128, 129, 130
65	
66	
67	
67a	CRD 131
68	CRD 128
69	
70	
71	

Line	(B) Reference to article in the regulation (EU) Nr. 575/2013
72	36 (1) (h), 45, 46, 472 (10), 56 (c), 59, 60, 475 (4), 66 (c), 69, 70, 477 (4)
73	36 (1) (i), 45, 48, 470, 472 (11)
74	
75	36 (1) (c), 38, 48, 470, 472 (5)
76	62
77	62
78	62
79	62
80	484 (3), 486 (2) & (5)
81	484 (3), 486 (2) & (5)
82	484 (4), 486 (3) & (5)
83	484 (4), 486 (3) & (5)
84	484 (5), 486 (4) & (5)
85	484 (5), 486 (4) & (5)

Appendix 4: Material geographical regions or countries

The following threshold of materiality was taken as a basis for the representation in tables EU CRB-C and EU CR1-C: all countries with a net exposure share of the total exposure of at least 1 %, are disclosed individually within their region, all other countries within that region are summarised under „other countries“. All regions with a net exposure share of the total exposure of at least 1 % are disclosed as individual regions, all remaining regions are summarised as „other regions“. For information purposes only, the following table displays all countries / regions on a single basis with a share in net total exposure of ≥ 0,1%.

Region/Country		Share of total exposure
Region: Western Europe		**78.15%**
1	Germany	56.98%
2	Switzer-land	4.98%
3	UK	4.04%
4	Italy	2.67%
5	France	2.33%
6	Netherlands	1.24%
7	Spain	0.99%
8	Austria	0.74%
9	Belgium	0.62%
10	Sweden	0.59%
11	Luxembourg	0.55%
12	Turkey	0.54%
13	Portugal	0.41%
14	Ireland	0.32%
15	Denmark	0.28%
16	Norway	0.26%
17	Finland	0.18%
18	Cyprus	0.10%
	other countries, each with a share of less than 0.1% of the total exposure	in total about 0.3%
Region: Eastern Europe		**9.24%**
1	Poland	7.13%
2	Czech. Republic	0.75%
3	Russia	0.63%
4	Hungary	0.36%
5	Slovakia	0.16%
	other countries, each with a share of less than 0.1% of the total exposure	in total about 0.2%
Region: North America		**5.61%**
1	USA	4.79%
2	Canada	0.81%
3	Greenland	0.01%

Region/Country		Share of total exposure
Region / Asia		**4.58%**
1	China	1.33%
2	Japan	0.65%
3	South Korea	0.34%
4	Singapore	0.32%
5	Hongkong	0.29%
6	India	0.24%
7	United Arab Emirates	0.17%
8	Quatar	0.14%
9	Bangladesh	0.13%
10	Irak	0.11%
	other countries, each with a share of less than 0.1% of the total exposure	in total about 0.9%
Region: Latin America		**1.22%**
1	Brazil	0.40%
2	Cayman Islands (GBR)	0.25%
3	Bermuda (GBR)	0.11%
	other countries, each with a share of less than 0.1% of the total exposure	in total about 0.5%
Other regions (each country/organisation in itself <0.1%)		**1.20%**
1	Africa	0.63%
2	International organisations	0.20%
3	Oceania	0.14%
4	Others	0.24%

Appendix 5: Credit risk parameters by geographical location

Commerzbank uses its own estimates of LGD for the calculation of risk-weighted exposure amounts. Hence, according to Art. 452 j) (i) CRR, the credit risk parameters (position-weighted average LGD and PD in percent) for each geographical location and each asset class has to be disclosed. This information is given in the following table APP5.

APP5: Credit risk parameters by geographical location (incl. default portfolio, i.e. for default positions PD=1)

	in %	Belgium	China	Germany	France	UK	Hongkong	Italy	Japan	Luxembourg	Netherlands	Austria
Central governments or central banks	Ø LGD		60.29	15.24			31.21		20.00			
	Ø PD		0.18	0.05			0.04		0.19			
Institutions	Ø LGD	39.65	41.52	40.08	39.57	53.77	55.24	41.13	41.01	42.61	41.15	38.80
	Ø PD	0.06	0.50	0.12	0.14	1.28	0.17	0.85	0.07	0.07	0.11	0.26
Corporates	Ø LGD	41.56	37.53	36.07	40.36	42.92	36.50	42.21	40.26	36.36	38.39	39.02
	Ø PD	0.73	0.30	4.73	1.81	1.21	1.88	8.20	0.74	6.06	5.50	16.67
thereof specialised lending	Ø LGD	27.14	40.32	33.82	39.33	32.92	39.29	47.29		46.51	31.33	11.70
	Ø PD	2.24	0.19	13.35	12.14	5.13	0.65	31.77		30.67	11.52	19.75
thereof SMEs	Ø LGD		42.93	35.29	43.85	56.16		55.84		54.43	58.89	39.40
	Ø PD		0.24	6.31	0.07	3.67		0.16		0.18	0.33	0.62
Retail	Ø LGD	22.75	28.95	25.76	23.82	19.55	29.19	22.88	33.23	22.29	25.34	28.72
	Ø PD	0.53	0.95	1.21	0.84	1.35	0.37	1.16	3.48	2.80	1.89	2.11
Secured by mortg. on immov. property, SMEs	Ø LGD			28.35							36.71	
	Ø PD			1.30							0.45	
Sec. by mortg.on immov. property, excl. SMEs	Ø LGD	13.42	12.85	15.29	13.94	13.43	12.72	14.35	14.35	14.67	16.38	14.63
	Ø PD	0.40	0.23	0.82	1.10	0.77	0.17	1.03	0.28	3.61	0.37	0.61
Qualifying revolving	Ø LGD	60.62	55.90	60.23	60.59	59.88	57.19	61.18	62.09	59.96	60.69	59.97
	Ø PD	0.33	0.11	0.50	0.96	0.75	0.07	1.08	2.44	0.50	0.87	0.30
Other, SMEs	Ø LGD	47.71	44.40	41.12	41.29	43.52	42.58	40.69	46.21	46.31	37.04	31.55
	Ø PD	0.20	4.60	4.55	0.44	1.14	1.15	4.17	17.68	0.52	21.93	8.85
Other, excluding SMEs	Ø LGD	33.15	37.70	36.87	24.76	25.01	45.87	19.95	42.92	36.44	36.82	34.94
	Ø PD	0.93	0.47	1.56	0.53	3.13	0.42	0.85	2.76	0.95	1.38	2.76
Total	**Ø LGD**	**40.71**	**41.35**	**30.07**	**40.04**	**46.06**	**38.39**	**41.61**	**23.85**	**37.35**	**38.54**	**38.43**
	Ø PD	**0.60**	**0.41**	**2.49**	**1.50**	**1.23**	**1.11**	**5.23**	**0.23**	**5.01**	**4.69**	**13.65**

APP5_cont.: Credit risk parameters by geographical location (incl. default portfolio, e.g. for default positions PD=1)

	in %	Poland	Russia	Switzer-land	Singa-pore	Slova-kia	Spain	Czech Republic	Hungary	Unit. Arab Emirates	USA
Central governments or central banks	Ø LGD	100.00	100.00	10.00	17.53		45.00	100.00	100.00	99.55	10.00
	Ø PD	0.13	0.35	0.02	0.03		1.56	0.05	0.18	0.11	
Institutions	Ø LGD	37.18	41.06	24.53	54.96	43.76	13.65	44.42	47.00	47.51	36.96
	Ø PD	0.48	3.31	0.06	0.03	0.41	0.44	0.08	12.90	0.30	0.73
Corporates	Ø LGD	40.93	41.15	37.73	39.75	39.39	40.07	38.36	42.45	15.44	42.28
	Ø PD	4.57	0.58	0.38	0.65	1.01	3.63	5.48	4.91	1.11	2.22
thereof specialised lending	Ø LGD	21.14	40.94	26.65	40.78	41.26	41.65	34.94	49.60	42.65	51.91
	Ø PD	9.45	0.36	0.44	0.51	0.36	3.52	1.94	0.75	0.10	0.66
thereof SMEs	Ø LGD	43.09		33.77	43.56	30.00	38.54	64.63	52.52		46.21
	Ø PD	4.36		0.42	0.10	0.17	4.94	63.45	32.65		1.30
Retail	Ø LGD	34.86	19.22	22.82	25.35	38.13	24.45	37.77	41.02	26.83	24.92
	Ø PD	6.87	0.50	0.88	0.35	13.26	0.78	2.39	10.21	0.46	1.05
Secured by mortg. on immov. property, SMEs	Ø LGD	33.09						30.00			
	Ø PD	9.65						0.68			
Sec. by mortg.on immov. property, excl. SMEs	Ø LGD	26.18	14.74	14.69	15.37	27.43	13.27	12.51	11.41	14.62	14.80
	Ø PD	5.00	0.43	0.57	0.29	68.96	0.41	1.74	0.34	0.24	0.74
Qualifying revolving	Ø LGD	62.33	59.77	59.88	56.48	63.44	61.35	62.00	61.39	55.90	61.06
	Ø PD	1.16	0.22	0.59	0.19	0.21	0.25	0.58	0.42	0.43	0.48
Other, SMEs	Ø LGD	36.52	15.86	42.05	36.98	38.72	44.14	37.29	42.78		43.60
	Ø PD	8.93	1.92	1.64	0.89	2.74	4.63	3.11	12.05		1.46
Other, excluding SMEs	Ø LGD	50.74	26.00	29.87	38.68	58.43	24.15	43.18	48.07	35.28	31.44
	Ø PD	8.46	0.58	1.30	0.30	15.00	1.31	1.50	2.81	0.66	1.73
Total	**Ø LGD**	**37.24**	**46.29**	**16.81**	**34.07**	**39.39**	**31.04**	**42.63**	**47.49**	**44.62**	**33.53**
	Ø PD	**5.93**	**1.59**	**0.10**	**0.45**	**1.14**	**2.53**	**4.82**	**5.18**	**0.46**	**1.32**

Appendix 6: Overview – Compliance with the CRR requirements

Commerzbank Group's compliance with the CRR requirements as at 31 December 2017 is given in detail in the following overview APP6.

APP6: Overview – Compliance with the CRR requirements

Article CRR	Topic	Reference to disclosure (Chapter of Disclosure Report or reference to separate document)	Tables
431 - 434	Scope of disclosure requirements Non-material, proprietary or confidential information Frequency and means of disclosures	Introduction > Objective of the Disclosure Report Introduction > Scope Introduction > Waiver rule pursuant to Article 7 CRR	–
435(1) a)-d)	Risk management objectives and policies	Risk-oriented overall bank management > Risk management organisation > Risk strategy and risk management > Risk-bearing capacity and stress testing	–
		Specific risk management > A. Credit risk (CR) > Risk management > B. Counterparty credit risk (CCR) > Risk management > D. Market risk (MR) > Risk management > E. Liquidity risk (LR) > F. Operational risk (OR) > Risk management	–
		Annual Report 2017: > Economic report > Funding and liquidity of the Commerzbank Group	–
		Annual Report 2017: >Notes (61) Liquidity Coverage Ratio	–
435(1) e), f)	Risk management objectives and policies	Risk-oriented overall bank management > Risk statement	–
		Annual Report 2017: > Economic report > Funding and liquidity of the Commerzbank Group	–
		Annual Report 2017: > Notes (61) Liquidity Coverage Ratio	–
435(2) a) - d)	Governance arrangements	Annual Report 2017: Corporate governance report, chapters Board of Managing Directors, Supervisory Board and Diversity Homepage: https://www.commerzbank.de/en/hauptnavigation/aktionaere/governance_/corporate_governace_1.html	–
435(2) e)	Governance arrangements	Risk-oriented overall bank management > Risk management organisation > Risk strategy and risk management	–
436 a)	Scope of application	Introduction > Scope	–
436 b)	Scope of application	Total capital, capital requirement and RWA > Connection between balance-sheet and regulatory positions	EU LI1 EU LI2
		Appendix > Appendix 1	EU LI3
436 c), d)	Scope of application	Total capital, capital requirement and RWA > Connection between balance-sheet and regulatory positions	–
436 e)	Scope of application	not relevant	–
437(1) a) 437(2)	Own funds	Total capital, capital requirement and RWA > Connection between balance-sheet and regulatory positions	CAP2
437(1) b)-c)	Own funds	Homepage: https://www.commerzbank.de/en/hauptnavigation/aktionaere/informationen_f_r_fremdkapitalgeber/kapitalinstrumente/CapitalInstruments.html	–
437(1) d)-f) 437(2)	Own funds	Total capital, capital requirement and RWA > Connection between balance-sheet and regulatory positions Appendix > Appendix 3	CAP1 APP3
438 a), b)	Capital requirements	Risk-oriented overall bank management > Risk-bearing capacity and stress testing	RBC1
438 c)-f)	Capital requirements	Total capital, capital requirement and RWA > Capital requirement and RWA	EU OV1
438 d)	Capital requirements	Specific risk management > A.Credit risk (CR) > Credit risk and credit risk mitigation in the IRBA	EU CR8

Article CRR	Topic	Reference to disclosure (Chapter of Disclosure Report or reference to separate document)	Tables
438 d)	Capital requirements	Specific risk management > B. Counterparty credit risk (CCR) > Information by regulatory risk-weighting approach	EU CCR7
438 letzter Absatz	Capital requirements	Specific risk management > A.Credit risk (CR) > Credit risk and credit risk mitigation in the IRBA	EU CR10
439 a)-c), i)	Counterparty credit risk	Specific risk management > B. Counterparty credit risk (CCR) > Risk management	–
439 d), e), g), h)	Counterparty credit risk	Specific risk management > B. Counterparty credit risk (CCR) > Further information on counterparty credit risk	EU CCR5-A EU CCR5-B EU CCR6 addCCR1
439 e), f), i)	Counterparty credit risk	Specific risk management > B. Counterparty credit risk (CCR) > Information on regulatory methods	EU CCR1 EU CCR2 EU CCR8
440	Capital buffers	Appendix > Appendix 2	APP2
441	Indicators of global systemic importance	Homepage: https://www.commerzbank.de/en/hauptnavigation/aktionaere/informationen_f_r_fremdkapitalgeber/deckungsregister/transparenzangaben.html	–
442 a)-b)	Credit risk adjustments	Specific risk management > A. Credit risk (CR) > Loan loss provisions for default risks	–
442 c)-f)	Credit risk adjustments	Specific risk management > A. Credit risk (CR) > Overarching portfolio analyses	EU CRB-B EU CRB-C EU CRB-D EU CRB-E
		Appendix > Appendix 4	–
442 g)-i)	Credit risk adjustments	Specific risk management > A. Credit risk (CR) > Loan loss provisions for default risks	EU CR1-A EU CR1-B EU CR1-C EU CR1-D EU CR1-E EU CR2-A EU CR2-B
443	Unencumbered assets	Annual Report 2017: > Information on the encumbrance of assets	–
444 a)-e)	Use of ECAIs	Specific risk management >A. Credit risk (CR) > Credit risk and credit risk mitigation in the SACR	EU CR4 EU CR5
444 e)	Use of ECAIs	Specific risk management > B. Counterparty credit risk (CCR) > Information by regulatory risk-weighting approach	EU CCR3
445	Market risk	Specific risk management > D. Market risk (MR) > Quantitative information on market risk	EU MR1
446	Operational risk	Specific risk management > F. Operational risk (OR)	–
447 a) - e)	Exposures in equities not included in the trading book	Specific risk management > A. Credit risk (CR) > Investments in the banking book	INV1 INV2
448 a)	Exposure to interest rate risk on positions not included in the trading book	Specific risk management > D. Market risk (MR) > Interest rate risk in the banking book	addMR3
449 a)-r)	Exposure to securitisation positions	Specific risk management > C. Securitisations (SEC)	SEC1 SEC2 SEC3 SEC4 SEC5 SEC6
450	Remuneration policy	Annual Report 2017: > Remuneration Report Remuneration Report on the homepage: https://www.commerzbank.de/en/hauptnavigation/aktionaere/publikationen_und_veranstaltungen/unternehmensberichterstattung_1/index.html	–

Article CRR	Topic	Reference to disclosure (Chapter of Disclosure Report or reference to separate document)	Tables
451	Leverage	Annual Report 2017: > Notes (59) Regulatory capital requirements > Notes (60) Leverage ratio	–
452 a)-c)	Use of the IRB Approach to credit risk	Specific risk management > A. Credit risk (CR)	VAL0_1 VAL0_2
452 d)-f)	Use of the IRB Approach to credit risk	Specific risk management > A. Credit risk (CR) > Credit risk and credit risk mitigation in the IRBA	EU CR6
		Spezifisches Risikomanagement > B. Counterparty credit risk (CCR) > Information by regulatory risk-weighting approach	EU CCR4
452 g), i)	Use of the IRB Approach to credit risk	Specific risk management >A. Credit risk (CR) > Loan loss provisions for default risks	addCR1 addCR2
452 i), h)	Use of the IRB Approach to credit risk	Specific risk management > A. Credit risk (CR) > Credit risk model > Validation	VAL1 VAL2 EU CR9
452 j)	Use of the IRB Approach to credit risk	Appendix > Appendix 5	APP5
453 a)	Use of credit risk mitigation techniques	Specific risk management > A. Credit risk (CR) > Credit risk mitigation > B. Counterparty credit risk (CCR) > Risk management	–
453 a)-e)	Use of credit risk mitigation techniques	Specific risk management > A. Credit risk (CR) > Credit risk mitigation	CRM1 CRM2
453 f)	Use of credit risk mitigation techniques	Specific risk management > A. Credit risk (CR) > Credit risk and credit risk mitigation in the IRBA	EU CR7
453 f), g)	Use of credit risk mitigation techniques	Specific risk management > A. Credit risk (CR) > Credit risk mitigation	EU CR3
454	Use of the Advanced Measurement Approaches to operational risk	Specific risk management > F. Operational risk (OR)	–
455 a), b)	Use of Internal Market Risk Models	Specific risk management > D. Market risk (MR) > Risk management > D. Market risk (MR) > Market risk model	–
455 c)	Use of Internal Market Risk Models	Specific risk management > D. Market risk (MR) > Risk management > Tradability and measurement of financial instruments	–
455 d)e)	Use of Internal Market Risk Models	Specific risk management > D. Market risk (MR) > Quantitative information on market risk	EU MR2-A EU MR2-B EU MR3 addMR1 addMR2
455 g)	Use of Internal Market Risk Models	Specific risk management > D. Market risk (MR) > Market risk model	EU MR4

List of abbreviations

ABCP	Asset-backed Commercial Paper
ABS	Asset-backed Securities
ACR	Asset & Capital Recovery
AfS	Available for Sale
ALCO	Asset Liability Committee
AMA	Advanced Measurement Approach
A-SRI	Andere systemrelevante Institute
AUC	Area under the curve
BaFin	Federal Financial Supervisory Authority
BEC	Business Environment and Control System
CC	Corporate Clients
CCF	Credit Conversion Factor/Kreditkonversionsfaktor
CEO	Chief Executive Officer
CFCB	Commerzbank Finance & Covered Bond S.A.
CFO	Chief Financial Officer
CMBS	Commercial Mortgage-backed Securities
COO	Chief Operating Officer
COREP	Common solvency ratio reporting
CP	Commercial Paper
CRD	Capital Requirements Directive
CRM	Credit Risk Mitigation
CRO	Chief Risk Officer
CRR	Capital Requirements Regulation
CVA	Credit Valuation Adjustment
CVaR	Credit Value at Risk
EaD	Exposure at Default
EBA	European Banking Authority
ECB	European Central Bank
EL	Expected Loss/Erwarteter Verlust
ErC	Economically required Capital
FINREP	Financial Reporting
GLLP	General Loan Loss Provisions
G-SII	Global Systemically Important Institution
HGB	German Commercial Code
IAA	Internal Assessment Approach
IAS	International Accounting Standards
ICAAP	Internal Capital Adequacy Assessment Process
ICS	Internal Control System
IFRS	International Financial Reporting Standards
IMM	Interne Modelle Methode
IPV	Independent Price Verification
IRBA	Internal Ratings Based Approach
IRC	Incremental Risk Charge
ISDA	International Swaps and Derivatives Association
ISIN	International Securities Identification Number
ITS	Implementing Technical Standards
KRI	Key Risk Indicators
KWG	German Banking Act
LaD	Loss at Default
LaR	Loans and Receivables
LCR	Liquidity Coverage Ratio
LGD	Loss Given Default
LIP	Loss Identification Period
LTA	Look-through Approach
MaRisk	Minimum Requirements for Risk Management
NBFI	Non-Bank Financial Institution
NI	Non-impaired
OpRisk	Operational Risk
ORX	Operational Riskdata eXchange Association, Zürich
P&L	Profit & Loss
PD	Probability of Default
PI	Portfolio Impaired
PSBC	Private and Small Business Customers
RBA	Ratings Based Approach
RBC ratio	Risk-bearing capacity ratio
RMBS	Residential Mortgage-backed Securities
RTS	Regulatory Technical Standards
RW	Risk weight
RWA	Risk-weighted Assets
SACR	Standardised Approach to Credit Risk
SCRA	Specific Credit Risk Adjustment
SFA	Supervisory Formula Approach
SLLP	Specific Loan Loss Provisions
SolvV	German Solvency Regulation
SPV	Special Purpose Vehicles
SREP	Supervisory Review and Evaluation Process
TLA	Top Level Adjustment
VaR	Value at Risk

Disclaimer

Commerzbank's internal risk measurement methods and models which form the basis for the calculation of the figures shown in this report are state-of-the-art and based on banking sector practice. The risk models produce results appropriate to the management of the Bank. The measurement approaches are regularly reviewed by risk control and internal audit, external auditors and the German and European supervisory authorities. Despite being carefully developed and regularly monitored, models cannot cover all the influencing factors that have an impact in reality or illustrate their complex behaviour and interactions. These limits to risk modelling apply particularly in extreme situations. Supplementary stress tests and scenario analyses can only show examples of the risks to which a portfolio may be exposed in extreme market situations. However, stress testing all imaginable scenarios is not feasible. Stress tests cannot offer a final estimate of the maximum loss should an extreme event occur.

The interpretations with regard to CRR/CRD IV rules are still ongoing. Therefore requirements for adjustment may occure due to modified interpretations in the course of the Q&A-process with EBA or due to new binding Technical Standards or guidelines. Against this background we will continue to refine our methods and models in line with the interpretation of the rules. Thus, our measures may not be comparable with previously published measures and our competitors' measures published may differ from ours.

This Annual Report contains forward-looking statements on Commerzbank's business and earnings performance, which are based upon our current plans, estimates, forecasts and expectations. The statements entail risks and uncertainties, as there are a variety of factors which influence our business and to a great extent lie beyond our sphere of influence. Above all, these include the economic situation, the state of the financial markets worldwide and possible loan losses. Actual results and developments may, therefore, diverge considerably from our current assumptions, which, for this reason, are valid only at the time of publication. We undertake no obligation to revise our forward-looking statements in the light of either new information or unexpected events.

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