

Disclosure Report

as at 31 December 2018 according to part 8 CRR



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

This report is a non-binding translation of the original German version of the Disclosure Report (Offenlegungsbericht).

[Tab. 1] Disclosure index according to paragraph 31 of EBA/GL/2016/11

Article in the CRR	Designation	Chapter in the Disclosure Report
431	Scope of disclosure requirements	Introduction and general principles
432	Non-material, proprietary or confidential information	Introduction and general principles
433	Frequency of disclosure	Introduction and general principles
434	Means of disclosures	Introduction and general principles
435	Risk management objectives and policies	Introduction and general principles Liquidity risk Default risk Counterparty credit risk Market risk Operational risk
436	Scope of application	Introduction and general principles
437	Own funds	Own funds and capital requirements
438	Capital requirements	Own funds and capital requirements
439	Exposure to counterparty credit risk	Counterparty credit risk
440	Capital buffers	Countercyclical capital buffer
441	Indicators of global systemic importance	Not relevant for Hamburg Commercial Bank
442	Credit risk adjustments	Default risk
443	Unencumbered assets	Unencumbered assets
444	Use of ECAs	Default risk
445	Exposure to market risk	Market risk
446	Operational risk	Operational risk
447	Exposures in equities not included in the trading book	Default risk
448	Exposure to interest rate risk on positions not included in the trading book	Market risk
449	Exposure to securitisation positions	Securitized positions
450	Remuneration policy	Disclosed in a separate report in the same place as the Disclosure Report
451	Leverage	Leverage ratio
452	Use of the IRB Approach to credit risk	Default risk
453	Use of credit risk mitigation techniques	Default risk
454	Use of the Advanced Measurement Approaches to operational risk	Not relevant for Hamburg Commercial Bank
455	Use of Internal Market Risk Models	Not relevant for Hamburg Commercial Bank

1. Introduction and general principles

1.1. Overview

The disclosure is made in accordance with the regulatory requirements of the Basel III framework (CRR/CRD IV). The objective of disclosure is to strengthen the market discipline of the institutions. For that reason, additional information on the risk profile will be provided for market participants, exceeding the information that have already been published in the Annual Report.

The privatization process of HSH Nordbank AG completed on 11/28/2018 and the rebranding to Hamburg Commercial Bank AG on 02/04/2019, both have a considerable impact on the scope and content of this Disclosure Report. Particularly important are:

- the change in the scope of application (see below),
- the frequency of disclosure (see below),
- the guarantees no longer provided due to the termination of the Sunrise and Horizon securitization transactions and the resulting shift from securitization risk to credit risk,
- the substantial decline in non-performing loans and the reduction of credit risk due to the portfolio transaction.

Additional information on privatization, portfolio transaction and other significant changes are provided in the Management Report (Basis of the Group and Economic Report) and in the Group explanatory notes (Note 2 "Provision of a guarantee facility") of the Hamburg Commercial Bank's Annual Report.

Scope of application

Hamburg Commercial Bank AG (formerly HSH Nordbank AG) is classified as a significant credit institution within the framework of the Single Supervisory Mechanism (SSM) and is directly supervised by the ECB. The consolidated balance sheet total amounts to more than € 30 bn. With BaFin's decision of 12/12/2018 the bank is no longer classified as an Other Systemically Important Institution (O-SII) pursuant to Article 131(3) of Directive 2013/36/EU in conjunction with § 10g(2) KWG (German Banking Act).

Hamburg Commercial Bank AG is the superordinate credit institution (parent institution) within the Hamburg Commercial Bank Group. The disclosure according to Part 8 CRR is made pursuant to Article 13(1) CRR for the Hamburg Commercial Bank Group (hereinafter Hamburg Commercial Bank). The companies that belong to the Group within the meaning of § 10a KWG in conjunction with Article 11 CRR (regulatory

scope of consolidation) must be taken into account. In contrast to this, the accounting scope of consolidation is to be seen in accordance with international accounting standards (IFRS 9), as reflected in the Annual Report of Hamburg Commercial Bank Group.

Table LI3 (see Section 12.1) illustrates the nature of consolidation and the difference between regulatory and accounting consolidation in accordance with Article 436 point (b) CRR. All companies to be consolidated and their allocation to the regulatory scope of consolidation respectively the scope of consolidation for accounting purposes are listed. The allocation of companies to company types is based on the regulatory consolidation and the definitions set out in Article 4(1) CRR.

This Disclosure Report is comparable with the view regarding the sub-group in the previous Disclosure Reports. The view regarding the financial holding group (holding company) with HSH Beteiligungs Management GmbH no longer applies due to the changed ownership structure.

In principle own funds and financial resources can be transferred within Hamburg Commercial Bank pursuant to Article 436 point (c) CRR. The feasibility can be restricted due to existing regulatory requirements or other legal obligations or restrictions. With regard to the capitalization of subsidiaries in which Hamburg Commercial Bank and other shareholders have an interest, the approval of co-shareholders and their committees is also required in the event of a change in equity capital or own funds. In the case of subsidiaries which are also institutions, changes in equity capital have to be coordinated with the relevant banking supervisory authorities.

There is no capital shortfall for subsidiaries within the meaning of Article 436 point (d) CRR. Capital shortfall is the amount which the actual capitalization is less than the regulatory capital required.

Materiality, proprietary and confidentiality

Article 432(1) CRR allows institutions in principle to waive disclosure of one or more of the information referred to in Part 8 Title II CRR if it is not considered to be material. Generally Hamburg Commercial Bank meets all disclosure requirements without restrictions, with one exception, where an aggregation option due to immateriality is used. To meet the requirements of Article 442 points (d) to (f) CRR, some tables aggregate CRSA exposure classes, which represent an insignificant proportion of the total amount of exposure, into an overall CRSA position. Therefore, Hamburg Commercial Bank defines a maximum proportion of 8 % as insignificant. This corresponds to

the regulatory limit for the permanent use of the standardized approach for credit risks (permanent partial use).

In addition, Article 432(2) CRR allows institutions to refrain from disclosing one or more of the items of information referred to in Part 8 Titles II and III CRR, if those items include information which is regarded as proprietary or confidential. Hamburg Commercial Bank has not made use of this option in this report.

Frequency of disclosure

In accordance with Article 433 CRR, Hamburg Commercial Bank publishes the information required under Part 8 CRR fully once a year as at 12/31.

For information to be disclosed more frequently than once a year, Hamburg Commercial Bank complies with the "Guidelines on materiality, proprietary and confidentiality and on disclosure frequency" (EBA/GL/2014/14 as amended by the EBA/GL/2016/11 Version 2 of 06/09/2017) as well as the BaFin Circular 05/2015 (BA)) of 06/08/2015 on the Implementation of this EBA Guideline.

In accordance with Title VII (26) (b) of EBA/GL/2014/14, Hamburg Commercial Bank provides disclosures on own funds, capital requirements, leverage ratio and credit risks semi-annually. In principle Title VII (23) (e) of the EBA/2014/14 requires disclosure of all information which may change rapidly during the year. Hamburg Commercial Bank therefore also publishes essential liquidity key figures semi-annually. Quarterly disclosure is not required as Hamburg Commercial Bank is not systemically relevant.

Means of disclosures

The Disclosure Report is published on Hamburg Commercial Bank's website under "Investor Relations" in accordance with Article 434(1) CRR. The timing and medium of publication are communicated to the supervisory authorities.

Other sources of disclosure

As far as information is published in accordance with other regulations, the disclosure requirements may be deemed to have been met in accordance with Article 434(2) CRR. Hamburg Commercial Bank uses this rule for the topics listed below:

- Article 435(1) CRR requires institutions to disclose their risk management objectives and policies for each risk category, including counterparty credit risk, market risk including interest rate risk and operational risk. Hamburg Commercial Bank's other major risk types include transformation risk and reputational risk. This information is provided in the Group Management Report (Risk Report) of the Hamburg Commercial Bank's Annual Report. The information flow to the management body regarding risk issues is also described there pursuant to Article 435(2)(e) CRR.

- The number of management or supervisory functions held by members of the management body as well as the strategy and diversity strategy for the selection of members of the management body is described pursuant to Article 435(2) points (a) to (c) CRR in the Corporate Governance Report, the Group Management Report (Management declaration pursuant to § 289f and § 315d of the German Commercial Code (HGB)) as well as in the Group notes (Note 66 "Other disclosures in accordance with German commercial law" and Note 67 "Names of Board members and directorships held") of the Hamburg Commercial Bank's Annual Report. Information on the Risk Committee pursuant to Article 435(2)(d) CRR can be found in the Report of the Supervisory Board of the Hamburg Commercial Bank.
- Under Article 438 point (a) CRR an institution shall disclose a qualitative summary of the approach used to assess the adequacy of its internal (economic) capital to support current and future activities. Therefore the internal procedures used to assess capital adequacy in relation to the risk profile as well as the strategy for maintaining the equity capital level must be described. The details are presented in the Group Management Report (Risk Report) of the Hamburg Commercial Bank's Annual Report.
- A description of the approaches and methods applied for determining specific and general risk adjustments pursuant to Article 442 point (b) CRR is provided in the Group Management Report (Risk Report) and in the Group explanatory notes (Note 7 "Accounting and measurement principles") of the Hamburg Commercial Bank's Annual Report.
- Hamburg Commercial Bank fulfills the requirements of Article 450 CRR in conjunction with § 16 (1) of the German Institutional Compensation Ordinance (Institutsvergütungsverordnung) by means of a separate remuneration report. This is published on the Hamburg Commercial Bank's website.

Additional information under § 26a KWG (German banking act)

In accordance with § 26a (1) sentence 1 KWG, the legal and organizational structure as well as the principles of proper management of the Group are described in the Group Management Report (Basis of the Group and Risk Report) of the Hamburg Commercial Bank's Annual Report.

The additional disclosure requirements for disclosure of CRR institutions pursuant to § 26a (1) sentence 2 KWG can be found as an Appendix to the consolidated financial statements ("Country by Country Reporting") in Hamburg Commercial Bank's Annual Report.

Non-relevance and negative declarations

In principle, Hamburg Commercial Bank discloses all information in accordance with Part 8 Titles II and III CRR. However, some of the requirements are not relevant and are therefore not disclosed. With the aim of clarity of disclosure, Hamburg Commercial Bank therefore explicitly lists a negative declaration for the information set out below:

- Hamburg Commercial Bank does not make use of Articles 7 and 9 CRR. Therefore, disclosure is not made in accordance with Article 436 point (e) CRR.
- The capital ratios are calculated exclusively using own funds calculated in accordance with CRR. Accordingly, there is no explanation under Article 437(1)(f) CRR.
- The transitional provisions introducing IFRS 9 in accordance with Article 437 point (a) CRR are not used. Therefore, there is no disclosure under EBA/GL/2018/01.
- Hamburg Commercial Bank's portfolio does not include participations that are subject to grandfathering provisions with regard to capital adequacy requirements. Thus, a statement under Article 438(d) subpoint (iv) CRR is omitted.
- As Hamburg Commercial Bank does not calculate risk exposure in accordance with the provisions of Article 153(5) CRR, no disclosure in accordance with the second sentence of Article 438 CRR for specialized lending is made.
- Hamburg Commercial Bank uses the mark-to-market method for determining counterparty credit risk in accordance with Article 274 CRR. No methods based on internal models as referred to in Articles 283 to 294 CRR are used. Accordingly, no information according to Article 439 points (c) and (i) CRR on the correlation risk pursuant to Article 291 CRR or on the estimate of the value under Article 284 CRR are disclosed.
- Information pursuant to Article 441 CRR is not disclosed, as Hamburg Commercial Bank has not been classified as globally systemically relevant.
- Hamburg Commercial Bank does not hold any securitization positions in the trading book. For this reason, no information is provided on the specific interest rate risk pursuant to Article 445 CRR or trading book securitization positions under Article 449 CRR, including the omission of the description pursuant to Article 449 point (q) CRR.
- Hamburg Commercial Bank's portfolio does not contain any re-securitization receivables. Therefore, no disclosure according to Article 449 CRR, inter alia, Article 449(c) and (o) subpoint (ii) CRR is made.
- Hedging transactions for further retained re-securitization and other securitization positions did not exist at the reporting date. Therefore, there is no disclosure under Article 449 point (g) CRR.
- Hamburg Commercial Bank does not use an internal assessment approach for securitizations pursuant to Part 3 Title II Chapter 5 Section 3 CRR. Accordingly, no information is provided in respect of Article 449 point (l) CRR.
- Hamburg Commercial Bank's portfolio does not include any securitized facilities with an early termination clause. Therefore, there is no disclosure under Article 449(n) subpoint (iv) CRR.
- Hamburg Commercial Bank is not active as an originator of securitizations. Therefore, a disclosure pursuant to Article 449 point (p) CRR is omitted.
- Hamburg Commercial Bank has not provided support under Article 248(1) CRR. A claim under Article 449 point (r) CRR is therefore not made.
- Hamburg Commercial Bank uses its own estimates of LGD and conversion factors for risk position vis-à-vis central governments, central banks, institutions and corporates. Accordingly, there is no separate disclosure under Article 452(d) and (j) subpoint (ii) CRR for exposures where no own estimates of the above parameters are used.
- Hamburg Commercial Bank treats risk positions in retail exclusively using the standardized approach for credit risks. As a consequence, no information under Article 452(c) subpoint (iv) and (f) CRR are disclosed.
- Hamburg Commercial Bank does not use advanced measurement approaches to calculate capital requirements for operational risk. Information pursuant to Article 454 CRR is therefore not presented.
- There is no disclosure under Article 455 CRR as no internal market risk model is applied.

1.2. Risk management concept

The description of the risk management objectives and –policy pursuant to Article 435(1) CRR is made by applying Article 434(2) CRR with the information contained in the Group

Management Report (Risk Report) of Hamburg Commercial Bank's Annual Report in accordance with the references given in Table OVA. There are also supplementary descriptions of liquidity risk in Section 6, credit risk in Section 7 and counterparty credit risk in Section 8.

[Tab. 2] OVA: Concept of risk management

Regulatory requirements of Table OVA (EBA/GL/2016/11)	Reference CRR	Refer to Hamburg Commercial Bank's Annual Report
a) Approved risk declaration describing the business model and the impact of the risk profile and material transactions within the banking group, equities and subsidiaries as well as its aim and economic impact	Article 435(1)(f)	Group Management Report (Basis of the Group) Page 40 - 44 Group Management Report (Risk Report) Page 76 - 77
b) Risk governance structure, approved limits for risks, information concerning general internal monitoring processes and framework	Article 435(1)(b)	Group Management Report (Risk Report) Page 76 - 81
c) Communication channels ensuring the risk culture within the bank	Article 435(1)(b)	Group Management Report (Risk Report) Page 79 - 81
d) Scope and main aspects of risk measurement systems and description of the risk communication to the management body	Article 435(1)(c) and (2)(e)	Group Management Report (Risk Report) Page 77 - 80
e) Policies regarding systematic and regular reviews of risk management strategies and the periodical assessment evaluation of their effectiveness	Article 435(1)(c)	Group Management Report (Risk Report) Page 80, 82, 87, 98, 99, 105
f) Qualitative information concerning stress testing	Article 435(1)(a)	Group Management Report (Risk Report) Page 84, 98, 100
g) Information concerning strategies and processes to manage, hedge and mitigate risks, as well as on the monitoring of the effectiveness of hedges and mitigants	Article 435(1)(a) and (d)	Group Management Report (Risk Report) Page 98

2. Own funds and capital requirements

2.1. Own funds structure and key figures

For the disclosure of own funds pursuant to Article 437(1) points (a), (b), (d) and (e) CRR, Hamburg Commercial Bank follows the Implementing Regulation (EU) 1423/2013 laying down implementing technical standards for institutions' own funds disclosure obligations pursuant to CRR. Full disclosure

takes place on an annual basis. Semi-annual, information on own funds and capital ratios is disclosed in accordance with paragraph 26(b) in conjunction with paragraph 23(a) of EBA/GL/2014/14.

The following Table KM1 follows the proposals of BCBS 432 for the disclosure of key figures relating to own funds, capital ratios and other rapidly changing information.

[Tab. 3] KM1: Key figures

	12/31/2018	09/30/2018
Composition of own funds for regulatory purposes in € m		
1 Common Equity Tier 1 capital (CET1)	4,064	3,878
of which: CET1 before regulatory adjustments	4,347	4,351
of which: Regulatory adjustment of CET1	-282	-473
Additional Tier 1 capital (AT1)	-	883
of which: AT1 before regulatory adjustments	-	883
of which: Regulatory adjustment of AT1	-	-
2 Tier 1 capital (T1 = CET1 + AT1)	4,064	4,761
Tier 2 capital (T2)	1,086	1,737
of which: T2 before regulatory adjustments	1,086	1,737
of which: Regulatory adjustment of T2	-	-
3 Total capital (TC = T1 + T2)	5,151	6,498
Total risk exposure amount		
4 Total RWAs	22,139	24,238
Capital ratios as a percentage of total risk exposure		
5 Common Equity Tier 1 (CET1) capital ratio	18.4	16.0
6 Tier 1 capital ratio	18.4	19.6
7 Total capital ratio	23.3	26.8
Capital buffers as a percentage of total risk exposure		
8 Capital conservation buffer requirement	1.9	1.9
9 Institution specific countercyclical buffer requirement	0.1	0.0
10 Buffer for global/other systematically important institutions	-	0.3
11 Institution specific buffer requirements (rows 8 + 9 + 10)	1.9	2.2
12 CET1 available after meeting the bank's minimum capital requirements	13.9	11.5
Leverage ratio		
13 Total leverage ratio exposure measure in € m	55,625	58,646
14 Leverage ratio in %	7.3	8.1
Liquidity Coverage Ratio (LCR)		
15 Liquidity buffer in € m	11,612	12,491
16 Total net cash outflow in € m	6,723	7,209
17 LCR ratio in %	174.6	173.8

Explanation of significant changes

Common Equity Tier 1 capital ratio of the regulatory group increased significantly by 2.4 percentage points to 18.4 % as at the reporting date. The increase in CET1 compared to the previous quarter is mainly due to the decrease in the deduction item for losses in the current financial year, as a profit was available at the end of 2018 that is not eligible for regulatory purposes as at 12/31/2018. In addition, both the deduction for

negative amounts from calculation of expected loss amounts and the deduction item for securitization positions with a risk weight of 1,250 % are reduced. Due to the termination of all hybrid instruments, the capital contribution of silent partners are no longer eligible and the consideration as additional Tier 1 capital (AT1) and Tier 2 capital (T2) no longer applies. The RWA changes are disclosed in Section 2.2.

The leverage ratio decreases to 7.3 % in the fourth quarter due to the decline in Tier 1 capital, which is relatively higher than the decline in the total exposure measure. The total exposure measure declines because of the portfolio reduction.

The liquidity coverage ratio (LCR) is disclosed as the average value of the last 12 months. As a result of the balance sheet reduction the level of the liquidity buffer falls more sharply than the net cash outflows and for this reason the liquidity coverage ratio initially decreased in the course of the year. With the privatization completed in the fourth quarter and the associated inflow of funds from the Sunrise second loss guarantee as well as the portfolio transaction, the liquidity buffer and thus the liquidity coverage ratio increase again.

Disclosure of the nature and amounts of specific own funds items

For the presentation referred to in Article 437(1) points (d) and (e) CRR, the model for own funds disclosure set out in Annex IV of Implementing Regulation (EU) No 1423/2013 is used. Full disclosure of this information is made using the disclosures in Table 63.

Complete reconciliation of own funds components with audited financial statements

The full reconciliation of own funds components with audited accounts under Article 437(1)(a) CRR in conjunction with Article 2 of Implementing Regulation (EU) 1423/2013 is shown in Table 64.

The transfer takes place in three steps. As a first step, the transition from the accounting scope of consolidation to the regulatory scope of consolidation will begin as of 06/30/2018. The own funds components of the scope of consolidation for accounting purposes correspond to the equity figures published in HSH Nordbank's interim report as at 06/30/2018. These form the basis for regulatory own funds as at 12/31/2018 due to the introduction of IFRS 9. In a second step, the equity components will be expanded and regulatory effects will be taken into account. Finally, the own funds components are allocated to the own funds components of the regulatory report of the Group as at 12/31/2018.

Description of the main features of own funds instruments issued

The main features of the instruments issued by the Hamburg Commercial Bank, namely Common Equity Tier 1 capital, Additional Tier 1 capital and Tier 2 capital, are described in Table 65 in accordance with Article 437(1) (b) CRR in conjunction with Article 3 of Implementing Regulation (EU) 1423/2013.

Information on transitional provisions for the disclosure of own funds

According to Article 492(4) CRR, the use of transitional provisions under Article 484 CRR are disclosed. Hamburg Commercial Bank does not make use of these transitional provisions.

2.1.1. Terms and conditions of equity instruments

In accordance with Article 437(1)(c) CRR, the regulatory equity instruments of Hamburg Commercial Bank as at the reporting date are essentially composed as follows:

- The share capital amounts to € 3,018 m.
- The reserves of € 1,175 m comprise capital reserves (€ 75 m), other retained earnings (€ 120 m) and Group retained earnings (€ 980 m).
- Due to the termination of all hybrid instruments, the capital contributions of silent partners are no longer eligible for inclusion in regulatory equity.
- The Tier 2 capital amounts to € 1,086 m and consists of longer-term subordinated liabilities of € 977 m and an eligible excess of € 110 m for advanced IRBA positions in accordance with Article 62(1)(d) CRR.
- Subordinated debt was issued in the form of promissory notes, registered or bearer bonds and is denominated in Euro and US Dollar. The original maturities range from 15 to 40 years. The interest rate is between 0.0 % p.a. and 6.5 % p.a.

The following table provides more detailed information on terms and conditions of the eligible equity components.

[Tab. 4] Terms and conditions of own funds instruments

	Allocable total amount in € m			Remaining maturity < 5 years in € m	Remaining maturity >= 5 years in € m	Avg. remaining maturity in years	Avg. interest rate in % ¹⁾
	of which CET1	of which AT1	of which T2				
Ordinary shares of Hamburg Commercial Bank AG	3,018	-	-	-	-	-	-
Allocable share capital of other entities included in the regulatory scope of consolidation	-	-	-	-	-	-	-
Silent participations with limited allocability, subject to transitional rules, indefinite and without payment triggers	-	-	-	-	-	-	-
Silent participations with limited allocability, subject to transitional rules, limited or with payment triggers	-	-	-	-	-	-	-
Profit participation certificates	-	-	-	-	-	-	-
Permanently eligible subordinated liabilities	-	-	977	60	917	14	1.3
Subordinated liabilities subject to a transitional rule	-	-	-	-	-	-	-

¹⁾ Information on interest rates relates to interest payments actually made.

2.2. Capital requirements

Pursuant to Article 438 points (c) to (f) CRR in conjunction with paragraph 69 of EBA/GL/2016/11 capital requirements relevant to Hamburg Commercial Bank are shown in Table OV1. Additionally, in Table 438cd this account is supplemented by an overview by exposure classes to fully meet the requirements of Article 438 CRR. The capital requirements are explained below.

Credit risk and counterparty credit risk

Following approval by the responsible authorities, Hamburg Commercial Bank determines all risk parameters required to determine the risk weight internally. The risk-weighted position amounts for credit risk are thus calculated using the IRB approach in accordance with Part 3 Title II Chapter 3 CRR.

However, in the context of partial use, the standardized approach for credit risks in accordance with Part 3 Title II Chapter 2 CRR is applied for individual risk positions and for the companies to be consolidated. For this reason, information on the capital requirements for credit risk is presented in accordance with both the advanced IRB approach and the standardized approach to credit risk. In addition, the capital requirements for the risk arising from contributions to the default fund of a central counterparty are disclosed in accordance with Articles 307 to 309 CRR.

Hamburg Commercial Bank uses the PD/LGD approach and the simple risk-weight approach to determine the capital requirements for equity investments using the IRB approach. In addition, significant investments in a financial sector entity are separately backed by own funds in accordance with Article 48 CRR, provided that these are not deducted from own funds.

Overall, the capital requirements for credit risk (including counterparty credit risk and securitization risk, excluding deferred taxes) amounts to € 1,432 m as at the reporting date.

The reduction in capital requirements for credit risk compared with the previous quarter results from the further scheduled decrease of the reduction portfolio – in particular the outflow of credit risk as a result of the portfolio transaction

– with the opposite effect resulting from the termination of the Horizon securitization transaction. In addition, the expiry of transactions and improved risk parameters had an impact with minor offsetting currency effects (see Table CR8).

The reduction in securitization risk results primarily from the termination of the Horizon securitization transaction.

Market risk

Hamburg Commercial Bank uses the standard procedures set out in Part 3 Title IV Chapters 2 to 4 CRR to determine capital requirements for market risks.

The capital requirements for market risks of € 82 m comprise € 72 m for position risk and € 10 m for exchange rate risk. There is no commodity risk.

Operational risk

Hamburg Commercial Bank uses the standardized approach pursuant to Article 317 CRR to determine the capital requirement for operational risks. As at the reporting date, the capital requirement amounts to € 139 m.

Overall capital requirements

In addition to credit risk, market risk and operational risk, Hamburg Commercial Bank also backs the risk of an adjustment to credit valuation (CVA risk) with own funds in accordance with Part 3 Title VI CRR. There were no significant capital requirements as at the reporting date for the settlement risk pursuant to Part 3 Title VI CRR.

Furthermore, capital requirements pursuant to Articles 48 and 60 CRR amount to € 86 m, which mainly result from deferred taxes. Deferred taxes are included in Table OV1 in row 27 and in Table 438cd in the IRBA exposure class “Other non credit-obligation assets”.

As at the reporting date, total own funds requirements amounted to € 1,771 m. This includes an additional risk position under Article 3 CRR with the amount of € 13 m, which takes into account the forthcoming recalibration of a rating submodule.

[Tab. 5] OVI: Overview of risk weighted assets (RWA) in € m

		a	b	c	
		RWAs		Minimum capital requirements	
		12/31/2018	09/30/2018	12/31/2018	
	1	Credit risk (excluding CCR)	16,981	18,367	1,359
Art. 438 (c)(d)	2	Of which the standardised approach	593	765	47
Art. 438 (c)(d)	3	Of which the foundation IRB (FIRB) approach	-	-	-
Art. 438 (c)(d)	4	Of which the advanced IRB (AIRB) approach	16,153	17,356	1,292
Art. 438 (d)	5	Of which equity IRB under the simple risk-weighted approach or the IMA	235	245	19
Art. 107, Art. 438 (c)(d)	6	CCR	1,052	1,075	84
Art. 438 (c)(d)	7	Of which mark to market	813	837	65
Art. 438 (c)(d)	8	Of which original exposure	-	-	-
	9	Of which the standardised approach	-	-	-
	10	Of which internal model method (IMM)	-	-	-
Art. 438 (c)(d)	11	Of which risk exposure amount for contributions to the default fund of a CCP	1	1	0
Art. 438 (c)(d)	12	Of which CVA	237	237	19
Art. 438 (e)	13	Settlement risk	0	-	0
Art. 449 (o)(i)	14	Securitization exposures in the banking book (after the cap)	104	625	8
	15	Of which IRB approach	56	586	5
	16	Of which IRB supervisory formula approach (SFA)	56	586	5
	17	Of which internal assessment approach (IAA)	-	-	-
	18	Of which standardised approach	48	39	4
Art. 438 (e)	19	Market risk	1,023	1,399	82
	20	Of which the standardised approach	1,023	1,399	82
	21	Of which IMA	-	-	-
Art. 438 (e)	22	Large exposures	-	-	-
Art. 438 (f)	23	Operational risk	1,743	1,743	139
	24	Of which basic indicator approach	-	-	-
	25	Of which standardised approach	1,743	1,743	139
	26	Of which advanced measurement approach	-	-	-
Art. 437 (2), Art. 48, Art. 60	27	Amounts below the thresholds for deduction (subject to 250% risk weight)	1,072	1,029	86
Art. 500	28	Floor adjustment	-	-	-
		Additional risk exposure amount due to Article 3 CRR	164	-	13
	29	Total	22,139	24,238	1,771

[Tab. 6] 438cd: Capital requirements by exposure class in € m

Exposure class	RWAs		Capital requirements
	12/31/2018	09/30/2018	12/31/2018
Standardised Approach (CRSA)			
Central governments or central banks	-	-	-
Regional governments or local authorities	0	0	0
Public sector entities	29	20	2
Multilateral development banks	-	-	-
International organisations	-	-	-
Institutions	48	56	4
Corporates	473	457	38
Retail exposures	12	14	1
Exposures secured by mortgages on immovable property	14	16	1
Exposures in default	60	257	5
Exposures associated with particularly high risk	-	-	-
Covered bonds	-	-	-
Securitizations	48	39	4
Exposures to institutions and corporates with a short-term credit assessment	-	-	-
Shares in collective investment undertakings	-	-	-
Equities	-	-	-
Other items	-	-	-
Total CRSA	684	859	55
Advanced Internal Rating Based Approach (AIRB)			
Central governments and central banks	300	331	24
Institutions	639	715	51
Corporates	15,540	16,541	1,243
of which: Specialised lending	9,438	10,438	755
of which: SMEs	714	1,106	57
of which: Other	5,388	4,997	431
Retail exposures	-	-	-
Equity holdings	276	320	22
of which: Equity holdings using the PD/LGD approach	40	74	3
of which: Equity holdings using the simple risk weight approach	235	245	19
of which: Significant equity holdings in a financial sector entity (250%)	1	1	0
of which: Equity holdings using internal models	-	-	-
Securitizations	56	586	5
Other non credit-obligation assets	1,475	1,508	118
Total AIRB	18,287	19,999	1,463
Total	18,971	20,858	1,518

3. Countercyclical capital buffer

The amount of the institution specific countercyclical capital buffer and the geographical breakdown of the credit risk exposures relevant for the calculation of the countercyclical capital buffer is disclosed in accordance with Article 440 CRR. The disclosure of the geographical distribution of credit risk exposures in accordance with Article 440(1)(a) CRR in conjunction with Article 2 of Delegated Regulation (EU) 2015/1555 is provided in Table 8.

The exposure is disclosed in columns 010 to 065 divided into general credit exposure, trading book exposure (i.e. specific market risk) and securitization exposure. The corresponding capital requirements are displayed in columns 070 to 100. In column 110 the weights are shown, which apply to every country specific ratio for the countercyclical capital buffer. The ratio results from the sum of cap-

ital requirements per country divided by the sum of all capital requirements of the relevant credit exposures. In column 120, the countercyclical capital buffer rate of each country is shown. These have to be published by the countries themselves.

The countercyclical capital buffer disclosure by Hamburg Commercial Bank differs from Table 1 in Annex I of Delegated Regulation (EU) 2015/1555:

- Column 040 is not disclosed, since Hamburg Commercial Bank does not use any internal models for market risk.
- In order to achieve consistency of regulatory disclosure and regulatory reporting on the countercyclical capital buffer, columns 065 and 095 for "other assets without credit obligations" are added.

[Tab. 7] Countercyclical capital buffer

Total risk exposure amount (€ m)	22,139
Institution specific countercyclical capital buffer rate (%)	0.054
Institution specific countercyclical capital buffer requirement (€ m)	12

[Tab. 8] Geographical breakdown of relevant credit exposures for the calculation of the countercyclical capital buffer in € m

Breakdown by country ¹⁾	General credit exposures		Trading book exposure	Securatisation exposure		other		Own funds requirements				Total	Own funds requirement weights	Countercyclical capital buffer rate
	Exposure value for SA	Exposure value for IRB	Sum of long and short position of trading book	Exposure value for SA	Exposure value for IRB	other assets without credit obligations	of which: General credit exposures	of which: Trading book exposures	of which: Securatisation exposures	of which: other assets without credit obligations				
	010	020	030	050	060	065	070	080	090	095	100	110	120	
AE	0	1	-	-	-	-	0	-	-	-	0	0.00	0.00%	
AT	0	143	-	-	-	-	9	-	-	-	9	0.01	0.00%	
BB	-	43	-	-	-	-	2	-	-	-	2	0.00	0.00%	
BD	-	-	-	-	-	-	-	-	-	-	-	-	0.00%	
BE	-	515	1	-	-	-	11	0	-	-	11	0.01	0.00%	
BM	-	75	-	-	-	-	4	-	-	-	4	0.00	0.00%	
BR	-	-	-	-	-	-	-	-	-	-	-	-	0.00%	
BS	-	8	-	-	-	-	1	-	-	-	1	0.00	0.00%	
BZ	0	-	-	-	-	-	0	-	-	-	0	0.00	0.00%	
CA	-	9	-	-	-	-	1	-	-	-	1	0.00	0.00%	
CH	0	472	-	-	-	-	24	-	-	-	24	0.02	0.00%	
CN	-	0	-	-	-	-	0	-	-	-	0	0.00	0.00%	
CY	0	164	-	-	-	-	8	-	-	-	8	0.01	0.00%	
CZ	-	0	-	-	-	-	0	-	-	-	0	0.00	1.00%	
DE	262	20,063	184	-	-	319	780	0	-	25	806	0.60	0.00%	

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Breakdown by country ¹⁾	General credit exposures		Trading book exposure	Securatisation exposure		other	Own funds requirements					Total	Own funds requirement weights	Counter-cyclical capital buffer rate
	Exposure value for SA	Exposure value for IRB	Sum of long and short position of trading book	Exposure value for SA	Exposure value for IRB	other assets without credit obligations	of which: General credit exposures	of which: Trading book exposures	of which: Securatisation exposures	of which: other assets without credit obligations				
	010	020	030	050	060	065	070	080	090	095	100	110	120	
DK	0	190	-	-	-	-	5	-	-	-	5	0.00	0.00%	
EE	-	127	-	-	-	-	3	-	-	-	3	0.00	0.00%	
ES	-	252	-	-	-	-	10	-	-	-	10	0.01	0.00%	
FI	0	404	-	-	-	-	9	-	-	-	9	0.01	0.00%	
FR	0	1,539	3	-	-	-	54	0	-	-	54	0.04	0.00%	
GB	47	485	1	-	-	-	21	0	-	-	21	0.02	1.00%	
GG	-	-	-	-	-	-	-	-	-	-	-	-	0.00%	
GR	-	616	-	-	-	-	26	-	-	-	26	0.02	0.00%	
HK	-	25	-	-	-	-	1	-	-	-	1	0.00	1.88%	
HR	-	87	-	-	-	-	5	-	-	-	5	0.00	0.00%	
ID	0	-	-	-	-	-	0	-	-	-	0	0.00	0.00%	
IE	-	201	-	-	-	-	11	-	-	-	11	0.01	0.00%	
IL	-	31	-	-	-	-	1	-	-	-	1	0.00	0.00%	
IM	0	42	-	-	-	-	3	-	-	-	3	0.00	0.00%	
IN	-	11	-	-	-	-	0	-	-	-	0	0.00	0.00%	
IT	69	137	-	-	-	-	10	-	-	-	10	0.01	0.00%	
JE	0	628	-	-	-	-	34	-	-	-	34	0.02	0.00%	
JP	-	15	-	-	-	-	1	-	-	-	1	0.00	0.00%	
KR	0	2	-	-	-	-	0	-	-	-	0	0.00	0.00%	
KW	-	9	-	-	-	-	0	-	-	-	0	0.00	0.00%	
KY	88	62	-	-	-	-	10	-	-	-	10	0.01	0.00%	
LR	0	339	-	-	-	-	17	-	-	-	17	0.01	0.00%	
LU	82	2,434	1	240	19	-	73	0	8	-	81	0.06	0.00%	
MA	-	-	-	-	-	-	-	-	-	-	-	-	0.00%	
MH	0	1,153	-	-	-	-	44	-	-	-	44	0.03	0.00%	
MT	0	0	-	-	-	-	0	-	-	-	0	0.00	0.00%	
MY	0	-	-	-	-	-	0	-	-	-	0	0.00	0.00%	
NL	-	1,085	2	-	-	-	30	0	-	-	30	0.02	0.00%	
NO	-	223	-	-	-	-	9	-	-	-	9	0.01	2.00%	
PA	0	32	-	-	-	-	1	-	-	-	1	0.00	0.00%	
PL	-	38	-	-	-	-	0	-	-	-	0	0.00	0.00%	
PT	-	203	-	-	-	-	7	-	-	-	7	0.01	0.00%	
QA	-	5	-	-	-	-	0	-	-	-	0	0.00	0.00%	
RU	-	32	-	-	-	-	0	-	-	-	0	0.00	0.00%	
SA	-	8	-	-	-	-	0	-	-	-	0	0.00	0.00%	
SE	-	234	-	-	-	-	16	-	-	-	16	0.01	2.00%	
SG	0	378	-	-	-	-	15	-	-	-	15	0.01	0.00%	
TH	0	2	-	-	-	-	0	-	-	-	0	0.00	0.00%	
TR	0	271	-	-	-	-	11	-	-	-	11	0.01	0.00%	
TW	-	1	-	-	-	-	0	-	-	-	0	0.00	0.00%	
US	119	240	2	-	-	45	11	0	-	0	12	0.01	0.00%	
VC	-	-	-	-	-	-	-	-	-	-	-	-	0.00%	
VG	-	181	-	-	-	-	11	-	-	-	11	0.01	0.00%	
VN	0	-	-	-	-	-	0	-	-	-	0	0.00	0.00%	
ZA	-	307	-	-	-	-	22	-	-	-	22	0.02	0.00%	
Other	-	-	11	-	-	81	-	-	-	7	7	0.00	0.00%	
Summe	668	33,524	206	240	19	445	1,311	1	8	32	1,352	1.00		

¹⁾ refer to country code ISO 3166-1 ALPHA-2

4. Leverage ratio

According to Article 451 CRR, information on the leverage ratio to be disclosed. The calculation of the leverage ratio is performed in accordance with Article 429, 429 points (a) and (b) CRR in conjunction with the Implementing Regulation (EU) 2016/200.

The leverage ratio is the quotient of the Tier 1 capital and the total exposure measure. The total exposure measure consists of the assets and off-balance-sheet items under the consideration of relevant valuation approaches especially for leverage ratio.

The leverage ratio complements the risk-based capital requirements as a non-risk based ratio. Currently, the leverage

ratio is an observation parameter. As a reference value, the Basel Committee of Banking Regulation determined a minimum leverage ratio of 3 % in the leverage ratio framework and disclosure requirements of January 2014. Probably from 2021 onwards the leverage ratio will be implemented as an additional minimum capital ratio.

Below, the leverage ratio is derived. The option in Article 499(2) CRR is utilized to disclose the Tier 1 capital pursuant to Article 499(1)(b) CRR only, thus in consideration of the Basel III transitional provisions.

[Tab. 9] LRSum: Summary reconciliation of accounting assets and leverage ratio exposures in € m

	Applicable Amount
1 Total assets as per published financial statements	55,121
2 Adjustment for entities which are consolidated for accounting purposes but are outside the scope of regulatory consolidation	- 12
3 (Adjustment for fiduciary assets recognised on the balance sheet pursuant to the applicable accounting framework but excluded from the leverage ratio total exposure measure in accordance with Article 429(13) of Regulation (EU) No 575/2013)	-
4 Adjustments for derivative financial instruments	- 1,184
5 Adjustments for securities financing transactions (SFTs)	- 78
6 Adjustment for off-balance-sheet items (ie conversion to credit equivalent amounts of off-balance-sheet exposures)	3,777
EU-6a (Adjustment for intragroup exposures excluded from the leverage ratio total exposure measure in accordance with Article 429(7) of Regulation (EU) No 575/2013)	-
EU-6b (Adjustment for exposures excluded from the leverage ratio total exposure measure in accordance with Article 429(14) of Regulation (EU) No 575/2013)	-
7 Other adjustments	- 1,999
8 Leverage ratio total exposure measure	55,625

[Tab. 10] LRCom: Leverage ratio common disclosure in € m

	CRR leverage ratio exposures
On-balance-sheet exposures (excluding derivatives and SFTs)	
1	On-balance-sheet items (excluding derivatives, SFTs and fiduciary assets, but including collateral) 50,008
2	(Asset amounts deducted in determining Tier 1 capital) - 282
3	Total on-balance-sheet exposures (excluding derivatives, SFTs and fiduciary assets) (sum of lines 1 and 2) 49,726
Derivative exposures	
4	Replacement cost associated with all derivatives transactions (ie net of eligible cash variation margin) 1,324
5	Add-on amounts for PFE associated with all derivatives transactions (mark-to-market method) 678
EU-5a	Exposure determined under Original Exposure Method -
6	Gross-up for derivatives collateral provided where deducted from the balance sheet assets pursuant to the applicable accounting framework -
7	(Deductions of receivables assets for cash variation margin provided in derivatives transactions) - 203
8	(Exempted CCP leg of client-cleared trade exposures) -
9	Adjusted effective notional amount of written credit derivatives 48
10	(Adjusted effective notional offsets and add-on deductions for written credit derivatives) -
11	Total derivatives exposures (sum of lines 4 to 10) 1,847
SFT exposures	
12	Gross SFT assets (with no recognition of netting), after adjusting for sales accounting transactions 263
13	(Netted amounts of cash payables and cash receivables of gross SFT assets) -
14	Counterparty credit risk exposure for SFT assets 13
EU-14a	Derogation for SFTs: Counterparty credit risk exposure in accordance with Article 429b(4) and 222 of Regulation (EU) No 575/2013 -
15	Agent transaction exposures -
EU-15a	(Exempted CCP leg of client-cleared SFT exposure) -
16	Total securities financing transaction exposures (sum of lines 12 to 15a) 276
Other off-balance-sheet exposures	
17	Off-balance-sheet exposures at gross notional amount 9,355
18	(Adjustments for conversion to credit equivalent amounts) - 5,578
19	Other off-balance sheet exposures (sum of lines 17 and 18) 3,777
Exempted exposures in accordance with Article 429(7) and (14) of Regulation (EU) No 575/2013 (on- and off-balance-sheet)	
EU-19a	(Intragroup exposures (solo basis) exempted in accordance with Article 429(7) of Regulation (EU) No 575/2013 (on- and off-balance-sheet)) -
EU-19b	(Exposures exempted in accordance with Article 429(14) of Regulation (EU) No 575/2013 (on- and off-balance-sheet)) -
Capital and total exposure measure	
20	Tier 1 capital 4,064
21	Leverage ratio total exposure measure (sum of lines 3, 11, 16, 19, EU-19a and EU-19b) 55,625
Leverage ratio	
22	Leverage ratio 7.3%
Choice on transitional arrangements and amount of derecognised fiduciary items	
EU-23	Choice on transitional arrangements for the definition of the capital measure transitional
EU-24	Amount of derecognised fiduciary items in accordance with Article 429(11) of Regulation (EU) No 575/2013 -

[Tab. 11] LRSpl: Split-up of on-balance-sheet exposures (excluding derivatives, SFTs and exempted exposures) in € m

	CRR leverage ratio exposures
EU-1 Total on-balance-sheet exposures (excluding derivatives, SFTs, and exempted exposures), of which:	49,413
EU-2 Trading book exposures	206
EU-3 Banking book exposures, of which:	49,207
EU-4 Covered bonds	3,233
EU-5 Exposures treated as sovereigns	16,228
EU-6 Exposures to regional governments, MDB, international organisations and PSE not treated as sovereigns	494
EU-7 Institutions	731
EU-8 Secured by mortgages of immovable properties	10,324
EU-9 Retail exposures	26
EU-10 Corporate	17,103
EU-11 Exposures in default	325
EU-12 Other exposures (eg equity, securitisations, and other non-credit obligation assets)	743

[Tab. 12] LRQua: Disclosure on qualitative items

1	Description of the processes used to manage the risk of excessive leverage	On the one hand, an ongoing supervision of the leverage ratio as at the reporting date (current state) and on the other hand, on a proactive perspective (forecast) is ensured. Moreover, in the frame of the stress tests, the development of the leverage ratio for various crisis scenarios is analysed. As a constraint, the compliance with the leverage ratio is considered in the annual corporate planning. The control of the leverage ratio can be adjusted inter alia with a balance limitation as required. The current amount of the leverage ratio, however, leads to expect that with the introduction of a compulsory leverage ratio that has to be met, there are no adjustments needed for the Tier 1 capital and total exposure measure.
2	Description of the factors that had an impact on the leverage ratio during the period to which the disclosed leverage ratio refers	The leverage ratio amounts to 7.3 % and falls by 0.8 percentage points short of the value as of 09/30/2018 (8.1 %). For information on the change of the leverage ratio see Section 2.1. There existed no important external factors in connection with the economic and financial environment that had influence on the leverage ratio.

5. Unencumbered assets

For the disclosure of unencumbered assets pursuant to Article 443 CRR, Hamburg Commercial Bank follows Article 1 of Delegated Regulation (EU) 2017/2295 on technical regulatory standard and Guideline EBA/GL/2014/03 on the disclosure of encumbered and unencumbered assets.

According to the EBA definition, assets are encumbered or tied if they are not freely available for the institution to raise funds elsewhere. This is always the case if they are pledged or lent, i.e. used to secure the bank's own loans and securities and to secure potential obligations from derivatives business (netting and collateral agreements) within the framework of on-balance-sheet or off-balance-sheet transactions.

In median of the financial year, the encumbrance ratio for the regulatory Group was around 39 %.

Information on the level of encumbrance

The encumbrance ratio pursuant to Article 100 CRR fluctuated around the median over the year, with total receivables decreasing significantly as a result of portfolio sales of unencumbered assets and the percentage of encumbrances increasing.

The majority (approximately 80 %) of the encumbered assets and collateral received result from covered bond issues (cover pool), development bank business and ABF transactions as well as collateral and netting agreements from derivative transactions.

The remaining encumbered assets are divided between collateral for payment lines, collateral for repurchase agreements and securities lending transactions. As at 12/31/2018, derivative assets are included with the collateral taking into account balance sheet netting.

About 90 % of all encumbered assets at Group level are allotted to transactions of Hamburg Commercial Bank AG.

There is significant overcollateralization in the refinancing of covered bonds, ABF transactions and repurchase agreements.

The provision and acceptance of collateral is essentially based on standardized contracts for security repurchase agreements and for the collateralization of financial future transactions. Moreover, the bank concludes individual contracts for the provision of collateral within the framework of development bank transactions and for ABF transactions.

Hamburg Commercial Bank provides various types of collateral for several business purposes. As at 12/31/2018, the majority consisted of cash collateral amounting to around € 1.2 bn for derivatives and partly for the development bank business. In addition to approximately € 1.5 bn in (economic) loans, around € 0.1 bn in securities are pledged as collateral for payment transaction lines and trading lines. In the context of Pfandbrief business (public mortgage register, mortgage bond register and ship mortgage bond register), both the cover pools and the rating-related surplus as well as the issuable, free surplus are shown as encumbered assets.

In addition to unencumbered debt securities and equity instruments, unencumbered other assets are shown in Table 13.

Of the approximately € 8 bn median of unencumbered other assets, approximately 53 % are receivables from the derivatives business, in addition to the Sunrise compensation that expired at the end of 2018.

[Tab. 13] Assets in € m

	Carrying amount of encumbered assets	Fair value of encumbered assets	Carrying amount of unencum- bered assets	Fair value of unencumbered assets
	010	040	060	090
010 Assets of the reporting institution	24,364		38,316	
030 Equity instruments	-		40	
040 Debt securities	3,912	3,912	8,775	8,897
050 of which: covered bonds	510	510	3,349	3,349
060 of which: asset-backed securities	-	-	90	91
070 of which: issued by general governments	3,023	3,023	3,744	3,779
080 of which: issued by financial corporations	886	886	4,933	5,066
090 of which: issued by non-financial corporations	-	-	58	57
120 Other assets	20,361		29,899	
121 of which: Loans on demand	1,145		3,693	
122 of which: Loans and advances other than loans on demand	17,246		18,402	

[Tab. 14] Collateral received in € m

	Fair value of encumbered collateral received or own debt se- curities issued	Fair value of collateral re- ceived or own debt secu- rities issued available for encumbrance
	010	040
130 Collateral received by the reporting institution	117	181
140 Loans on demand	-	-
150 Equity instruments	-	-
160 Debt securities	117	181
170 of which: covered bonds	98	156
180 of which: asset-backed securities	-	-
190 of which: issued by general governments	21	46
200 of which: issued by financial corporations	98	156
210 of which: issued by non-financial corporations	-	-
220 Loans and advances other than loans on demand	-	-
230 Other collateral received	-	-
240 Own debt securities issued other than own covered bonds or asset-backed securities	-	1,544
241 Own covered bonds and asset-backed securities issued and not yet pledged		568
250 TOTAL ASSETS, COLLATERAL RECEIVED AND OWN DEBT SECURITIES ISSUED	24,508	

[Tab. 15] Encumbered assets, collateral received and associated liabilities in € m

	Matching liabilities, contingent liabilities or securities lent	Assets, collateral re- ceived and own debt se- curities issued other than covered bonds and ABSs encumbered
	010	030
010 Carrying amount of selected financial liabilities	17,956	21,599
011 of which: derivatives	3,242	3,322
012 of which: repurchase agreements	1,599	2,679
013 of which: collateralised deposits other than repurchase agreements	4,910	5,350
014 of which: debt securities issued	8,237	10,102
015 of which: nominal of loan commitments received	1,743	2,539

6. Liquidity risk

Hamburg Commercial Bank divides its liquidity risk into insolvency risk and liquidity maturity transformation risk.

The insolvency risk is the risk that current or future payment obligations cannot be met in part or in full. This is referred to as liquidity risk in the narrower sense. The key driver of this liquidity risk is the cash flow structure in the liquidity maturity statement (LMS), which is determined by the assets (maturity/currency structure) and liabilities (funding structure by maturity/currencies/investors). In this context, the market liquidity risk, i.e. the risk that transactions cannot be sold or only at unfavorable conditions due to insufficient market depth, is taken into account in the LMS as a component of the insolvency risk. Another component of insolvency risk is the refinancing risk, i.e. the risk of not being able to procure liquidity or not being able to do so to the expected conditions if required. The refinancing risk is determined by the refinancing structure. Information on the refinancing structure can be found in Note 51 to the consolidated financial statements "Residual maturity breakdown of financial instruments".

The liquidity maturity transformation risk describes the risk that a loss will result from a mismatch in the contractual maturities of assets and liabilities, the so-called liquidity maturity transformation position, and the change in the own refinancing premium.

6.1. Liquidity risk management

In this section, the risk management objectives and policy for liquidity risk are disclosed in continuous text form in accordance with Article 435(1) CRR in conjunction with paragraph 17 and Table LIQA of EBA/GL/2017/01.

6.1.1. Strategies and processes in the liquidity risk management

The business strategy and the associated risk appetite of Hamburg Commercial Bank are used to derive an appropriate risk strategy and risk management (overall risk strategy), which together form the basis of the bank's risk culture. The liquidity risk strategy or liquidity risk tolerance, which adequately take into account the liquidity risks of the business model, is embedded in the overall risk strategy.

The liquidity risk strategy is part of the Strategic Risk Framework (SRF), which describes the risk strategic orientation and overall risk strategy. Together with Policy Liquidity Management (part of the Asset Liability Management Policy document), this liquidity risk strategy describes Hamburg

Commercial Bank's framework for dealing with liquidity and the associated risks. These framework conditions from the strategies/policies mentioned are summarized and partly specified in the framework document ILAAP Framework.

The corresponding risk appetite or risk tolerance are defined by the Group Management Board. Liquidity risk management is the responsibility of the divisions Bank Steering, Treasury & Markets and Group Risk Management.

The liquidity risk strategy specifies Hamburg Commercial Bank's risk strategy with regard to the question of how the Group wishes to structure its risk appetite with regard to liquidity risk, i.e. under which conditions and to which extent the Group may be prepared to enter into liquidity risk positions within the framework of regulatory requirements. In each case, the focus is on how the bank's earnings expectations and risk appetite can be reconciled.

In addition to risk-bearing capacity, securing solvency at all times is of paramount importance for Hamburg Commercial Bank and therefore is the most important objective in managing liquidity risks. The SRF formulates in detail the principles for risk controlling of liquidity as a resource. In particular, it relates to the sub-processes liquidity risk measurement, liquidity monitoring, liquidity limitation, liquidity stress testing and liquidity reporting of operational liquidity management.

In contrast to this, the Policy Liquidity Management, as part of the ALM policy, formulates the principles for managing liquidity as a resource. The main objectives of liquidity management are to ensure solvency at all times and to manage liquidity on condition that the relevant regulatory ratios are complied with.

A distinction has to be made between the following liquidity risk management processes:

- **Risk identification:** The main liquidity risks and their drivers are identified as part of risk identification. On the basis, the Board of Managing Directors determines risk tolerances for the main liquidity risks and at the same time defines the liquidity risk strategy of Hamburg Commercial Bank.
- **Risk measurement:** Risk measurement focuses on the adequate measurement of material liquidity risks under conservative assumptions (risk perspective). The central instruments for this purpose are LMS, which show potential liquidity gaps over time. Moreover, risk measurement also includes stress testing, backtesting and the measurement of risk concentrations as well as the calculation of regulatory ratios.

- **Risk limitation and monitoring:** The relevant limits are derived directly from risk tolerance (internal limits) or are defined by regulatory indicators (external limits). Limit monitoring, including escalation, is also part of this process step.
- **Risk management:** The fundamental task of risk management is to implement the liquidity risk strategy and to control compliance with internal and external (regulatory) limits. The main instruments used to manage the liquidity position are funding planning and the liquidity price allocation system. Safeguarding solvency at all times is also a key task of risk management. The main instruments for this are the liquidity buffer and the measures of the liquidity contingency plan.
- **Reporting:** In liquidity risk reporting, key internal and external indicators and their compliance with limits are reported.

6.1.2. Structure and organization of the liquidity risk management function

The Board of Managing Directors bears overall responsibility for the measurement, monitoring and management of material liquidity risks. As part of the operationalization of the risk management process at Hamburg Commercial Bank, tasks are allocated to subordinate bodies and organizational units with a clear division of tasks between liquidity management and risk monitoring. The organizational units and bodies have the following tasks and responsibilities with regard to liquidity as a resource:

Organizational units

Group Risk Management (GRM): Within the context of risk measurement and monitoring, GRM is responsible for all methods, procedures and technical implementation in liquidity risk controlling, meaning that it is also the central point of contact for internals and externals (e.g. supervisory authorities, auditors, rating agencies) for questions relating to this. When designing the risk measurement systems, the unit takes into account the requirements for liquidity management as possible and thus supports efficient liquidity management. It proposes the methods for the liquidity measurement system and the limits for the liquidity risk limit system, including stress scenarios, and coordinates committee resolutions on these. Additionally the unit is responsible for the regular monitoring and reporting of liquidity risks, limit utilization, concentration risks and forecast LMS to the Management Board. In addition, it monitors upcoming changes in supervisory legislation and derives necessary measures as well as implements the requirements of supervisory law.

Bank Steering: Bank Steering acts as the Global Head for liquidity and is responsible for strategic liquidity management within the framework of the risk limits and risk specifications of the Board of Managing Directors. This involves balancing the liquidity position in order to adhere to the liquidity risk limits

(risk of insolvency and liquidity maturity transformation risk) on the one hand and on the other includes responsibility for adhering to the supervisory requirements with regard to liquidity management. Moreover, Bank Steering has sovereignty over the funding strategy and the funding plan, including the formulation of targets to avoid concentrations in the funding strategy, the liquidity price allocation system, the liquidity contingency plan and the composition of the liquidity buffer.

Treasury & Markets (T & M): T & M is responsible for the operational implementation of the framework requirements defined in connection with strategic liquidity management and liquidity risk measurement. In addition to the function of acting within the bank as an internal liquidity pool for internal liquidity acceptance and provisions, this also includes liquidity access to the central banks via open market transactions, daily dispositive liquidity management and ensuring solvency with regard to the limits defined in liquidity risk measurement. In addition, T & M is responsible for the implementation of fund evaluation and the fulfillment of funding plans as well as liquidity control and liquidity management on an intra-day basis.

Management bodies

Group Management Board: The Group Management Board determines the bank's business and risk strategy. Within risk strategy it is also responsible for measuring and managing liquidity risks. This responsibility is reflected in the adoption of the liquidity risk strategy as part of the SRM and, as a result, the determination of the risk tolerance or risk appetite appropriate to Hamburg Commercial Bank concerning liquidity risks. In addition, the Management Board is responsible for approving the liquidity and funding planning, the liquidity contingency planning and other overlying documents.

Risk Committee of the Supervisory Board: The Risk Committee is informed of the liquidity risk situation and other matters by the Chief Risk Officer on a quarterly basis.

Group Bank Steering Committee (GBS Committee): The GBS Committee is the body responsible for financial resource management and allocation within the context of risk limits and plan targets. The primary objective of the GBS Committee is the monitoring and management of the scarce resources of liquidity/funding, capital and the risks associated with these bottleneck factors (including risk concentration, credit, liquidity, FX and interest rate risks). In addition, Management Board decisions on these topics are prepared and pre-structured. GBS Committee performs its activities based on the GBS rules of procedure. With regard to liquidity risk, it assesses the liquidity risk position, amongst other things, and makes decisions regarding methodological changes in liquidity risk controlling and limit changes and in the event of limit overdrafts. The GBS Committee also makes decisions on measures for

managing liquidity and strategic liquidity maturity transformation (e.g. strategic adjustments to the liquidity cost calculating, defining funding targets and strategy).

Preliminary Review Credit Committee (PRCC): The PRCC is responsible for the operational management of the use of resources in the lending business at the level of material individual transactions. It decides independently on the allocation of these resources. This Committee is involved in the management of new business and prolongations. The aim is to approve business transactions that are in line with strategy and with liquidity outflows that can be funded within the context of liquidity planning.

6.1.3. Scope and type of liquidity risk reporting and measurement systems

Liquidity risk is measured using LMS. The LMS represents the liquidity situation of Hamburg Commercial Bank over time. The balances arising in the individual maturity bands through aggregation of the balance sheet and off-balance-sheet inflows and outflows are referred to as liquidity gaps. The inflows and outflows of liquidity from assets and liabilities and from off-balance-sheet positions are determined using appropriate assumptions and models, taking into account the underlying scenarios. The assumptions, models and model parameters made are regularly validated depending on the estimated model risk content.

The LMS take certain cash flows into account (e.g. principal repayments) and uncertain cash flows (e.g. early terminations) together with existing and planned transactions. The classification of cash flows into the categories "certain" and "uncertain" is based on whether the timing or the amount of the cash flows is known. If at least one of these two parameters is unknown, it is modelled.

In addition to the LMS described above, which is prepared for the period up to 12 months and under risk aspects (risk case) for the purpose of risk measurement, there is an expected case LMS, which contains expected cash flows (expected case).

In line with the requirements of MaRisk, risk measurement under aggravated and extreme market conditions is an important component of risk management for the bank. Risk measurement for aggravated and extreme market conditions is performed for the intraday, short-term and structural insolvency risk and the liquidity maturity transformation risk.

The measurement of the intraday insolvency risk is based on the internal ratio of the adjusted account balance and the regulatory ratios in accordance with BCBS 248 for the TARGET2 account at the Bundesbank. Hamburg Commercial Bank carries out most its interbank payment transactions via the TARGET2 account with the Bundesbank, which is why the material intraday liquidity risks may arise on the TARGET2 ac-

count. The amount of the intraday liquidity buffer is determined based on the key figure of the adjusted account balance.

Hamburg Commercial Bank measures its liquidity maturity transformation risk using a value at risk approach and calculates a liquidity value at risk (LVaR). The LVaR is calculated using a historical simulation (confidence level 99.9 %) of the liquidity spreads and their present value effects on the transactions that would theoretically be necessary to be able to close the current maturity transformation position immediately without considering new business. The risk measurement includes the base case LMS without taking into account new business, available refinancing channels (e.g. residues of deposits, covered and uncovered refinancing) to close the LMS gaps and changes in the bank's own refinancing curves. It is assumed that these hypothetical close-out transactions could actually be concluded on the market and that full refinancing would thus be possible.

In addition, a LMS is prepared for the over-year range, which takes risk aspects such as the base case LMS into account. In contrast to the base case LMS during the year, it only takes into account existing business and no new business.

The aim of the liquidity risk strategy is to avoid risk concentrations as far as possible within the framework of the business model. Concentration risks on the assets and liabilities side are regularly quantified and continuously monitored by means of indicators (e.g. investor, sector and maturity concentration for depositors) and inverse stress tests (e.g. on the withdrawal of deposits and USD appreciation). In addition, concentration risks are conservatively taken into account in the various LMS scenarios by means of cash flow models specially focused on this and by means of risk premiums and discounts in the model parameters.

Furthermore, a separate USD LMS (only USD denominated asset/liability transactions and off-balance-sheet positions) is calculated and limited. The limit is set by determining the maximum tolerable derivative requirement for closing USD gaps up to 12 months. The limit takes into account the requirement not to extend the USD sensitivity of the collateral position and the general ability to convert liquidity into USD without using the liquidity buffer.

A limit is set out for the intraday, short-term and structural insolvency risk as well as for the liquidity maturity transformation risk, which reflects the risk tolerance of the Board of Managing Directors.

According to the CRR, Hamburg Commercial Bank is required to report the LCR (here in conjunction with the Delegated Regulation (EU) 2015/61), the net stable funding ratio (NSFR) and the additional monitoring metrics for liquidity reporting (AMM). The required positions are reported to the competent authorities monthly for LCR and AMM and quarterly for NSFR. The Management Board is also informed on a monthly basis about the amount and development of these figures reported to the competent authorities.

For monitoring and management reasons, Hamburg Commercial Bank also prepares a weekly approximation for the LCR and for other ratios such as the liquidity capacity period, which are derived in particular from the AMM.

6.1.4. Strategies for hedging and mitigating liquidity risk as well as strategies and processes for monitoring the ongoing effectiveness of hedges and mitigations

The liquidity risk is generally hedged and mitigated within the context of risk limitation, monitoring and liquidity management.

The risk limits are essentially derived from the risk tolerance levels and the regulatory requirements. A distinction is made between the risk tolerance levels for insolvency risk and for the liquidity maturity transformation risk.

The intraday, the short-term and the structurally insolvency risk as well as the liquidity maturity transformation risk are monitored.

The fundamental task of liquidity management is the implementation of the liquidity risk strategy and the management of compliance with internal and external (regulatory) limits. This is done primarily by using the following tools:

- The intraday liquidity risk is managed on the basis of intraday liquidity available for payment transactions at Group level. This involves the management of available liquidity, which consists of collateral deposited at central banks, balances with central banks and nostro accounts at correspondent banks.
- The tools used to secure short-term solvency (hedge against the short-term insolvency risk) are the liquidity buffer and the measures set out in the liquidity contingency plan.
- The short-term risk of insolvency is managed, among other things, by defining management limits and guidelines. The aim is to comply with the limits with regard to LMS. The main tools used for management purposes are the funding plan and the liquidity transfer pricing system.
- The risk of a future shortfall in regulatory minimum liquidity is quantified by monthly forecasting of the most serious stress scenario over a time horizon in line with medium-term planning (36 months). The measure is the net liquidity position NLP 2 in the first to third month of the most severe stress scenario. The forecast of the future liquidity surplus is carried out in the bank planning process both for the expected course of business and under adverse planning assumptions (downside planning). In addition, this instrument is used for restructuring planning and the inverse stress tests across risk types, in which future compliance with the regulatory minimum liquidity is checked under various stress scenarios.

- The LVaR as a risk measure for the liquidity maturity transformation risk is an observation variable for management which, however, is not actively but implicitly controlled by funding planning, the liquidity price allocation system and compliance with short-term limits.
- Compliance with regulatory limits is an essential basis for risk management. It must be ensured that the regulatory requirements are met at all times. Management guidelines are defined for this purpose.

Strategies for hedging and mitigating the liquidity risk also include the application of a transfer pricing concept. If a transaction which is relevant from a liquidity perspective is executed, this transaction generates a corresponding liquidity flow in the LMS. As a result, a counter-position is entered into to prevent a breach of liquidity risk limits, which mitigates the corresponding liquidity position. This counter-transaction results either in cost or income for the bank which is charged on to the originator of the counter-transaction. In the consistent inclusion of the liquidity cash flows associated with liquidity risk measurement in internal liquidity transfer pricing, all costs and income incurred by the bank because of liquidity flows are passed on in full to the originator.

Hamburg Commercial Bank's liquidity transfer pricing system is based on the liquidity risk modelling of the GRM division. The aim is to transfer the LMS values (or loads) into a price settlement system in order to ensure consistent control.

6.1.5. A statement, approved by the management body, on the adequacy of the institution's liquidity risk management arrangements ensuring that the liquidity risk management systems in place are appropriate to the institution's profile and strategy

The Management Board of Hamburg Commercial Bank declares the adequacy of the liquidity position (ILAAP declaration) as part of the annual provision of ILAAP information to the ECB. The Management Board believes that the existence of adequate liquidity is underpinned in particular by the following aspects:

- Sustainable governance to assess and monitor adequacy
- Compliance with SRF limits in the actual state, base case planning and downside planning
- Compliance with the regulatory requirements
- Compliance with the liquidity risk ratios for the restructuring plan
- Consideration of strategic business risks

6.1.6. Statement on the liquidity risk profile associated with the business strategy

According to point six of Table LIQA of EBA/GL/2017/01, a concise liquidity risk statement, approved by the management body and describing briefly and concisely the overall liquidity risk profile of the institution associated with the business strategy, is to be provided. Hamburg Commercial Bank comments on this as follows.

Hamburg Commercial Bank's liquidity risk profile includes short- and long-term risks. The short-term liquidity risk, of up to one year, essentially comprises the intraday and short-term insolvency risk as well as concentration risks. For Hamburg Commercial Bank the long-term liquidity risk is primarily the risk arising from the transformation of liquidity maturities or the risk of insolvency for more than one year. Further details are provided in the Group Management Report (Risk Report) of Hamburg Commercial Bank. The table "Key risk indicators of the Group" also contains key liquidity ratios.

Based on Hamburg Commercial Bank's risk appetite, the SRF describes the bank's risk-strategic orientation and risk management thus forms the foundation of its risk culture. The

SRF is approved by the Management Board. All risk limits and risk guardrails derived from risk appetite are also integrated in the SRF.

6.2. Liquidity ratios

This section discloses material quantitative liquidity risk information in accordance with Article 435(1) CRR in conjunction with paragraph 14 and Table LIQ1 of EBA/GL/2017/01. Hamburg Commercial Bank is not classified as systemically relevant. Therefore, the more extensive disclosure pursuant to paragraphs 13, 18 and 19 of EBA/GL/2017/01 is waived.

The LCR is disclosed as the average value of the last 12 months. As a result of the balance sheet reduction the level of the liquidity buffer falls more sharply than the net cash outflows and for this reason the LCR initially decreased in the course of the year. With the privatization completed in the fourth quarter and the associated inflow of funds from the Sunrise second loss guarantee as well as the portfolio transaction, the LCR increase again.

[Tab. 16] LIQ1: Liquidity coverage ratio (LCR)

Scope of consolidation	Total adjusted value			
Currency and units: € m				
Quarter ending on:	03/31/2018	06/30/2018	09/30/2018	12/31/2018
Number of data points used in the calculation of averages	12	12	12	12
21 Liquidity buffer	15,276	14,427	12,491	11,612
22 Total net cash outflows	7,916	7,741	7,209	6,723
23 Liquidity coverage ratio (%)	194.8	187.4	173.8	174.6

7. Default risk

Hamburg Commercial Bank breaks down its default risk into credit, settlement, country and equity holding risk.

In addition to classic credit risk, the credit risk also includes counterparty credit risk (see Section 8) and issuer risk. Classic credit risk is the risk of total or partial loss due to a deterioration in the creditworthiness of the counterparty in credit transactions. Issuer risk is the risk that a financial transaction will lose value due to a default or a deterioration in the creditworthiness of an issuer.

The settlement risk consists of the settlement risk and the advance performance risk. The settlement risk consists of a possible loss in value if delivery or acceptance claims arise from a transaction that is already due and has not yet been settled by both parties. An advance performance risk exists if Hamburg Commercial Bank has already fulfilled its contractual obligations but the counter-performance by the contractual partner is still outstanding.

Hamburg Commercial Bank defines country risk as the risk that agreed payments will not be made or will be made only partially or late due to government imposed restrictions on cross-border payment transactions (transfer risk). The risk is not based on the creditworthiness of the debtor.

Equity holding risk is defined as the risk of financial loss due to impairment of an investment.

All the aforementioned components of default risk are taken into account as part of equity management. There are

additional control measures for risk concentrations and equity holding risks.

Hamburg Commercial Bank voluntarily complies with EBA/GL/2016/11 for the disclosure of default risk. In the tables in the default risk Section, counterparty credit risk and securitizations are not taken into account as they are presented separately (see Section 8 and 9). Exceptions are described explicitly. In this section "Other assets without credit obligations" are shown without the values for deferred taxes.

As Hamburg Commercial Bank, as an IRBA institute, complies with the regulatory upper limit in the context of permanent partial use and therefore the CRSA portfolio is of no material importance, in this section the CRSA exposure classes are aggregated into one position. Tables CR4 and CR5 acc. to EBA/GL/2016/11 are an exception, in which the assignment of the CRSA exposure classes are shown in detail.

Risk management objectives and policies

The risk management objectives and policies for default risk pursuant to Article 435(1) CRR are described on the basis of Article 434(2) CRR within the statements provided in the Group Management Report (Risk Report) of Hamburg Commercial Bank's Annual Report according to the references of the following table.

[Tab. 17] CRA: General and qualitative information about credit risk

Regulatory requirements of Table CRA (EBA/GL/2016/11)	Reference CRR	Refer to Hamburg Commercial Bank's Annual Report
a) Coherence between business model and credit risk profile	Article 435(1)(f)	Group Management Report (Basis of the Group) Page 40 - 44 Group Management Report (Risk Report) Page 76 - 77
b) Criteria and concepts determining the policy of credit risk management and defining limits for credit risks	Article 435(1)(a) and (d)	Group Management Report (Risk Report) Page 77, 85 - 86
c) Structure and organisation of credit risk management and monitoring function	Article 435(1)(b)	Group Management Report (Risk Report) Page 78, 85 - 86
d) Relation between the credit risk management, risk control function, compliance and the internal audit	Article 435(1)(b)	Group Management Report (Risk Report) Page 78

7.1. Credit risk adjustments

Tables CR1-A to CR1-C disclose, in accordance with Article 442 points (g) and (h) CRR in conjunction with paragraph 84 to 89 of EBA/GL/2016/11, book values and credit risk adjustments (without Additional Value Adjustments (AVA) according to 105 CRR) per exposure class, economic activity and geographical area. The disclosure is based on the geographical and sectoral breakdown used in the Annual Report. Further extraneous details are not disclosed and left out.

According to paragraph 38 of EBA/OP/2017/02 risk provision under IFRS 9 is to be regarded as a specific credit risk adjustments. Therefore, column d always remains empty.

Forborne and non-performing exposures are disclosed in accordance with EBA/GL/2018/10 (see Section 7.2). Tables CR1-D and CR1-E of EBA/GL/2016/11 are therefore omitted in accordance with paragraph 17 of this guideline.

The credit risks have changed significantly as a result in the context of privatization. The opposing effects are mentioned in Section 1.1. In particular, the defaulted exposures were greatly reduced.

[Tab. 18] CR1-A: Credit quality of exposures by exposure class and instrument in € m

Exposure class	a	b	c	d	e	f	g
	Gross carrying values of		Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs	Credit risk adjustment charges of the period	Net values
	Defaulted exposures	Non-defaulted exposures					(a+b-c-d)
1 Central governments and central banks	0	16,081	4	-	-	-0	16,077
2 Institutions	-	4,251	0	-	-	0	4,251
3 Corporates	1,151	36,128	1,130	-	54	-3,268	36,149
4 Of which: Specialised lending	704	24,388	889	-	45	-2,372	24,203
5 Of which: SMEs	133	1,224	93	-	6	-168	1,264
6 Retail	-	-	-	-	-	-	-
14 Equity	0	109	-	-	37	-	109
Other non credit-obligation assets	1	444	-	-	-	-	445
15 Total IRBA	1,152	57,013	1,134	-	92	-3,268	57,031
35 Total CRSA	86	1,426	47	-	2	-216	1,465
36 Total	1,239	58,439	1,181	-	93	-3,484	58,496
37 Of which: Loans	1,151	38,449	1,080	-	56	-3,498	38,520
38 Of which: debt securities	-	10,230	4	-	-	-64	10,226
39 Of which: Off-balance-sheet exposures	88	9,315	98	-	0	77	9,306

[Tab. 19] CR1-B: Credit quality of exposures by industry or counterparty types in € m

		a		b	c	d	e	f	g
		Gross carrying values of		Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs	Credit risk adjustment charges	Net values	
		Defaulted exposures	Non-defaulted exposures						
	Main Branch								(a+b-c-d)
1	Credit institutions	-	5,864	0	-	-	-0	5,864	
2	Other financial institutions	72	1,188	36	-	24	-20	1,224	
3	Public sector	0	15,397	7	-	-	-4	15,390	
4	Private Households	7	394	1	-	0	-50	399	
5	Properties and buildings	44	11,665	42	-	7	-503	11,667	
6	Shipping	777	4,723	618	-	34	-2,240	4,882	
7	Industry	178	9,535	358	-	11	-355	9,354	
8	Trade and transport	71	3,642	64	-	3	-103	3,649	
9	Other services	90	5,586	54	-	15	-210	5,622	
10	Other	0	444	0	-	-	0	444	
11	Total	1,239	58,439	1,181	-	93	-3,484	58,496	

[Tab. 20] CR1-C: Credit quality of exposures by geography in € m

		a		b	c	d	e	f	g
		Gross carrying values of		Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs	Credit risk adjustment charges	Net values	
		Defaulted exposures	Non-defaulted exposures						
	Main region								(a+b-c-d)
1	Germany	417	41,041	393	-	29	-1,185	41,064	
2	Eurozone (w/o Germany)	145	10,139	371	-	32	-776	9,913	
3	Western Europe (w/o Eurozone)	213	3,435	75	-	7	-220	3,573	
4	Eastern Europe (w/o Eurozone)	12	497	5	-	-	-243	504	
5	African countries	25	494	39	-	-	-15	481	
6	North America	9	480	8	-	-	-2	481	
7	Latin America	0	412	5	-	-	-107	407	
8	Middle East	-	49	0	-	-	-49	49	
9	Asia Pacific Region	418	1,245	286	-	25	-887	1,377	
10	International organisations	-	566	0	-	-	-0	566	
11	Other	-	81	-	-	-	-	81	
12	Total	1,239	58,439	1,181	-	93	-3,484	58,496	

Table CR2-A provides information concerning the changes in the stock of general and specific credit risk adjustments and debt securitizations according to Article 442(i) CRR in conjunction with paragraph 91 of EBA/GL/2016/11. Except for exchange rate effects, data is transferred directly from FINREP. Due to the different description for securitization positions and different considerations of provisions the data cannot be compared with Table CR1-A to CR1-C as they are based on the

regulatory reporting (COREP). In connection with the first-time adoption of IFRS 9, the structure of the table was adjusted to the disclosure in FINREP reporting form F12.01 and therefore deviates from the template of EBA/GL/2016/11.

The amount of the specific credit risk adjustments directly transferred to the income statement acc. to the last sentence of Article 442 CRR is also presented in Table CR2-A.

[Tab. 21] CR2-A: Changes in the stock of general and specific credit risk adjustments in € m

	a	b
	Accumulated specific credit risk adjustments	Accumulated general credit risk adjustments
1 Opening balance 06/30/2018	781	-
2 Increases due to origination and acquisition	+ 582	-
3 Decrease due to derecognition repayments and disposals	- 229	-
4 Changes due to change in credit risk (net)	+ 158	-
5 Changes due to modifications without derecognition (net)	-	-
6 Changes due to update in the institution's methodology for estimation (net)	-	-
7 Decrease in allowance account due to write-offs	- 366	-
8 Impact of exchange rate differences	+ 11	-
9 Business combinations, including acquisitions and disposals of subsidiaries	-	-
10 Other adjustments	- 37	-
11 Closing balance 12/31/2018	900	-
12 Recoveries on credit risk adjustments recorded directly to the statement of profit or loss	- 25	-
13 Specific credit risk adjustments directly recorded to the statement of profit or loss	+ 8	-

In addition to Table CR2-A, further information concerning a reconciliation of exposures in default is provided in Table CR2-B according to Article 442 point (i) CRR in conjunction with paragraph 92 of EBA/GL/2016/11. All defaulted loans and debt securities are listed in the table regardless of whether there is an impairment or not. Further adjustments mainly result from the portfolio transaction with the disposal of defaulted business in the amount of € 4,841 m as well as exchange rate effects and changes in inventories due to restructuring measures.

[Tab. 22] CR2-B: Changes in the stock of defaulted and impaired loans and debt securities in € m

	a
	Gross carrying value defaulted exposures
1 Opening balance 06/30/2018	6,520
2 Loans and debt securities that have defaulted or impaired since the last reporting period	484
3 Returned to non-defaulted status	- 323
4 Amount written off	- 56
5 Other changes	- 5,475
6 Closing balance 12/31/2018	1,151

7.1.1. Definition of "past due" and "impaired" for accounting purposes

The disclosure is made in accordance with Article 442 point (a) CCR with regard to paragraph 76 and Table CRB-A in EBA/GL/2016/11.

A claim is overdue if a counterparty has not made a payment in accordance with the contract. The overdue period begins on the first calendar day on which the first significant overdraft occurred. All calendar days are taken into account when determining the days in arrears.

The bank's definition of non-performing exposure is consistent with its definition of default under Article 178 CRR. A default has occurred if the criterion "90-day-delay" and/or the criterion "unlikeliness to pay" applies to the debtor. Purely technical overdrafts, which are not credit rating related, do not represent a default. All defaulting transactions that are not measured at fair value are considered impaired from the outset and are allocated to Level 3 of IFRS 9 impairment model. In addition, in the risk provisioning process, non-default restructuring cases and relevant intensive support cases are examined to determine whether there is an objective indication (impairment trigger) of an impairment and thus a need for individual risk provisioning. The formation of an individual risk provision in turn lead to the default of the business partner.

Apart from transactions measured at fair value, there are no receivables which are overdue by more than 90 days and which are not considered impaired due to the system described above.

Thereby, Hamburg Commercial Bank does not use any own definition with regard to restructuring of a risk exposure which differs from Annex V of the Commission Implementing Regulation (EU) No. 680/2014.

7.1.2. Description of the approaches and methods of specific and general credit risk adjustments

Provision of specific and generally credit risk adjustments pursuant to Article 442 point (b) CRR in connection with Section 76 and Table CRB-A of EBA/GL/2016/11 are indicated in the Hamburg Commercial Bank's Annual Report (Group Management Report (Risk Report) as well as Appendix, Note 7

„Accounting and measurement principles“ Section ID Loan Loss Provision and impairment of financial instruments). According to EBA/OP/2017/02 Section 38 Provisions with IFRS 9 are only considered as specific credit risk adjustments.

Pursuant to Article 442 point (c) CRR in conjunction with paragraph 77 of EBA/GL/2016/11, in Table CRB-B the net value of exposures at the end of the period as well as the average of the last four end-of-quarter net exposures are shown.

[Tab. 23] CRB-B: Total and average net amount of exposures in € m

Exposure class	a	b
	Net value of exposures at the end of the period	Average net exposures over the period
1 Central governments and central banks	16,077	15,412
2 Institutions	4,251	5,158
3 Corporates	36,149	36,419
4 Of which: Specialised lending	24,203	23,961
5 Of which: SMEs	1,264	1,453
6 Retail	-	-
14 Equities	109	125
Other non credit-obligation assets	445	471
15 Total IRBA	57,031	57,586
35 Total CRSA	1,465	1,595
36 Total	58,496	59,180

Table CRB-C discloses geographical breakdown exposures in accordance with Article 442 point (d) CRR in conjunction with paragraph 78 of EBA/GL/2016/11. The disclosure is based on

the geographical and sectoral breakdown used in the Annual Report. Further details are regarded as negligible.

[Tab. 24] CRB-C: Geographical breakdown of exposures in € m

Exposure class	Net value											Total
	Germany	Eurozone (without Germany)	Western Europe (without Eurozone)	Eastern Europe (without Eurozone)	North America	Latin America	Asia Pacific Region	Middle East	African countries	International organisations	Other geographical areas	
1 Central governments and central banks	14,904	565	55	29	-	35	0	-	27	461	-	16,077
2 Institutions	1,681	1,177	1,343	30	0	2	-	-	17	-	-	4,251
3 Corporates	23,264	7,933	2,076	444	481	260	312	48	1,332	-	-	36,149
4 Of which: Specialised lending	15,095	6,639	1,122	256	423	16	59	8	585	-	-	24,203
5 Of which: SMEs	1,001	53	17	21	11	-	137	-	25	-	-	1,264
6 Retail	-	-	-	-	-	-	-	-	-	-	-	-
14 Equities	46	6	47	-	-	2	8	-	-	-	-	109
Other non credit-obligation assets	319	-	-	-	-	45	-	-	-	-	81	445
15 Total IRBA	40,214	9,680	3,521	504	481	344	320	48	1,376	461	81	57,031
35 Total CRSA	851	232	52	0	0	137	88	0	1	105	-	1,465
36 Total	41,064	9,913	3,573	504	481	481	407	49	1,377	566	81	58,496

Table CRB-D discloses exposures with regard to the exposure classes in accordance with Article 442 point (e) CRR in conjunction with paragraphs 79 to 81 of EBA/GL/2016/11.

The disclosure is based on the sectoral breakdown of the Annual Report. Further details are regarded as negligible.

[Tab. 25] CRB-D: Concentration of exposures by industry or counterparty types in € m

Exposure class	Net value											Total
	Credit institutions	Other financial institutions	Public sector	Private households	Properties and buildings	Shipping	Industry	Trade and transport	Other services	Other		
1 Central governments and central banks	1,811	-	14,266	-	-	-	-	-	-	-	-	16,077
2 Institutions	3,938	36	130	-	44	-	22	81	-	-	-	4,251
3 Corporates	13	749	559	197	11,558	4,875	9,148	3,557	5,260	233	-	36,149
4 Of which: Specialised lending	-	396	119	115	11,350	3,259	6,734	932	1,087	213	-	24,203
5 Of which: SMEs	-	45	90	17	112	160	302	178	360	-	-	1,264
6 Retail	-	-	-	-	-	-	-	-	-	-	-	-
14 Equities	5	42	-	4	13	0	1	0	43	0	-	109
Other non credit-obligation assets	3	34	1	8	0	-	10	1	178	211	-	445
15 Total IRBA	5,770	862	14,955	209	11,615	4,875	9,181	3,639	5,481	444	-	57,031
35 Total CRSA	94	362	435	190	52	7	173	10	141	0	-	1,465
36 Total	5,864	1,224	15,390	399	11,667	4,882	9,354	3,649	5,622	444	-	58,496

Table CRB-E discloses the maturity of exposures in accordance with Article 442 point (f) CRR in conjunction with paragraphs 82 and 83 of EBA/GL/2016/11.

[Tab. 26] CRB-E: Maturity of exposures in € m

		a	b	c		d	e	f
		Net value						
Exposure class		On demand	≤ 1 year	> 1 year ≤ 5 years	> 5 years	No stated maturity	Total	
1	Central governments and central banks	5,200	2,592	4,680	3,604	-	16,077	
2	Institutions	297	871	1,714	1,368	-	4,251	
3	Corporates	527	4,089	16,413	15,120	-	36,149	
4	Of which: Specialised lending	- 50	2,424	11,197	10,632	-	24,203	
5	Of which: SMEs	72	180	498	513	-	1,264	
6	Retail	-	-	-	-	-	-	
14	Equities	-	-	-	-	109	109	
	Other non credit-obligation assets	1	3	3	-	438	445	
15	Total IRBA	6,025	7,556	22,811	20,092	547	57,031	
35	Total CRSA	26	415	549	475	-	1,465	
36	Total	6,051	7,971	23,360	20,567	547	58,496	

7.2. Forborne and non-performing exposures

Hamburg Commercial Bank is already complying with the requirements of EBA/GL/2018/10 for the disclosure of forborne and non-performing exposures as at 12/31/2018. Hamburg Commercial Bank is significant within the meaning of Article 12 of this Directive and with 3.6 % NPL ratio (FINREP) as defined in paragraph 12 of EBA/GL/2018/06 the bank is below the threshold of 5 %. Only tables 1, 3, 4 and 9 must therefore be published annually in accordance with Article 15 of EBA/GL/2018/10. It is regularly reviewed if additional disclosure requirements have to be taken into

account by exceeding the threshold of the NPL ratio (FINREP).

Tables NPL1, NPL3 and NPL4 are filled from FINREP database as defined in EBA/GL/2018/10. The data are therefore not comparable with the tables based on the COREP report such as CR1-A to CR1-C, e.g. due to the different presentation of e.g. securitized positions and different consideration of risk provisions. Table 9 is not disclosed due to the bank's approach to the realization of collateral. In the sense of a "taking possession and execution"-process no collateral is taken possession of and the table would therefore always remain empty (see Group explanatory notes Note 54 V D "Other collateral received" of Hamburg Commercial Bank's Annual Report).

[Tab. 27] NPL1: Credit quality of forborne exposures in € m

	a	b	c	d	e	f	g	h
	Gross carrying amount/nominal of exposures with forbearance measures				Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions	Collaterals received and financial guarantees received on forborne exposures		
	Performing forborne	Non-performing forborne			On performing forborne exposures	On non-performing forborne exposures	of which: collateral and financial guarantees received on non-performing exposures with forbearance measures	
			of which: defaulted	of which: impaired				
1 Loan and advances	1,152	1,425	1,425	922	- 126	- 816	1,013	330
2 Central banks	-	-	-	-	-	-	-	-
3 Central governments	-	-	-	-	-	-	-	-
4 Credit institutions	-	-	-	-	-	-	-	-
5 Other financial corporations	0	7	7	7	-	- 1	1	1
6 Non-financial corporations	1,143	1,404	1,404	907	- 126	- 808	1,002	322
7 Households	8	15	15	8	- 1	- 6	10	7
8 Debt Securities	-	-	-	-	-	-	-	-
9 Loan commitments given	40	2	2	2	- 0	- 0	-	-
10 Total	1,192	1,428	1,428	924	- 127	- 816	1,013	330

[Tab. 28] NPL3: Credit quality of performing and non-performing exposures by past due days in € m

		a	b	c
		Gross carrying amount/nominal amount		
		Performing exposures		
		Not past due or past due ≤ 30 days		Past due > 30 days ≤ 90 days
1	Loans and advances	40,124	40,092	32
2	Central banks	5,299	5,299	-
3	General governments	3,904	3,904	-
4	Credit institutions	3,162	3,162	-
5	Other financial corporations	2,057	2,057	-
6	Non-financial corporations	25,257	25,226	31
7	Of which SMEs	11,342	11,330	12
8	Households	444	443	1
9	Debt securities	10,113	10,113	-
10	Central banks	-	-	-
11	General governments	5,295	5,295	-
12	Credit institutions	4,598	4,598	-
13	Other financial corporations	155	155	-
14	Non-financial corporations	65	65	-
15	Off-balance-sheet exposures	9,459		
16	Central banks	-		
17	General governments	11		
18	Credit institutions	267		
19	Other financial corporations	489		
20	Non-financial corporations	8,681		
21	Households	11		
22	Total	59,696	50,205	32

	d	e	f	g	h	i	j	k	l	
Gross carrying amount/nominal amount										
Non-performing exposures										
		Unlikely to pay that are not past due or are past due ≤ 90 days	Past due > 90 days ≤ 180 days	Past due > 180 days ≤ 1 year	Past due > 1 year ≤ 2 years	Past due > 2 years ≤ 5 years	Past due > 5 years ≤ 7 years	Past due > 7 years	Of which defaulted	
1	Loans and advances	1,484	1,313	11	40	47	19	35	17	1,484
2	Central banks	-	-	-	-	-	-	-	-	-
3	General governments	0	-	-	0	-	-	-	-	0
4	Credit institutions	-	-	-	-	-	-	-	-	-
5	Other financial corporations	7	7	-	-	-	0	-	-	7
6	Non-financial corporations	1,462	1,304	11	39	42	18	35	13	1,462
7	Of which SMEs	593	510	-	36	17	1	21	7	593
8	Households	15	3	0	1	5	1	1	4	15
9	Debt securities	-	-	-	-	-	-	-	-	-
10	Central banks	-	-	-	-	-	-	-	-	-
11	General governments	-	-	-	-	-	-	-	-	-
12	Credit institutions	-	-	-	-	-	-	-	-	-
13	Other financial corporations	-	-	-	-	-	-	-	-	-
14	Non-financial corporations	-	-	-	-	-	-	-	-	-
15	Off-balance-sheet exposures	87								87
16	Central banks	-								-
17	General governments	-								-
18	Credit institutions	-								-
19	Other financial corporations	9								9
20	Non-financial corporations	79								79
21	Households	0								0
22	Total	1,571	1,313	11	40	47	19	35	17	1,571

[Tab. 29] NPL4: Performing and non-performing exposures and related provisions in € m

		a	b	c	d	e	f
Gross carrying amount/nominal amount							
		Performing exposures			Non-performing exposures		
		Of which stage 1	Of which stage 2		Of which stage 2	Of which stage 3	
1	Loans and advances	40,124	37,015	3,109	1,484	-	1,484
2	Central banks	5,299	5,299	-	-	-	-
3	General governments	3,904	3,848	56	0	-	0
4	Credit institutions	3,162	3,162	0	-	-	-
5	Other financial corporations	2,057	1,759	299	7	-	7
6	Non-financial corporations	25,257	22,533	2,724	1,462	-	1,462
7	Of which SMEs	11,342	9,803	1,539	593	-	593
8	Households	444	415	29	15	-	15
9	Debt securities	10,113	10,113	-	-	-	-
10	Central banks	-	-	-	-	-	-
11	General governments	5,295	5,295	-	-	-	-
12	Credit institutions	4,598	4,598	-	-	-	-
13	Other financial corporations	155	155	-	-	-	-
14	Non-financial corporations	65	65	-	-	-	-
15	Off-balance-sheet exposures	9,459	8,282	1,178	87	-	87
16	Central banks	-	-	-	-	-	-
17	General governments	11	11	0	-	-	-
18	Credit institutions	267	262	5	-	-	-
19	Other financial corporations	489	298	190	9	-	9
20	Non-financial corporations	8,681	7,700	981	79	-	79
21	Households	11	10	1	0	-	0
22	Total	59,696	55,410	4,286	1,571	-	1,571

	g	h	i	j	k	l	m	n	o	
	Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions						Accumulated partial write-off	Collateral and financial guarantees received		
	Performing exposures – accumulated impairment and provisions			Non-performing exposures – accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions				On performing exposures	On non-performing exposures	
		Of which stage 1	Of which stage 2		Of which stage 2	Of which stage 3				
1	Loans and advances	- 339	- 97	- 241	- 836	-	- 836	- 283	15,823	335
2	Central banks	-	-	-	-	-	-	-	-	-
3	General governments	- 0	- 0	-	- 0	-	- 0	-	59	-
4	Credit institutions	- 0	- 0	- 0	-	-	-	-	34	-
5	Other financial corporations	- 11	- 7	- 4	- 1	-	- 1	- 1	1,163	3
6	Non-financial corporations	- 326	- 90	- 236	- 829	-	- 829	- 282	14,211	325
7	Of which SMEs	- 237	- 63	- 174	- 281	-	- 281	- 218	7,154	92
8	Households	- 2	- 1	- 1	- 7	-	- 7	- 0	356	7
9	Debt securities	- 6	- 6	-	-	-	-	-	-	-
10	Central banks	-	-	-	-	-	-	-	-	-
11	General governments	- 5	- 5	-	-	-	-	-	-	-
12	Credit institutions	- 0	- 0	-	-	-	-	-	-	-
13	Other financial corporations	- 0	- 0	-	-	-	-	-	-	-
14	Non-financial corporations	- 0	- 0	-	-	-	-	-	-	-
15	Off-balance-sheet exposures	- 14	- 6	- 7	- 48	0	- 48		1,760	7
16	Central banks	-	-	-	-	-	-		-	-
17	General governments	-	-	-	0	0	-		-	-
18	Credit institutions	- 0	- 0	- 0	-	-	-		-	-
19	Other financial corporations	- 1	- 0	- 1	- 1	-	- 1		147	7
20	Non-financial corporations	- 13	- 6	- 7	- 48	-	- 48		1,608	1
21	Households	- 0	- 0	- 0	- 0	-	- 0		5	-
22	Total	- 358	- 109	- 249	- 885	0	- 885	- 283	17,583	343

7.3. Use of credit risk mitigation techniques

The disclosure of qualitative information concerning credit risk mitigation is based on Article 453 points (a) to (e) CRR in conjunction with paragraph 93 and Table CRC in EBA/GL/2016/11 as well as on Article 452(b) subpoint (iii) CRR.

7.3.1. Policies, processes and scope of on- and off-balance-sheet netting

Institutions are able to utilize netting agreements when determining their required equity capital which lead to a reduction in the assessment basis and hence the equity capital required. Policies, processes and scope of on- and off-balance-sheet netting are to be disclosed in accordance with Article 453 point (a) CRR.

In contrast to balance sheet netting which is not used by Hamburg Commercial Bank, off-balance-sheet netting within the framework of netting agreements for derivatives is applied (see Section 8.1.2). The market valuation method is used to determine the required net assessment basis. As at the reporting date Hamburg Commercial Bank recorded a counterparty credit risk to the amount of approximately € 1,954 m (see Table CCR4).

7.3.2. Process for managing and recognizing credit risk mitigation

The Collateral Guideline incl. Valuation Guideline as well as the LGD method issued by the Management Board defines the collateral approved by Hamburg Commercial Bank as recoverable and hence minimizing default risk as well as the qualitative requirements for such collateral. Hence, it also defines the benchmarks for managing credit risk mitigation at Hamburg Commercial Bank. Disclosure is made in accordance with Article 452(b) subpoint (iii) CRR. The guidelines are supplemented by detailed instructions in the process regulations for the lending business in order to ensure comprehensive collateral management. The CRR requirements are an integral part of the Collateral Guideline.

Qualitative requirements for collaterals are, first and foremost, legal enforceability (especially for foreign collateral), an adequate consideration of a correlation between the creditworthiness of the borrower and the value of the collateral, matching maturities of loan and collateral agreement and the existence of an objective market value.

For these collaterals, the bank has identified collateral-specific recovery rates based on historical recovery cases, which are used with recognized collateral in calculating the LGD (see Section 7.6.1.). The collateral guidelines establish what assets (e.g. real estate, moveable assets, receivables) and which collateral instruments (e.g. mortgage, land charge, as-

signment) are recognized. In addition, the responsible back-office processing and control division must ensure on a case by case basis that the individual collateral and associated collateral agreement meet requirements in terms of enforceability and recoverability. In the risk-relevant lending business, the recoverability of the individual collateral is reviewed for plausibility as part of the loan decision process.

The decision whether a new asset or new collateral instrument can be recognized as minimizing risk is taken by a team of specialists from the divisions Credit Risk Management, Group Risk Management and Legal division.

7.3.3. Policies and processes for collateral valuation and management

Valuation and administration of collateral is integrated into the process of managing and recognizing credit risk mitigation techniques in accordance with Article 453 point (b) CRR. As the CRR is the basis for the collateral guidelines, collateral is only treated as reducing risk for the purpose of calculating capital requirements if all CRR requirements are satisfied.

For each item of collateral to be offset against risk, an objective market value is determined. This is done on the basis of Hamburg Commercial Bank's Valuation Guideline through experts or entities that are independent of the Market division of the bank. The recoverability of an item of collateral is ensured by recognizing it as reducing risk only up to the specific recovery rate for that collateral. The legal validity and enforceability of the collateral is ensured in the loan and collateral agreements. There is a standard instruction on regular monitoring and revaluation of collateral. Besides the annual review of collateral, there is a reevaluation of the market value of the individual items of collateral every three years. The results of the annual monitoring can lead to a direct revaluation of the individual collateral in individual cases or for a segment. For individual collateral objects, there is an annual monitoring and reevaluation of the value (e.g. ships). Recognized collateral is documented and maintained in a central collateral system. This enables regular reporting to monitor and evaluate collateral. The recoverability of and options for realising an item of collateral are regularly reviewed as part of the regular credit monitoring process, and more frequently in the event of wide fluctuations in market value.

In the event of permanent impairment of collateral rights, e.g. impairment in value or a change in the legal position, additional collateral is sought and/or a monitoring file may be opened in accordance with the guidelines for exposure monitoring in order to initiate the necessary measures. In the event of a borrower's default, all collateral and possibly further collateral of a group of connected clients involved are revalued. All relevant information on an item of collateral is documented and updated in the IT system. Only collateral which is recog-

nized as compliant with the guidelines and accordingly maintained is used in the steering systems of Hamburg Commercial Bank.

Back office specialists are available for prompt and competent realization of security in the event of a borrower's default. Experience with realizing security is incorporated into optimizing collateral management.

7.3.4. Main types of collateral and information about market or credit risk concentrations within the credit mitigation taken

In principle, Hamburg Commercial Bank takes into account all collateral listed in the CRR (financial collateral, guarantees, physical collateral, other IRBA collateral) and netting agreements. Due to the portfolio and customer structure, Hamburg Commercial Bank essentially assumes the following types of collateral within the meaning of Article 453 point (c) CRR:

- real estate and movable assets, e.g. ships and railway wagons,
- receivables and rights,
- guarantees.

In addition, securities, shares and some credit derivatives serve as collateral.

In the above-mentioned collateral types there are concentrations within the context of credit risk mitigation as described below in accordance with Article 453 point (e) CRR as well as instruments for managing these risks.

While the proportion of ship collateral fell primarily as a result of portfolio transaction and now accounts for around 20 % of the total collateral portfolio, the proportion of real estate collateral rose to more than 60 %. Almost 80 % of these are commercial properties. Around 70 % of the ship's collateral is distributed among container ships and bulkers, while tankers account for 20 % of the ship's collateral. Other collateral consists primarily of cash collateral and guarantees and accounts for approximately 20 % of the total.

Management of concentration risks from eligible collaterals is done for portfolios at the level of the bank as a whole, e.g. by reporting and monitoring these risks in the MaRisk report to the Risk Committee. In addition, it is integrated into strategic planning and limiting by adding a further limit on the

collateral typically associated with the business areas involved to the planning and limiting for typical business area related collateral (specifically tangible assets e.g. ships).

Collateral can only be taken into account in calculating LGD if its risk-reducing effect has not been taken into account in establishing a rating (PD). This means, for example, that a guarantee or assigned receivable which has already been taken into account in a rating tool or through the rating of the guarantor as the bearer of economic risk or third party debtor cannot in addition be netted against risk as collateral.

7.3.5. Guarantors and credit derivative counterparty and their creditworthiness

For a guarantee (or credit derivative) to be recognized as reducing risk there must be a current internal rating for the guarantor comparable with at least a Fitch or S & P BB- or Moody's Ba3.

Within Hamburg Commercial Bank, the main types of guarantors within the meaning of Article 453 point (d) CRR are guarantees by central governments, local and regional administrative authorities, institutions and companies with first class ratings. The main counterparties for credit derivatives are internationally active banks.

7.3.6. Collateralized exposure values

The two following tables in accordance with Article 453 points (f) and (g) CRR show the scope of credit risk mitigation techniques used.

In the case of the standardized approach for credit risk, both financial and tangible security and guarantees are taken into account. Under advanced IRBA financial, tangible and other collateral are included in LGD calculation. Guarantees and credit derivatives can be taken into account either in LGD calculation or through PD substitution. Here, the secured part of the receivables is given the guarantors' PD. However, collateral taken into account in calculating the PD is not shown here. Life insurance is accounted for in accordance with Article 232 CRR. There were no material changes in the recognition of collateral in the reporting period.

An overview with regard to the scope of credit risk mitigation for total loans, debt securities and off-balance exposure according to paragraph 94 of EBA/GL/2016/11 is given in Table CR3.

[Tab. 30] CR3: CRM techniques – overview in € m

	a	b	c	d	e
	Exposures unsecured - Carrying amount	Exposures secured - Carrying amount	Exposures secured by collateral	Exposures secured by financial guarantees	Exposures secured by credit derivatives
1 Total loans	19,949	18,571	15,060	716	-
2 Total debt securities	10,180	45	-	45	-
Off-Balance exposure	7,337	1,968	960	197	-
3 Total exposures	37,466	20,585	16,020	958	-
4 Of which defaulted	328	332	315	17	-

In addition to Table CR3, the following table shows pursuant with Article 453 points (f) and (g) CRR the scope of credit risk mitigation techniques by exposure class as well as by equity exposure approach according to Article 155 CRR. Within this table the limitations of Table CR3 accord-

ing to EBA/GL/2016/11 are not applicable, so that counterparty credit risk exposures are included. Securitizations remain omitted.

[Tab. 31] 453g: Total amount of collateralized exposure values (without securitizations) in € m

	Financial collateral	Other and physical collateral	Guarantees / credit derivatives
Central governments and central banks	-	-	-
Institutions	416	38	105
Corporates - Specialised lending	22	13,283	385
Corporates - SME	14	316	55
Corporates - Other	153	2,305	381
Retail	-	-	-
Equities	-	-	-
of which: Equities acc. to Article 155(3) CRR	-	-	-
of which: Equities acc. to Article 155(2) CRR	-	-	-
of which: Equities acc. to Article 155(4) CRR	-	-	-
Other non credit-obligation assets	-	-	-
Total IRBA	604	15,942	927
Total CRSA	1,014	44	79
Total	1,619	15,986	1,006

7.4. Use of external ratings and standardized approach

As mentioned before, in this Disclosure Report CRSA exposures are aggregated to one position due to materiality. Exceptions within this Section are Tables CR4 and CR5 according to EBA/GL/2016/11. In these tables, CRSA exposures are presented in detail.

7.4.1. Names of the nominated ECAI and ECA

Under the standardized approach for credit risks the required risk weight for the calculation of own capital backing is regulatory stipulated. The risk weight depends on the type of receivable, its external rating and any collateral. Hamburg Commercial Bank uses external credit assessments provided by external credit assessment institutions (ECAI) recognized by the supervisory authorities for the determination of risk weights in accordance with Article 138 and 269 CRR. Different rating agencies (ECAI) or export insurance agencies (ECA) can be appointed for each category of receivables. The CRSA or IRBA exposure class Securitizations allows rating agencies to be appointed at the transaction level; for all other CRSA exposures they are appointed per receivables category related to credit assessment.

If an external credit assessment of a recognized rating agency is used, the assessment is to be transferred into a

credit assessment according to the rating master scale. It needs to be checked for each approved ECAI whether an external rating exists or not. If there is more than one external rating available, of the two ratings leading to the lowest CRSA risk weights, the rating with the higher CRSA risk weight is decisive. Hamburg Commercial Bank generally uses the issuer rating for exposures that are not part of the trading book, except for ABS transactions where the external rating for the transaction is used.

Hamburg Commercial Bank has admitted only the ECAIs listed in Table 32 to be used with respect to Article 444 point (a) CRR in conjunction with paragraph 97 and Table CRD of EBA/GL/2016/11 and makes use of these for the exposure classes listed pursuant to Article 444 point (b) CRR. Export credit agencies are not used in this context. ECAIs are only nominated for states and securitizations receivables categories. Whilst only the standardized approach for credit risk is involved for states receivables, external ratings are used for securitization positions under both the CRSA and the IRB approach. The external rating of the respective central government is relevant for transactions as defined in Articles 115 and 116 CRR as well as Article 119 in connection with Article 121 CRR and applied in determining the risk weight. Transactions assigned to the regional or local authority, public sector entity and institutions exposure classes are affected by this. These continue to be disclosed in the above-mentioned exposure classes.

[Tab. 32] Rating agencies by receivables category

Receivables category	Exposure class	Rating agency
States	Central governments or central banks	Fitch, Moody's, S & P
Securitizations	CRSA securitization exposures IRBA securitization exposures	Fitch, Moody's, S & P

7.4.2. Transfer of credit assessments of issuer and issues

The process used by Hamburg Commercial Bank to transfer credit assessments of issuers and issues in accordance with Article 444 point (c) CRR in conjunction with paragraph 97 and Table CRD of EBA/GL/2016/11 is described below.

Issuer ratings are necessary to determine the CRSA and IRBA risk weight for securitizations as well as the eligibility of collaterals for CRSA and IRBA exposures. Hamburg Commercial Bank uses issuer ratings provided by the rating agencies Fitch, Moody's and S & P. The listed rating agencies were designated to the regulatory authorities by Hamburg Commercial Bank.

The Hamburg Commercial Bank uses only confirmed issuer ratings needed for securities. These will be connected to

each financial instrument and are used for the calculation according to Part 3 CRR (capital requirements), Part 4 CRR (large exposures) and Part 6 CRR (liquidity). Furthermore, it will be ensured that external ratings of securitization satisfy the proper requirements as delineated in Article 268 CRR. Determining the LGD, it will be tested whether the conditions with regard to eligible collaterals are met. Depending on the type of bond the CRR indicates a minimum level of creditworthiness that needs to be considered.

Issuer ratings are necessary to determine the CRSA risk weight for central governments. Thereby, Hamburg Commercial Bank uses issuer ratings of the rating agencies Fitch, Moody's and S & P. It will be ensured that only confirmed issuer ratings are used and external ratings are only used for central governments that are rated internally by the Hamburg Commercial Bank. After connecting the external ratings with the respective central government, the issuer ratings will then

be used for the calculation according to Part 3 CRR (capital requirements) and Part 4 CRR (large exposures).

7.4.3. The assignment of the external ratings to the credit quality steps

The assignment of the external rating to the credit quality steps according to Article 444 point (d) CRR is not disclosed as Hamburg Commercial Bank uses the standard mapping of EBA according to Article 270 CRR.

7.4.4. CRSA exposure under regulatory risk weights

In order to determine the capital requirements, both the standardized approach for credit risk and the advanced IRB

approach require risk-weighted exposures (the product of risk weight and exposure value) to be created. For the standardized approach for credit risk the risk weights have to be used, that depend on exposure classes and the published standard assignments of external ratings in accordance with Article 270 CRR.

Table CR4 shows - in accordance with Article 453 points (f) and (g) CRR in conjunction with paragraphs 95, 98, and 99 of EBA/GL/2016/11 - the effect of credit risk mitigation techniques for the standardized approach for the calculation of capital requirements, broken down by exposure class.

Further details on the credit risk mitigation techniques that are used will be disclosed in Table CR3 or 453g respectively.

[Tab. 33] CR4: Standardized approach – credit risk exposure and CRM effects in € m

Exposure class	a		b		c		d		e		f	
	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	13	-	14	-	0	0.0						
2 Regional government or local authorities	1	-	1	-	0	2.9						
3 Public sector entities	308	0	191	0	29	15.1						
4 Multilateral development banks	-	-	-	-	-	-						
5 International organisations	105	-	105	-	0	0.0						
6 Institutions	164	-	164	-	33	20.0						
7 Corporates	550	192	381	70	449	99.7						
8 Retail	26	3	16	1	12	72.8						
9 Secured by mortgages on immovable property	41	0	41	0	14	35.2						
10 Exposures in default	53	9	53	1	56	102.1						
11 Higher-risk categories	-	-	-	-	-	-						
12 Covered bonds	-	-	-	-	-	-						
13 Institutions and corporates with a short-term credit assessment	-	-	-	-	-	-						
14 Collective investment undertakings	-	-	-	-	-	-						
15 Equity	-	-	-	-	-	-						
16 Other items	-	-	-	-	-	-						
17 Total	1,261	204	966	72	593	57.1						

Table CR5 lists the CRSA risk exposure by exposure class and risk weight in accordance with Article 444 point (e) CRR in conjunction with paragraph 100 of EBA/GL/2016/11. Substitution effects lead to the replacement from originally higher risk weight to a lower risk weight. CR5 specifies in the EBA/GL/2016/11 only that part of requirement in Article 444

point (e) CRR that relates to exposures after credit risk mitigation. For reasons of materiality, the risk exposure by credit rating level before credit risk mitigation are not disclosed.

The allocation of positions to risk weights is made without taking into account the deduction provided for in Article 501(1) CRR.

[Tab. 34] CR5: Standardized approach – exposure values in € m

Exposure class	Risk weight								
	0%	2%	4%	10%	20%	35%	50%	70%	75%
1 Central governments or central banks	14	-	-	-	-	-	-	-	-
2 Regional government or local authorities	0	-	-	-	0	-	-	-	-
3 Public sector entities	47	-	-	-	144	-	-	-	-
4 Multilateral development banks	-	-	-	-	-	-	-	-	-
5 International organisations	105	-	-	-	-	-	-	-	-
6 Institutions	-	-	-	-	164	-	-	-	-
7 Corporates	-	-	-	-	-	-	-	0	-
8 Retail	-	-	-	-	-	-	-	-	16
9 Secured by mortgages on immovable property	-	-	-	-	-	36	5	-	-
10 Exposures in default	-	-	-	-	-	-	-	-	-
11 Higher-risk categories	-	-	-	-	-	-	-	-	-
12 Covered bonds	-	-	-	-	-	-	-	-	-
13 Institutions and corporates with a short-term credit assessment	-	-	-	-	-	-	-	-	-
14 Collective investment undertakings	-	-	-	-	-	-	-	-	-
15 Equity	-	-	-	-	-	-	-	-	-
16 Other items	-	-	-	-	-	-	-	-	-
17 Total	167	-	-	-	308	36	5	0	16

Exposure class	Risk weight							Total	of which unrated
	100%	150%	250%	370%	1250%	Others	Deducted		
1 Central governments or central banks	-	-	-	-	-	-	-	14	14
2 Regional government or local authorities	-	-	-	-	-	-	-	1	1
3 Public sector entities	-	-	-	-	-	-	-	191	191
4 Multilateral development banks	-	-	-	-	-	-	-	-	-
5 International organisations	-	-	-	-	-	-	-	105	105
6 Institutions	-	-	-	-	-	-	-	164	164
7 Corporates	450	-	-	-	-	-	-	451	451
8 Retail	-	-	-	-	-	-	-	16	16
9 Secured by mortgages on immovable property	-	-	-	-	-	-	-	41	41
10 Exposures in default	52	2	-	-	-	-	-	54	54
11 Higher-risk categories	-	-	-	-	-	-	-	-	-
12 Covered bonds	-	-	-	-	-	-	-	-	-
13 Institutions and corporates with a short-term credit assessment	-	-	-	-	-	-	-	-	-
14 Collective investment undertakings	-	-	-	-	-	-	-	-	-
15 Equity	-	-	-	-	-	-	-	-	-
16 Other items	-	-	-	-	-	-	-	-	-
17 Total	502	2	-	-	-	-	-	1,038	1,038

7.5. Equity holdings in the banking book

The regulatory authorities state that equity holdings must be consolidated, deducted from equity or backed with equity capital in the exposure class Equity holdings. In this context regulatory law considers equity holding risk to be a sub-class of the counterparty credit risk.

A key objective of the bank is to wind down the equity holdings not relevant to the core business. In the reporting year, the equity holding portfolio has been reduced. A further marginal decrease is to be expected in the financial year 2019.

The equity holdings from the banking book are explained below.

7.5.1. Objectives of equity holdings

The equity holding portfolio of the Hamburg Commercial Bank is divided essentially into five sub-portfolios. Each sub-portfolio has a different objective.

Strategic equity holdings

Strategic equity holdings are all those which have a strategic importance for the Group and/or promote the economic interests of the region.

Business segment-supporting equity holding

Equity holdings to support business segments are oriented towards expanding existing customer relationships or creating new ones.

Wind-down equity holdings

Wind-down equity holdings are former strategic equity holdings and/or equity holdings which must be wound-down in light of the decision of the EU Commission.

Bail-out purchases

Bail-out purchases are equity exposures which are entered into as part of the restructuring of a loan.

Other equity holdings

In contrast to the financial accounting regulations all items that contain a subordinated residual claim to the assets or in-

come of the issuer are classified as equity holding under supervisory law. Equity holdings which are considered as an equity holding under supervisory aspects (in accordance with CRR) but mostly are allocated to the item "Shares and other non-fixed-income securities" (in accordance with IFRS) therefore do not belong to the categorizations described above and instead are treated as other equity holdings.

Equity holdings contained in investment funds or funds-like certificates

Hamburg Commercial Bank does not have equity holdings contained in investments funds or funds-like certificates as at the reporting date.

7.5.2. Accounting policies for equity holdings

Regular business valuations represent an important instrument for monitoring and managing equity holding risks in the case of strategic and business segment-supporting equity holdings as well as wind-down equity holdings and bail-out purchases. The processes have been designed to ensure that the recoverability of all Hamburg Commercial Bank's direct equity holdings and relevant indirect equity holding are assessed at least once a year. Significant equity holdings are subject to a detailed assessment using the relevant standards of the Institute of Public Auditors in Germany ("Institut der Wirtschaftsprüfer"). All other equity holdings undergo a risk-oriented assessment.

Equity holdings which are allocated to the sub-portfolio "Other equity holdings" also represent a long-term commitment due to their allocation to the banking book.

Assets under the position financial investments are generally classified as FVPL Other according to IFRS 9.

7.5.3. Overview of equity holdings in the banking book

The equity holding portfolio of the banking book of Hamburg Commercial Bank as defined by Article 447 points (b) and (c) CRR is shown in the following table.

[Tab. 35] Valuation of equity holding instruments in € m

Equity holding portfolio	Carrying amount	Fair value	Stock market value
Strategic equity holdings	7	7	-
Items traded on the stock exchange	-	-	-
Not listed on the stock exchange but belonging to a sufficiently diversified equity holding portfolio	-	-	-
Other equity holding exposures	7	7	-
Business segment-supporting equity holding	2	2	-
Items traded on the stock exchange	-	-	-
Not listed on the stock exchange but belonging to a sufficiently diversified equity holding portfolio	-	-	-
Other equity holding exposures	2	2	-
Wind-down equity holdings	64	64	-
Items traded on the stock exchange	-	-	-
Not listed on the stock exchange but belonging to a sufficiently diversified equity holding portfolio	64	64	-
Other equity holding exposures	-	-	-
Bail-out purchases	-	-	-
Items traded on the stock exchange	-	-	-
Not listed on the stock exchange but belonging to a sufficiently diversified equity holding portfolio	-	-	-
Other equity holding exposures	-	-	-
Other equity holdings	36	36	8
Items traded on the stock exchange	8	8	8
Not listed on the stock exchange but belonging to a sufficiently diversified equity holding portfolio	-	-	-
Other equity holding exposures	28	28	-
Equity holding exposures contained in investment funds or funds-like certificates	-	-	-
Total	109	109	8

7.5.4. Realized profits and losses for equity holdings

In the course of IFRS 9 all equity holdings were classified to the business model "Other" and are subsequently recognized in the income statement. The fair value-OCI-option is not used. Changes in fair value and realization effects are reported under the item "Net income from financial instruments categorized as FVPL".

The following table shows the cumulative realized gains or losses on sales and liquidations referred to in Article 447 point (d) CRR, together with the valuation result on participating interests.

Due to the categorization of holdings as FVPL, the presentation of unrealized revaluation gains or losses in accordance with Article 447 point (e) CRR is not applicable.

[Tab. 36] Realized and unrealized gains or losses from equity holding instruments in € m

	Realised gains or losses from sales and liquidations	Valuation gains / losses
Equity holding exposures	- 3	5
Total	- 3	5

7.6. IRB approach

7.6.1. Structure of the internal rating systems and relationship between internal and external credit assessments

The rating systems for the individual portfolio segments were developed in cooperation with nine Landesbanks (Landesbank project) based on scorecard and simulation approaches. This cooperation between the Landesbanks led to the founding of RSU Rating Service Unit GmbH & Co. KG (RSU) in 2003. Since 2004, RSU has assumed responsibility for the methodological maintenance and development of the rating systems. The individual partner banks provide their expertise in the form of competence or support centers. Currently, 11 of the rating modules developed by the participating banks and provided by RSU in LB Rating are used in Hamburg Commercial Bank. In addition, RSU has integrated two rating modules from S Rating und Risikosysteme GmbH (SR), a subsidiary of Deutscher Sparkassen- und Giroverband (DSGV), into the central LB Rating application. All these rating modules are recognized for the purpose of reporting under CRR at Hamburg Commercial Bank. In addition, the LGD and CCF methodology developed by Hamburg Commercial Bank and approved by the supervisory authorities was transferred to the RSU network in 2009. Hamburg Commercial Bank assumes the competence center function for the LGD validation of all rating systems except aircraft and project finance.

The structure of the internal rating systems and relationship between internal and external credit assessments pursuant to Article 452(b) subpoint (i) CRR are explained below.

Rating methods

The rating systems distinguish between scorecard and cash flow approaches. The scorecard approach identifies characteristics and factors that are able to differentiate between good and bad borrowers. Their validity is first verified with a single factor model. Subsequently, several characteristics, which each have high significance in a single factor model, are combined to create a multi-factor model. The scores determined using the multi-factor model are translated to default proba-

bilities. A precondition for the application of a scorecard approach is that a sufficient number of relatively homogeneous borrowers are available.

The cash flow approach simulates cash flows of one asset in various scenarios. These vary depending on macro-economic and sector-based conditions. A simulation engine (SimEngine) is used to create numerous scenarios which differ according to macro-economic conditions. Additionally, sector-based models calculate scenarios for future changes in sector-related factors such as rents, vacancies or charter rates. The values are then fed into the calculation of scenarios for the cash flow of the corresponding asset. Subsequently scenarios are selected where the borrower must be considered to be defaulting. The default probability is calculated as a ratio from the number of scenarios where a default was recorded to the total number of scenarios.

Both the scorecard and the cash flow approaches include quantitative as well as qualitative factors. Once these factors have been taken into consideration, warning signals and the company background are examined. There are also override opportunities, allowing ratings to be moved up to a limited extent and down to an unlimited extent. In the final rating result, the local currency rating, all of these aspects have been taken into consideration. As a result, an individual PD is obtained for each borrower, enabling assignment to a specific credit rating class. When measuring borrower risk, the risk of foreign currency transfer restrictions has to be considered, as well as default risk.

The rating result is calibrated on a standard rating master scale. This master scale is the DSGV master scale from which Hamburg Commercial Bank implemented 22 live and 3 default categories. Each rating class on the rating master scale is assigned a one-year default probability. This standard rating scale allows for immediate comparison of existing ratings separately from the portfolio segment. The scale also includes mapping of external ratings to the internal categories.

The rating modules and methods used at Hamburg Commercial Bank as at the reporting date for the purposes of reporting under CRR are shown in the following table. Capital requirements are calculated using the advanced IRB approach.

[Tab. 37] Rating modules of Hamburg Commercial Bank approved by the supervisory authorities

Borrower, bearer of economic risk, asset or project	Rating module	Rating method
Corporates	Corporates Sparkassen-StandardRating	Scorecard
Real estate	Sparkassen-Immobilien-geschäftsRating (SIR) Internationale Immobilienfinanzierungen	Cash flow and scorecard
Ships	Ship financing	Cash flow
Banks, savings banks	Banks and DSGVO guarantee system	Scorecard
Insurance companies	Insurance companies	Scorecard
International regional authorities	International regional authorities	Scorecard
Leasing companies, real estate lessees	Leasing	Scorecard with cash flow component
Projects	Project financing	Cash flow
Single-airline-financing	Aircraft financing	Cash flow
Leveraged Buy Out financing	Leveraged finance	Scorecard
Individuals, self-employed, craftsmen, corporate clients	Sparkassen-StandardRating or Sparkassen-Immobilien-geschäftsRating (SIR) (depending on the primary origin of capital)	Scorecard or cash flow
States, national authorities	Country and transfer risk	Scorecard

The banks participating in the further development of the RSU-rating systems are divided into competence and support centers and participants. The competence center bank assumes a leading role in the development and maintenance of modules where it can offer special expertise. It is supported by experts from the support banks.

Hamburg Commercial Bank has the main responsibility for the rating modules ship financing and leveraged finance. The

respective internal audit division as an independent body reviews the validation and further development of the rating procedures at both RSU and SR and at Hamburg Commercial Bank.

The following table compares Hamburg Commercial Bank's rating master scale with external credit assessments.

[Tab. 38] Connection between internal and external credit assessments

Rating classification per the master scale rating	Moody's	S & P	Fitch
1(AAAA)	-	-	-
1(AAA)	Aaa, Aa1	AAA, AA+	AAA
1(AA+)	Aa2, Aa3	AA, AA-	AA+, AA
1(AA)	A1	A+	AA-
1(AA-)	-	-	-
1(A+)	A2	A	A+
1(A)	A3	A-	A
1(A-)	-	-	-
2	Baa1	BBB+	A-
3	Baa2	BBB	BBB+
4	Baa3	-	BBB
5	-	BBB-	-
6	Ba1	BB+	BBB-
7	Ba2	BB	BB+
8	-	-	BB
9	Ba3	BB-	BB-
10	B1	B+	-
11	-	-	B+
12	B2	B	B
13	-	-	-
14	B3	B-	B-
15	Caa1 - Caa3	CCC+ - C	CCC+ - C
16 - 18	Default Rating	Default Rating	Default Rating

LGD method

Modelling is based on historical losses, which are collected together with other banks and analyzed using statistical and econometric techniques.

The LGD calculation method was developed successively by Hamburg Commercial Bank for each rating segment and is continuously reviewed and refined in the course of the annual validation process. Since the transition to the RSU association in 2009, validation has been done jointly with other banks. The result are estimation methods for the determination of the risk of secured and unsecured exposures under consideration of recovery rates regarding specific collateral and specific borrowers (proceeds of the assets in bankruptcy). The secured exposure is not totally free of risk and has a basic risk. LGD calculation takes into account the current data in the legacy systems.

When determining LGD (overall LGD) three possible default scenarios are considered. In addition to winding down, restructuring of the defaulted commitment is possible. In the best case scenario recovery is possible. LGD estimation is based on observation of the workout case. In order to draw up a forecast for the loss ratio, the proceeds of the sale of collateral (the product of the market value of the collateral asset and a recovery rate specific to that asset) and proceeds from

the bankruptcy estate (the product of non-collateralized exposure and a borrower-specific recovery rate) are used. The LGD estimate takes into account the individual specific default duration.

Downturn-LGD method and calculation

Generally, the calculation of a downturn parameter is only relevant to models that are influenced by a macroeconomic environment. Thereby, ratios resulting from years below the average (e.g. 25 %-quantile) will be undertaken in relation to the ratio calculated on the normal basis (e.g. 50 %-quantile). This is only reasonably possible for models for which sufficient data is available. An alternative procedure is the consideration of external studies, data or comparisons of other models.

Review and any updating processes of the downturn parameters are made within the standard maintenance.

CCF method

In contrast to assets on the balance sheet, where future exposure can be calculated from the loan agreements, receivables from the classic off-balance-sheet business must have the exposure at default (EaD) calculated using a credit conversion factor (CCF). The CCF is assessed annually on a joint basis as part of the RSU association together with other banks.

CCF indicates the proportion of outstandings under open credit lines or amount of credits that can generally be taken into account which are actually utilized by the borrower at the time of default.

CCF-model classification

There are two steps of assigning transactions to CCF-models. In a first step, all transactions that are not relevant to CCF or not directly used in order of CCF calculation are identified. Such transactions are not assigned to any CCF-models. All other transactions are assigned to a CCF-model based on the type of credit within the second step.

Reference structure of transactions and aggregated amounts

It is possible to combine individual customer transactions within the loss data base. This is possible and even necessary when transactions (e.g. a loan) show the drawdown on a credit line of another transaction (e.g. commitment). Consequently, a reference structure always consists of a main transaction and one or more partial transactions.

CCF of commitments and master agreements

The CCF of commitments and master agreements describes the utilization of the undrawn credit line at the time of default 1 year prior to the occurrence of the default by the debtor. CCF is the ratio between the additional amount of a loan used in the future divided by the amount that could be claimed.

CCF of sureties and letter of credit

With regard to sureties and letter of credits there is a higher risk of drawing by the borrower after the time of default as it is presumed that financial compensations (by a third-party) for the defaulted borrower are not likely. Regarding sureties and letter of credit the CCF is generally calculated based on a ratio resulting from discounted drawdowns of the sureties or letter of credit after the year of default t_0 and in the year of default $1A \geq t_0$ as well as from sureties and letter of credit that exist at the time of forecast $t-1$ (one year before default).

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

Hamburg Commercial Bank uses parameters determined internally within the meaning of Article 452(b) subpoint (ii) CRR in many areas of the Group. For example, all risk parameters EaD/CCF, PD and LGD are actively used as part of overall bank management. In particular the risk parameters are embedded into risk-adjusted pricing of loan applications, the procedure to create loan loss provisions as well as into the profit

center calculation. The rating systems are used with the corresponding risk parameters in the following steering systems of the bank:

- loan approval procedures/determination of competences
- a prior and ex-post calculation of individual transactions
- limit setting
- reporting
- commitment monitoring
- intensified loan management/restructuring

In addition, the parameters are used for on-going scenario calculations and in the planning and strategy process.

7.6.3. Permission from the competent authorities to use the IRB approach or accepted transitional arrangements

Hamburg Commercial Bank determines all parameters required to determine the risk-weighted exposure amount internally, i.e. probability of default (PD), loss given default (LGD), exposure at default (EaD), credit conversion factor (CCF) and maturity (M), and hence, complies with the requirements of the advanced IRB approach for credit risks. Hamburg Commercial Bank already received the necessary permission from the competent authorities in 2007 to use this approach in accordance with Article 452 point (a) CRR in conjunction with Section 103 and Table CRE by the EBA/GL/2016/11. The implementation phase was completed as at 12/31/2012 by achieving the exit threshold in accordance with § 10(3) SolvV.

Hamburg Commercial Bank does not currently apply any transitional arrangements with respect to the use of the IRB approach. Exposure classes, to which the standardized approach for credit risk is permanently applied, and any relevant exemptions or transitional arrangements for these exposure classes are presented at appropriate points in the following sections.

An exit threshold of over 92% is achieved for all coverage ratios of regulatory relevance - i.e. based on IRBA exposure values pursuant to § 11(1) SolvV and on risk-weighted IRBA exposure values pursuant to § 11(2) SolvV - as at the reporting date at both the institution and group level.

The following table shows the credit exposures broken down by IRB-exposure classes and IRB-rating modules. The data basis of this table differs due to methodical reasons from the other tables in Section Default Risk. Beside the credit risks the data basis consists also of counterparty credit risk. The background to this is that the application of rating procedure is independent of the type of transaction and therefore a limitation only to credit risk is not appropriate.

[Tab. 39] Exposure values by IRBA-exposure class and IRBA-rating module in € m

Exposure class	Rating process	Exposure value
Central governments and central banks	Banks and DSGVO Guarantee System	1,891
	Corporates	34
	International Regional Authorities	246
	Country and Transfer Risk	14,005
	Sum	16,176
Institutions	Banks and DSGVO Guarantee System	4,473
	Corporates	85
	Sparkassen-Immobilien­geschäftsRating (SIR)	29
	International Regional Authorities	111
	Project financing	18
	Sum	4,716
Corporates	Banks and DSGVO Guarantee System	497
	Ship financing	3,862
	Corporates	8,489
	Sparkassen-StandardRating	112
	Sparkassen-Immobilien­geschäftsRating (SIR)	12,986
	Leveraged Finance	499
	Leasing Companies	26
	Real Estate Leasing (SPC)	427
	Insurance Companies	50
	International Commercial Real Estate	1,237
	Project financing	5,230
	Aviation Financing	-
	Sum	33,415
Equities ¹⁾	Banks and DSGVO Guarantee System	5
	Corporates	8
	Sparkassen-Immobilien­geschäftsRating (SIR)	1
	Leveraged Finance	0
	Real Estate Leasing (SPC)	1
	Sum	15

1) Equities acc. to Article 155(3) CRR (PD/LGD approach)

7.6.4. Control mechanisms for rating systems

In accordance with Article 452(b) subpoint (iv) CRR in conjunction with paragraph 103 and Table CRE of EBA/GL/2016/11 the control mechanisms for the rating systems are described below.

Description of the rating process

The rating process is divided into a creation process and determination process and is subject to the dual control principle. The determination of the rating is set by back office processing and control divisions.

The rating guidelines in the Credit Manual specify for all exposure amounts (except the retail portfolio and risks with total lending less than € 750,000 per group of connected clients or less than € 75,000 at business partner level) that internal rating systems recognized under supervisory law must be used. An individual credit assessment must be prepared,

- for borrowers, bearers of economic risk, rating issuers (this applies also to the purchase of receivables without recourse);
- for persons who act exclusively as support in the rating modules;
- as a precondition in order to include specific collateral (e.g. personal collateral) provided as a risk reduction to the benefit of Hamburg Commercial Bank.

Each borrower subject to rating is given only one rating for local currency rating and, if necessary a foreign currency rating.

The exact triggers for the rating are also specified in the Credit Manual. Each rating must be updated according to risk aspects (required for re-rating) – but at the latest within twelve months – and verified and confirmed by the back office division. Special risk aspects which require updating before the end of the 12-month period are specifically:

- significant expansion of the counterparty credit risk,
- knowledge of significant new risk-related information,
- commitments where a currency transfer risk exists if the risk country migrates to rating class 9 or worse,
- defaults and recoveries according default guidelines.

As long as the person or entity to be assessed is classified in a default class (rating level 16–18), regular re-rating is not necessary. The default reasons are however to be updated in the rating, if there is a change within the default rating classes based on new information received. This does not apply to the rating systems for ship, aviation and project financings, for which ratings – also in the case of default – are to be generally updated at least once within 12 months.

The guidelines in the Credit Manual explain the requirements for creating a rating unit. It sets out when the rating of the legal borrower is waived as part of the rating and the loan

decision process and the rating of the bearer of economic risk and/or the rating donor is to be applied instead.

The rating process is regulated in the Credit Manual. In addition the respective specialized rating manuals are to be observed with the regard to the specific module requirements.

To ensure comprehensive rating for the exposure for which risk classification is required by CRR, the bank has established a process quality controlling.

Rating systems review

A validation of all rating modules and of the LGD and CCF models of Hamburg Commercial Bank is performed annually within the meaning of Article 144(1)(e) CRR and Article 185 CRR. The management board will be informed annually about the validation results of the rating modules and its consequences.

The validation includes the following steps:

- analysis of portfolio and market performance (e.g. description of the portfolio according to region and relevant customer types)
- analysis of rating distributions
- backtesting (comparison with actual default rates) and/or benchmarking (comparison with external ratings)
- calibration (verification of the extent of allocated default probabilities)
- examination of selectivity (ability of the rating module to differentiate between good and bad borrowers)
- review of the model structure and design (e.g. significance and weighting of individual factors and partial models, inclusion of supporters, analysis of the frequency with which data were overwritten and the reasons for this, inclusion of the transfer risk)
- examination of the application of ratings (e.g. analysis of data quality, verification of standard application by carrying out duplicate analyses).

The process of validation involves two steps:

- The first step involves validation based on the pooled data of all partner banks and savings banks under the lead management of RSU and/or SR. Data are pooled specifically to create the largest possible and hence statistically most significant database. In cooperation with the relevant competence center and support center, RSU performs the validation and, if necessary, the recalibration and further development of the modules on the basis of the pooled data. For the modules of SR, pooling is carried out on the basis of data from participating savings banks and participating banks. Updates, validation and developments are made by SR.
- As the validation is done on the basis of the pooled data, it is necessary to demonstrate that the results can also be

applied to Hamburg Commercial Bank. This is done in a second step in cooperation with RSU as well as SR.

The LGD and CCF methods are also validated annually jointly with other banks, similar to validation of the rating modules. In addition, the validity of RSU and SR is also determined independently of maintenance and development.

Within the Hamburg Commercial Bank the unit credit risk control is responsible for the support, development and methodologies of the rating modules as well as LGD and CCF models.

The unit Model Validation was created to ensure independence between the development of models and validation. All models from the model inventory for which GRM is responsible are validated across all risk types. The functional consistency of the risk modelling is also ensured. Additionally, consistent and transparent model risk governance regarding the process of model risk management was implemented.

IRBA Risk Model Reporting

IRBA risk models are monthly reported to the Group Bank Steering Committee and executive board members of CRO and CFO. Thereby, validation results of each rating module including potential actions that might be required as well as assessments of effects for modules that need to be validated are submitted. Each report provides the following information regarding the rating module: EaD, pool validation decision, internal validation decision including potential measures, decision on calibration, selectivity, model adjustments, changes in capital adequacy and changes in EL. Furthermore, the GBS Committee will be provided with information concerning regulatory findings of the IRBA modules on the basis of institutional and pool level.

Additionally, aspects regarding the concentration on default risks, development of EaD, EL, capital adequacy, PD and LGD are presented in different dimensions. Since the beginning of 2018 Hamburg Commercial Bank has a two-step decision-making process according to changes in methodologies, policies and processes.

Beside the GBS Committee operating in the "designated committee" function with the participation of the board management (Article 189 CRR) a model management committee ("Modellsteuerungskreis" MSK) was created. The MSK manages the interface between the GBS and the units that are responsible for the development, operating and validation of the models used by the risk management.

Considering the principle of proportionality, this process ensures an adequate depth of expert knowledge and a timely decision-making. The organizational separation of development unit and validation units within Hamburg Commercial Bank, was implemented at the beginning of 2018.

7.6.5. A description of the internal ratings process by exposure classes

Positions which cannot be rated using a recognized IRBA rating system but have an internal expert rating are calculated in the standardized approach for credit risk (see Section 7.4). The internal valuation methods are applied to exposure classes under the IRB approach as laid down in Article 452 point (c) CRR in accordance with paragraph 103 of EBA/GL/2016/11 and Table CRE. The scope of application of an IRBA rating module generally covers several exposure classes. Table 39 shows the IRBA rating modules that are used for each exposure class. The assignment of positions to exposure classes is carried out independently of the IRBA rating module used on the basis of a customer classification key, which is an encryption of the business partners according to various features.

IRBA module "Banks"

The context of the approach used for the rating model of banks is restricted to rating objects that are generally related to typical banking transactions (material view on the definition of banks). Bank holdings, Bausparkassen (building society), public funding agencies and financial service provider can be rated within this module.

The development of the model was realized by RSU mainly following a statistical approach (comparison with internal default history and with external ratings) but also taking into account expert judgment based on the statistical results to ensure the economic plausibility of the outcomes.

IRBA module "DSGV Guarantee System" (Banken DHV)

The rating module "Banken DHV" is only used for the valuation of the DSGV Guarantee System. This module offers some special characteristics defined by no past defaults and insider information available for determining system parameters.

The simulation-based approach is very similar to the CreditMetrics credit portfolio model. Thereby, statistical analyses and expert judgment are used for parameterizing risk factors and for validation.

IRBA module "Corporates"

The corporate rating module presents a rating for corporate businesses (turnover of € 20 m or more) whereby the rating method can generally be used cross-sectoral for all corporate businesses worldwide. A basic requirement for the usage of corporate modules is that the company has a commercial accounting with annual financial statements and a business administrative management.

The development of the model was realized by RSU mainly following a statistical approach but also taking into account expert judgment based on the statistical results to ensure the economic plausibility of the outcomes

IRBA module “Real Estate Leasing”

The object of the rating module “SPC-Real Estate Leasing” is to value special purpose companies (SPC) in order to finance real estates. The lessee can be rated with other internal IRBA methods. A leased object is defined by national or international real estate for which its value is based on an expert valuation. Thereby, financing processes refer to the residual value (independent whether open or not), direct loans to the SPC or leasing receivables.

The development of the model was realized by RSU mainly following a statistical approach (comparison with internal default history and with external ratings) but also taking into account expert judgment based on the statistical results to ensure the economic plausibility of the outcomes.

IRBA module “International Commercial Real Estate (ICRE)”

The object of the rating module “ICRE” is to value commercial real estates. Thereby, the location of the property or the focus of the real estate portfolio needs to be outside Germany. Whereas the borrower may be domiciled in Germany or abroad. A condition to use this model is defined by the cash flows. Thereby generated cash flows such as rentals, lease payments and sales proceeds for which the loan will be applied with are directly assigned to the property portfolio.

The simulation approach aims at providing an economic model based on an analysis of cause-effect relationships. Cash flow numbers, object values and transaction characteristics are the main risk drivers used in the simulation.

IRBA module “International Regional Authorities”

The module “International Regional Authorities” is used to assess the economic ability and willingness on an international government body outside Germany to meet its payment obligations full and punctually. The module covers regions and municipalities below the level of federal government, which perform public sector responsibilities for private households and companies within their administrative areas and can levy taxes and other charges.

The development of the model was realized by RSU mainly following a statistical approach but also taking into account expert judgment based on the statistical results to ensure the economic plausibility of the outcomes.

IRBA module “Country and Transfer Risk”

The module “Country and Transfer Risk” is used to calculate the probability of default of countries for obligations in both domestic and foreign currency as well as the probability of default of transferring transactions. This module calculates the risk that a foreign debtor may be prevented from meeting its payment obligations in foreign currency by government imposed restrictions.

The development of the model was realized by RSU mainly following a statistical approach but also taking into account

expert judgment based on the statistical results to ensure the economic plausibility of the outcomes.

IRBA module “Leasing Companies”

The module “Leasing Companies” is intended for rating leasing companies that apply German accounting standards (HGB).

The development of the model was realized by RSU mainly following a statistical approach (comparison internal default history) but also taking into account expert judgment to ensure the economic plausibility of the outcomes.

IRBA module “Leveraged Finance”

The module “Leveraged Finance” is intended for Leveraged Buyout transactions, comparable business acquisitions such as Management Buy-Outs, Management Buy-Ins etc. as well as strategic takeovers or acquisitions involving substantial borrowing.

The development of the Leveraged Finance model was realized on by RSU mainly following a statistical approach but also taking into account expert judgment to ensure the economic plausibility of the outcomes.

IRBA module “Insurance Companies”

The rating module “Insurance Companies” is designed for rating companies that are commonly classified as insurers or generate more than 50 % of their gross operating income from insurance business or all companies that can be classified as insurance businesses.

The development of the model was realized by RSU mainly following a statistical approach but also taking into account expert judgment based on the statistical results to ensure the economic plausibility of the outcomes.

IRBA module “Project Financing”

Generally, the module project financing can be used for all types of project financing. Project financing correspond to projects that have normally limited timeframes. The expected cash flow for this financed project will be determined.

The development of the model was realized by the RSU. It is based on a simulation approach whose aim is to provide an economic model which is based on an analysis of cause-effect relationships. Cash flow numbers, project value and transaction characteristics are the main risk drivers used in the simulation.

IRBA module “Ship Financing”

This module calculates the probability of default (PD) and the loss given default (LGD) for object financing in the portfolio of ship financing. Thereby, the definition of object financing is based on the requirements of the Basel Committee on Banking Supervision in the field of specialized lending (addressed in CRR).

The development of the model was realized by the RSU. It is based on a simulation approach whose aim is to provide an economic model which is based on an analysis of cause-effect relationships. Cash flow numbers, object values and transaction characteristics are the main risk drivers used in the simulation.

IRBA module "Aviation Financing"

The module "Aviation Financing" intends to estimate and calculate the probability of default of object financing in the portfolio of aviation financing. Thereby, the definition of object financing is based on the requirements of the Basel Committee on Banking Supervision in the field of specialized lending

The development of the model was realized by the RSU. It is based on a simulation approach whose aim is to provide an economic model which is based on an analysis of cause-effect relationships. In the case of aircraft leasing finance cash flows are not the main source of risk. Object values, Airline PDs and transaction characteristics are used as the main risk drivers in the simulation.

IRBA module "Sparkassen-Immobilien-geschäfts-Rating"

The module "Sparkassen-Immobilien-geschäfts-Rating (SIR)" rates commercial real estate projects. A real estate is defined as commercial if the rentals, lease payments and sales proceeds are directly assigned to the property portfolio. The component "Object Rating" is used for real estate which are located in Germany. If a customer may have both - domestic and foreign property - the foreign real estate will then be valued within the solvency rating (in case SIR can be used). Process specific standards of RSU are used relating to the application of ICRE.

The development of the model was realized by the SR. It is based on a simulation approach whose aim is to provide an economic model which is based on an analysis of cause-effect relationships. Cash flow numbers, object values and transaction characteristics are the main risk drivers used in the simulation. Simulation results are transformed, calibrated and adjusted by qualitative factors (specified by experts).

IRBA module "Sparkassen-Standard-Rating"

The module "Sparkassen-Standard-Rating" is designed for the valuation of commercial customers, corporates (up to € 20 m turnover), freelancers and entrepreneurs.

The scoring approach aims at providing an economic model based on an analysis of cause-effect relationships. Annual financial statements, behavioral analysis and qualitative information, that are measured by scoring, are the main factors deriving to the rating score.

Retail exposures

For retail exposures Hamburg Commercial Bank only uses the standardized approach for credit risk.

Equity holding exposures

For the rating of equity holding exposures the rating modules for credit risk are used. If no rating module recognized under supervisory law can be used for an equity holding exposure, the simple risk-weight approach is used according to Article 155(2) CRR.

Default definition

Hamburg Commercial Bank does not deviate from the definition of default in Article 178 CRR.

7.6.6. Quantitative information on the use of the IRB approach

Table CR6 shows the credit exposure in accordance with Article 452 points (e) and (g) CRR in conjunction with paragraphs 104 to 107 of EBA/GL/2016/11 allowing for credit risk mitigation techniques.

In addition to the credit risk exposures, parameters for calculating capital requirements using IRBA models are disclosed

for each exposure class and rating range. As Hamburg Commercial Bank does not calculate retail business using the IRB approach and does not use internal models under Article 155(4) CRR, these rows remain empty. The bank uses only the advanced IRB approach (AIRB). Therefore, a separate table for the foundation IRB approach (FIRB) is not presented.

The risk position exposures include purchased corporate receivables amounting to € 208 m. No separate disclosure has been made for reasons of materiality.

[Tab. 40] CR6: IRB approach - credit risk exposures by exposure class and PD range in € m

Exposure class	PD scale	a	b	c	d	e	f	g	h	i	j	k	l
		Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD post CRM and CCF	Average PD	Number of obligors	Average LGD	Average Maturity	RWAs	RWA density	EL	Value adjustments and provisions
Central governments and central banks													
	0.00 to < 0.15	15,907	12	89.6	15,918	-	25	23.3	2.3	84	0.5	0	
	0.15 to < 0.25	23	-	-	23	0.2	1	40.0	5.0	13	59.1	0	
	0.25 to < 0.50	75	-	-	75	0.3	3	39.4	5.0	58	77.6	0	
	0.50 to < 0.75	-	-	-	-	-	-	-	-	-	-	-	
	0.75 to < 2.50	-	-	-	-	-	-	-	-	-	-	-	
	2.50 to < 10.00	7	-	-	7	4.4	1	40.0	5.0	12	164.3	0	
	10.00 to < 100.00	56	-	-	56	15.0	1	40.0	5.0	132	234.6	3	
	100.00 (Default)	0	-	-	0	100.0	1	75.0	1.0	0	62.5	0	
	Subtotal	16,068	12	89.6	16,079	0.1	32	23.5	2.4	300	1.9	4	21
Institutions													
	0.00 to < 0.15	3,653	276	36.5	3,753	0.1	98	14.4	2.8	401	10.7	0	
	0.15 to < 0.25	228	1	20.0	228	0.2	10	7.5	2.6	21	9.4	0	
	0.25 to < 0.50	19	1	20.0	19	0.4	7	33.8	4.3	13	65.2	0	
	0.50 to < 0.75	13	3	20.0	14	0.6	8	34.8	3.2	9	69.1	0	
	0.75 to < 2.50	-	31	42.6	13	0.9	3	57.0	5.0	21	160.3	0	
	2.50 to < 10.00	27	-	-	27	6.7	3	51.7	1.0	49	180.4	1	
	10.00 to < 100.00	-	-	-	-	-	-	-	-	-	-	-	
	100.00 (Default)	-	-	-	-	-	-	-	-	-	-	-	
	Subtotal	3,940	311	36.8	4,055	0.1	124	14.6	2.8	515	12.7	1	2
Corporates - Specialised lending													
	0.00 to < 0.15	5,217	537	46.6	5,467	0.1	257	18.8	2.9	592	10.8	1	
	0.15 to < 0.25	1,692	361	43.9	1,851	0.2	92	23.9	2.7	375	20.2	1	
	0.25 to < 0.50	4,725	1,221	42.1	5,239	0.3	199	27.0	3.1	1,808	34.5	4	
	0.50 to < 0.75	2,097	1,131	39.7	2,546	0.6	111	32.3	2.6	1,286	50.5	5	
	0.75 to < 2.50	4,644	580	40.4	4,879	1.4	213	24.5	2.7	2,627	53.9	16	
	2.50 to < 10.00	1,107	1	37.0	1,107	3.6	53	27.1	2.2	780	70.5	10	
	10.00 to < 100.00	1,045	30	4.6	1,046	15.7	59	24.8	2.5	1,137	108.8	42	
	100.00 (Default)	694	10	44.2	698	100.0	53	44.8	3.9	376	53.8	283	
	Subtotal	21,221	3,871	41.7	22,833	4.4	1,037	25.3	2.8	8,981	39.3	361	889
Corporates - SME													
	0.00 to < 0.15	32	68	46.4	64	0.1	18	49.0	2.2	18	27.7	0	
	0.15 to < 0.25	98	73	42.6	129	0.2	17	42.3	2.6	46	35.4	0	
	0.25 to < 0.50	163	120	45.6	217	0.3	51	38.6	2.8	99	45.5	0	
	0.50 to < 0.75	50	57	40.8	74	0.6	21	34.0	2.5	39	53.0	0	
	0.75 to < 2.50	216	87	50.0	259	1.3	52	39.5	2.5	193	74.3	1	
	2.50 to < 10.00	161	23	40.0	170	3.2	7	35.3	2.1	159	93.5	2	
	10.00 to < 100.00	29	47	38.6	47	15.6	7	37.7	3.0	81	173.1	3	
	100.00 (Default)	79	54	49.8	106	100.0	14	57.8	2.2	72	68.5	55	
	Subtotal	827	529	45.1	1,066	11.6	187	40.9	2.5	707	66.3	62	93

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Exposure class	PD scale	a	b	c	d	e	f	g	h	i	j	k	l
		Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF	EAD post CRM and post CCF	Average PD	Number of obligors	Average LGD	Average Maturity	RWAs	RWA density	EL	Value adjustments and provisions
Corporates - Other													
	0.00 to < 0.15	1,300	1,124	44.0	1,795	0.1	113	39.4	2.9	503	28.0	1	
	0.15 to < 0.25	562	546	45.6	811	0.2	59	40.9	3.4	387	47.7	1	
	0.25 to < 0.50	1,948	1,390	41.7	2,528	0.3	127	41.2	2.9	1,443	57.1	3	
	0.50 to < 0.75	578	547	45.6	827	0.6	44	40.4	2.8	619	74.8	2	
	0.75 to < 2.50	1,268	677	42.3	1,554	1.3	102	40.9	2.7	1,535	98.8	8	
	2.50 to < 10.00	329	99	50.5	379	5.1	26	29.3	2.6	399	105.3	6	
	10.00 to < 100.00	99	49	39.1	118	14.9	14	22.6	2.8	140	118.1	4	
	100.00 (Default)	299	16	54.8	307	100.0	31	50.9	2.3	181	58.9	142	
	Subtotal	6,384	4,447	43.5	8,320	4.6	514	40.2	2.8	5,207	62.6	166	149
Retail													
Equities acc. to art. 155(3) CRR													
	0.00 to < 0.15	-	-	-	-	-	-	-	-	-	-	-	
	0.15 to < 0.25	-	-	-	-	-	-	-	-	-	-	-	
	0.25 to < 0.50	4	0	100.0	4	0.4	1	90.0	5.0	8	191.9	0	
	0.50 to < 0.75	-	-	-	-	-	-	-	-	-	-	-	
	0.75 to < 2.50	6	-	-	6	1.3	5	84.7	5.0	16	262.7	0	
	2.50 to < 10.00	4	-	-	4	4.4	1	90.0	5.0	15	369.6	0	
	10.00 to < 100.00	0	-	-	0	20.0	1	65.0	5.0	2	403.7	0	
	100.00 (Default)	0	-	-	0	100.0	1	95.1	5.0	0	61.0	0	
	Subtotal	14	0	100.0	15	2.4	9	87.2	5.0	40	273.9	0	-
	Equities acc. to Art. 155(2) CRR	66	28	100.0	94		43		-	235	250.5	1	-
	Equities acc. to Art. 155(4) CRR												
	Other non credit-obligation assets	445	-		445		11		5.0	404	90.8		-
Total		48,966	9,199	42.8	52,907	2.9	1,949	26.6	2.7	16,389	31.0	597	1,153

Average LGD and PD by geographical location

The exposure-weighted average LGD and PD are shown in the following table for each geographical area in accordance with Article 452(j) subpoint (i) CRR. For the purpose of this table and in line with the Consultation Paper EBA/CP/2016/07, the location of the institution respectively branch where the exposure is recorded is shown and not the debtor's country of residence.

Information is provided in accordance with the definition in Article 452 Sentence 3 CRR for the EU member states Germany, Greece and Luxembourg, as well as the third country Singapore. Hamburg Commercial Bank is either licensed in these countries or conducts its business activities there through a branch or subsidiary as at the reporting date.

The Athens branch did not record any business in the reporting year.

[Tab. 41] 452j: Average LGD and PD by geographical location according to Article 452(j) CRR

Exposure class	Avg. PD in %	Avg. LGD in %
Germany		
Central governments and central banks	0.1	23.5
Institutions	0.1	14.0
Corporates	4.6	29.8
Equities under PD/LGD approach - Art. 155(3) CRR	2.4	87.1
Subtotal	2.9	26.7
Greece		
Central governments and central banks	-	-
Institutions	-	-
Corporates	-	-
Equities under PD/LGD approach - Art. 155(3) CRR	-	-
Subtotal	-	-
Luxembourg		
Central governments and central banks	0.0	24.0
Institutions	0.1	26.4
Corporates	22.4	38.1
Equities under PD/LGD approach - Art. 155(3) CRR	100.0	95.1
Subtotal	2.6	26.4
Singapore		
Central governments and central banks	0.0	25.6
Institutions	0.1	38.6
Corporates	8.8	19.8
Equities under PD/LGD approach - Art. 155(3) CRR	-	-
Subtotal	7.7	20.5
Total	2.9	26.6

Credit derivatives

Table CR7 shows the effect of credit derivatives purchased for hedging the loan portfolio on the capital requirements according to paragraph 108 of EBA/GL/2016/11.

Hedging with regard to credit risk mitigation only occurs with cash collaterals resulting from credit linked notes. According to Article 218 CRR collaterals resulting from credit linked notes are not treated as credit derivatives but as cash collaterals. Therefore, credit derivatives have currently no impact on the capital requirements and Table CR7 is omitted.

RWA flow statements

According to Article 92(3)(a) and Article 438 point (d) CRR in conjunction with paragraph 109 of EBA/GL/2016/11, Table CR8 shows the flow statements showing adjustments on

the risk weighted exposure (RWA) calculated under the IRB approach and accordingly the required capital requirements with regard to the credit risk. Table CR8 does not include securitizations, counterparty credit risk and other assets excluding loan commitments according to Article 147(2)(g) CRR. Included are all participations under Article 155 CRR, not only IRBA participations for which the PD/LGD approach is applied.

Table CR8 is published for the last time on a quarterly basis – in future on a semi-annual basis – so the end of the last reporting period is the end of the previous quarter.

[Tab. 42] CR8: RWA flow statements of credit risk exposures under the IRB approach in € m

	a	b
	RWA amounts	Capital requirements
1 RWAs as at the end of the previous reporting period 09/30/2018	17,124	1,370
2 Asset size	- 986	- 79
3 Asset quality	- 225	- 18
4 Model updates	71	6
5 Methodology and policy	-	-
6 Acquisitions and disposals	- 32	- 3
7 Foreign exchange movements	20	2
8 Other	13	1
9 RWAs as at the end of the reporting period 12/31/2018	15,985	1,279

Main adjustments of the RWA flow statements as at the reporting day as well as key drivers will be described as follows as required by EBA/GL/2016/11.

The effect in terms of asset size is mainly attributable to the reduction of credit risks due to the portfolio transaction and the increase of credit risks due to the termination of the Horizon securitization transaction. Details concerning these facts and the course of business are provided in the Group Management Report (Basis of the Group and Economic Report) of the Hamburg Commercial Bank's Annual Report.

The RWA reduction in the area of asset quality results on the one hand from improvements in the average PD and LGD and on the other hand from a shortening of the average maturity. Changes in collateral and changes in valuation of collateral causes changes in LGD values and have an impact on asset quality.

The model adjustments in Q4/2018 were mainly driven by overflow effects from the projects in 2017 and 2018, in particular from the model changes in the rating modules Corporates and International Commercial Real Estate (increase in PD). For methodological changes from maintenance projects in rating

procedures, the effects are spread over the next three quarters.

There were no significant regulatory adjustments to the RWA cash flow statement in the reporting period.

As part of the portfolio transaction, Hamburg Commercial Bank's equity holding portfolio was reduced, too.

The exchange rate effect mainly results from the USD exchange rate, which rose from 1.1576 EUR/USD to 1.1450 EUR/USD. The position "Other" includes exposure changing from the standardized approach to the IRB approach (and vice versa) due to adjusted rating conditions.

Simple risk-weight approach

The IRB approach always calculates the risk weights using parameters assessed internally. Equity exposure and specialized lending exposure are exceptions. In these cases it is possible to determine risk weight using the simple risk-weight approach. Risk weighting is set by the supervisory authorities depending on fixed criteria. However, Hamburg Commercial Bank currently only partially uses the simple risk-weight approach for equity exposures. Depending on whether the equity exposure is not quoted on the stock exchange but is diversified sufficiently, or represents a quoted or another equity exposure, a

risk weight of 190 %, 290 % and/or 370 % in accordance with Article 155(2) CRR is allocated.

Table CR10 shows quantitative information concerning equity exposure for which the simple risk-weight approach is used according to Article 438(2) CRR in conjunction with paragraph 70 of EBA/GL/2016/11. Significant equity holdings in a financial sector entity receive a risk weight of 250 % subject to Article 155(1) CRR in conjunction with Article 48(4) CRR. These exposures are not disclosed in Table CR10.

No information is disclosed concerning specialized lending exposure as Hamburg Commercial Bank does not calculate these exposures under the requirements of Article 153(5) CRR.

[Tab. 43] CR10: IRB equities under the simple risk-weight approach in € m

Categories	On-balance-sheet amount	Off-balance-sheet amount	Risk weight	Exposure amount	RWAs	Capital requirements
Private equity exposures	62	-	190%	62	118	9
Exchange-traded equity exposures	-	-	290%	-	-	-
Other equity exposures	4	28	370%	32	117	9
Total	66	28		94	235	19

7.7. IRB backtesting

Information with regard to backtesting of IRB model parameters are disclosed according to Article 452 point (i) CCR in conjunction with paragraphs 110 and 111 of EBA/GL/2016/11. The probability of default (PD) is given in Table CR9 with regard to EBA/GL/2016/11. Other parameters are given within the bank specific Tables LGD, CCF and EL.

For methodological reasons, the data basis for the tables in this section differs from the other tables in the default risk Section. In addition to credit risk, counterparty credit risks and fully or partially securitized transaction are also taken into account. The background to this is that the backtesting of the IRB model parameters on a customer basis is independent of the type of transactions carried out and therefore a limitation to credit risk is not appropriate.

The values considering the actual LGD are cumulative and cover all defaults from 1990 to the time that they are concluded. Non-defaults are not considered. The relation of the losses resulting from defaulted customers to the outstanding amount at the report date is shown. Thereby, the actual loss of the bank is assessed (final depreciation amount on completion of the processing). All revenues which have flowed to the bank by this point are considered.

Actual losses are calculated similar to the actual LGD. Hereby, defaults that are not concluded and might already have accumulated losses are not considered. In contrary to the calculation of LGD the actual loss is based on defaults that occurred over a three-year period. Therefore, the actual losses from 2014 to 2016, 2015 to 2017 and 2016 to 2018 are shown. As the backtesting is based on this three-year window, a comparison to accounting losses based on the reporting period is not possible.

The significance for the comparative values that are disclosed is limited due to different reporting periods for the estimated losses (actual year) compared to the actual losses (year of default = year of completing the processing). The actual losses that are shown are however periodically included within the recalibration of the IRBA parameters. The same applies to the estimated and actual LGD.

Since 1990 the actual CCF are also cumulatively assessed. In contrast to LGD and losses, the CCF is assessed on the basis of the year of default and open credit lines one year before default and open credit lines at default as there is no methodological reason to wait for the end of the processing.

PD and default rates

In average, there were larger deviations between PD and default rates in certain rating modules in the last three periods (year 2016 to 2018). Causes of the deviations will be explained as follows.

Increased default rates compared to the forecast within the rating module "ship financing" were observed. This is due to the persistently difficult market environment.

Default rates of the rating module "Corporates" have increased in 2016 as well as in 2017 due to the portfolio transaction and the asset class shipping.

The increased default rates of the rating module "Aviation Finance" compared with the forecast is caused from the default of single exposures at a very low stock. Accordingly, this development does not have significance on the bank's overall perspective.

With regard to the rating module sovereigns and institutions (countries, regional authorities, banks, insurance companies) in recent years only a few defaults compared to the forecast were observed

[Tab. 44] CR9: IRB approach – backtesting of PD per exposure class

a	b	d	e	f	f	g	h	i
Exposure class	PD range	Weighted average PD	Arithmetic average PD by obligors	Number of obligors End of previous year	Number of obligors end of the year	Defaulted obligors in the year	Of which new obligors	Average historical annual default rate
Central governments and central banks	0.00 to < 0.15	0.0	0.0	28	25	-	-	-
	0.15 to < 0.25	-	-	-	1	-	-	-
	0.25 to < 0.50	0.3	0.3	2	3	-	-	-
	0.50 to < 0.75	0.6	0.6	2	-	-	-	-
	0.75 to < 2.50	1.0	1.2	3	-	-	-	-
	2.50 to < 10.00	-	-	-	1	-	-	-
	10.00 to < 100.00	15.0	15.0	1	1	-	-	16.7
Subtotal		0.0	0.6	36	31	-	-	0.5
Institutions	0.00 to < 0.15	0.1	0.1	113	110	-	-	-
	0.15 to < 0.25	0.2	0.2	7	11	-	-	-
	0.25 to < 0.50	0.3	0.3	10	8	-	-	-
	0.50 to < 0.75	0.6	0.6	5	8	-	-	-
	0.75 to < 2.50	1.3	1.1	12	4	-	-	-
	2.50 to < 10.00	-	-	-	3	-	-	-
	10.00 to < 100.00	0.0	20.0	1	-	-	-	-
Subtotal		0.1	0.3	143	139	-	-	-
Corporates – Specialised lending	0.00 to < 0.15	0.1	0.1	292	262	-	-	-
	0.15 to < 0.25	0.2	0.2	97	94	-	-	0.5
	0.25 to < 0.50	0.3	0.3	217	202	-	-	0.4
	0.50 to < 0.75	0.6	0.6	123	114	-	-	0.4
	0.75 to < 2.50	1.4	1.3	248	218	-	-	1.6
	2.50 to < 10.00	4.4	4.4	58	54	-	-	10.0
	10.00 to < 100.00	14.9	17.1	65	59	9	-	26.4
Subtotal		1.5	1.7	1,099	1,003	9	-	3.6
Corporates – SME	0.00 to < 0.15	0.1	0.1	8	19	-	-	-
	0.15 to < 0.25	0.2	0.2	17	21	-	-	-
	0.25 to < 0.50	0.3	0.3	38	55	-	-	-
	0.50 to < 0.75	0.6	0.6	21	22	-	-	0.7
	0.75 to < 2.50	1.2	1.3	61	60	-	-	0.5
	2.50 to < 10.00	4.6	5.1	13	9	1	-	4.6
	10.00 to < 100.00	10.6	14.0	10	7	1	-	15.0
Subtotal		2.0	1.9	168	193	2	-	1.6
Corporates – Other	0.00 to < 0.15	0.1	0.1	151	128	-	-	-
	0.15 to < 0.25	0.2	0.2	85	66	-	-	0.4
	0.25 to < 0.50	0.3	0.3	165	144	2	-	0.6
	0.50 to < 0.75	0.6	0.6	59	47	1	-	0.8
	0.75 to < 2.50	1.3	1.3	125	110	4	-	1.9
	2.50 to < 10.00	5.0	5.0	46	30	2	-	2.2
	10.00 to < 100.00	11.8	15.6	17	15	2	-	9.1
Subtotal		0.8	1.2	645	538	11	-	1.3
Equities acc. to Art. 155(3) CRR	0.00 to < 0.15	-	-	-	-	-	-	-
	0.15 to < 0.25	-	-	-	-	-	-	-
	0.25 to < 0.50	-	-	-	1	-	-	-
	0.50 to < 0.75	-	-	-	-	-	-	-
	0.75 to < 2.50	1.0	1.1	3	5	-	-	-
	2.50 to < 10.00	4.4	4.7	3	1	-	-	6.3
	10.00 to < 100.00	-	-	-	1	-	-	27.3
Subtotal		2.8	2.9	6	8	-	-	6.5

External rating equivalents are not disclosed in Table CR9 (column c EBA-template) as Hamburg Commercial Bank does

not estimate the PD on the basis of Article 180(1)(f) CRR. Table 38 compares the rating master scale of Hamburg Commercial Bank to the external credit assessments.

[Tab. 45] LGD: IRB approach – backtesting of LGD per exposure class

Exposure class	2018				
	Actual LGD in % by 12/31/2018	Estimated LGD in % as at 12/31/2017		Number of obligors as at 12/31/2017	
	Defaulted	Defaulted obligors	Non-defaulted obligors	Defaulted obligors	Non-defaulted obligors
Central governments and central banks	32.8	73.9	22.8	2	36
Institutions	44.5	-	13.8	0	143
Corporates - Specialised lending	25.1	45.1	28.2	268	1,099
Corporates - SME	25.5	41.2	34.3	37	168
Corporates - Other	28.9	49.1	38.2	66	645
Total	27.7	45.6	26.6	373	2,091

Exposure class	2017				
	Actual LGD in % by 12/31/2017	Estimated LGD in % as at 12/31/2016		Number of obligors as at 12/31/2016	
	Defaulted	Defaulted obligors	Non-defaulted obligors	Defaulted obligors	Non-defaulted obligors
Central governments and central banks	32.8	73.9	23.2	2	41
Institutions	44.5	-	17.9	0	152
Corporates - Specialised lending	25.3	42.6	27.7	457	1,265
Corporates - SME	26.3	53.3	36.9	42	214
Corporates - Other	29.3	45.7	35.2	85	696
Total	28.0	43.4	27.2	586	2,368

Exposure class	2016				
	Actual LGD in % by 12/31/2016	Estimated LGD in % as at 12/31/2015		Number of obligors as at 12/31/2015	
	Defaulted	Defaulted obligors	Non-defaulted obligors	Defaulted obligors	Non-defaulted obligors
Central governments and central banks	32.8	73.8	23.7	2	45
Institutions	45.5	100.0	19.5	2	183
Corporates - Specialised lending	18.7	42.2	26.6	535	1,447
Corporates - SME	13.7	51.0	29.8	44	202
Corporates - Other	27.0	42.6	31.3	106	783
Total	24.2	42.5	26.2	689	2,660

[Tab. 46] CCF: IRB approach – backtesting of CCF per exposure class

Exposure class	2018				
	Actual CCF in % by 12/31/2018	Estimated CCF in % as at 12/31/2017		Number of obligors as at 12/31/2017	
	Defaulted	Defaulted obligors	Non-defaulted obligors	Defaulted obligors	Non-defaulted obligors
Central governments and central banks	-	100.0	95.9	2	36
Institutions	-	-	36.9	0	143
Corporates - Specialised lending	15.9	46.6	42.3	268	1,099
Corporates - SME	31.9	57.7	49.3	37	168
Corporates - Other	11.4	45.8	48.2	66	645
Total	13.9	52.0	44.9	373	2,091

Exposure class	2017				
	Actual CCF in % by 12/31/2017	Estimated CCF in % as at 12/31/2016		Number of obligors as at 12/31/2016	
	Defaulted	Defaulted obligors	Non-defaulted obligors	Defaulted obligors	Non-defaulted obligors
Central governments and central banks	-	100.0	98.9	2	41
Institutions	-	-	38.7	0	152
Corporates - Specialised lending	15.9	41.7	42.2	457	1,265
Corporates - SME	31.9	73.9	48.6	42	214
Corporates - Other	11.4	66.4	48.4	85	696
Total	13.9	51.9	45.5	586	2,368

Exposure class	2016				
	Actual CCF in % by 12/31/2016	Estimated CCF in % as at 12/31/2015		Number of obligors as at 12/31/2015	
	Defaulted	Defaulted obligors	Non-defaulted obligors	Defaulted obligors	Non-defaulted obligors
Central governments and central banks	-	100.0	99.7	2	45
Institutions	-	-	44.5	2	183
Corporates - Specialised lending	23.4	44.0	42.8	535	1,447
Corporates - SME	40.2	73.6	43.2	44	202
Corporates - Other	11.3	52.2	49.1	106	783
Total	20.3	60.0	47.5	689	2,660

[Tab. 47] EL: IRB approach - backtesting of expected loss (EL) per exposure class

Exposure class	2018				
	Actual Loss in € m by 12/31/2018	Estimated Loss (EL) in € m as at 12/31/2017		Number of obligors as at 12/31/2017	
	Defaulted	Defaulted obligors	Non-defaulted obligors	Defaulted obligors	Non-defaulted obligors
Central governments and central banks	-	0	5	2	36
Institutions	26	-	1	0	143
Corporates - Specialised lending	5,733	2,160	99	268	1,099
Corporates - SME	390	191	5	37	168
Corporates - Other	1,210	569	34	66	645
Total	7,411	2,921	144	373	2,091

Exposure class	2017				
	Actual Loss in € m by 12/31/2017	Estimated Loss (EL) in € m as at 12/31/2016		Number of obligors as at 12/31/2016	
	Defaulted	Defaulted obligors	Non-defaulted obligors	Defaulted obligors	Non-defaulted obligors
Central governments and central banks	-	1	3	2	41
Institutions	54	-	1	0	152
Corporates - Specialised lending	6,234	4,400	186	457	1,265
Corporates - SME	338	172	18	42	214
Corporates - Other	1,423	824	63	85	696
Total	8,097	5,397	272	586	2,368

Exposure class	2016				
	Actual Loss in € m by 12/31/2016	Estimated Loss (EL) in € m as at 12/31/2015		Number of obligors as at 12/31/2015	
	Defaulted	Defaulted obligors	Non-defaulted obligors	Defaulted obligors	Non-defaulted obligors
Central governments and central banks	-	2	4	2	45
Institutions	124	13	3	2	183
Corporates - Specialised lending	2,585	5,660	191	535	1,447
Corporates - SME	100	175	5	44	202
Corporates - Other	558	816	72	106	783
Total	3,381	6,665	275	689	2,660

8. Counterparty credit risk

Hamburg Commercial Bank subsumes risks from derivative and securities financing transactions under counterparty credit risk. A counterparty credit risk is the risk that the counterparty of the transaction defaults, the transaction no longer can be settled as planned and in consequence a replacement risk arises.

Hamburg Commercial Bank voluntarily complies with EBA/GL/2016/11 for the disclosure of counterparty credit risk.

8.1. Qualitative disclosure of counterparty credit risk

Qualitative information related to counterparty credit risk (CCR) should be disclosed in accordance with Article 435(1)(a) CRR and Article 439 points (a) to (d) CRR in conjunction with paragraph 53 of EBA/GL/2016/11. Additionally, all necessary information of points (a) to (e) in Table CCRA in EBA/GL/2016/11 will be described within the following. Point (d) is not relevant as no methods based on internal models are used (see Section 1.1 Non-relevance and negative declarations).

8.1.1. Methodology how internal capital and ceilings for counterparty credit risk exposures are assigned

The usual credit approval procedures must be complied with when creating counterparty credit risk exposures within the meaning of Part 3 Title II Chapter 6 CRR. The risk classification, limitation and monitoring processes of the classic lending business apply accordingly. Information, which complies with the requirements as defined in Article 435(1) CRR, is set out in the Group Management Report (Risk Report) in Hamburg Commercial Bank's Annual Report, furthermore there is a daily monitoring of derivative/issuer exposures in accordance with MaRisk requirements. As part of the monitoring of trading lines the potential future exposure on currency and interest rate derivatives is recalculated daily for each customer on the basis of a 95%-quantile and compared to the respective trading limit. The eligible sums for counterparty credit risk exposures are included in the bank-wide economic management, capital allocation and limitation together with the other exposures subject to credit risk.

8.1.2. Rules for collateralization and establishing credit reserves

In connection with counterparty credit risk exposures Hamburg Commercial Bank uses the rules described below for securing collateral and establishing credit reserves in accordance with Article 439 point (b) CRR.

Policies for collateralization

Derivative transactions for hedging interest rate, foreign exchange and other similar risks are generally concluded with single counterparties and governed by OTC master agreements, namely either the German Master Agreement for Financial Derivate Transactions or the International Master Agreement of the International Swaps and Derivatives Association (ISDA) in the 1992 or 2002 versions respectively.

In addition, collateral agreements supplementing a number of master agreements were concluded, mostly with banks in Germany and abroad, but also with non-banks in individual instances. This involves the Credit Support Annex to the German Master Agreement and to the ISDA Master Agreement.

Since 03/01/2017, financial counterparties and non-financial counterparties above the clearing threshold are obligated to collateralize new businesses in accordance with the framework under the EMIR Regulation. Hamburg Commercial Bank has adopted all relevant trade contracts with the financial counterparties and non-financial counterparties above the clearing threshold and therefore remains tradable.

The following information applies equally to both Master Agreement types and the associated collateral agreements.

The collateral agreements include agreements on thresholds which are unsecured, eligible collateral, other collateral arrangements and the scope of the collateral agreement. Agreed collateral is generally cash, plus in several cases as an exception interest-bearing securities from G10 nations or other EU Member States with good ratings, which may be received or delivered through margining usually on a daily basis.

The cash collateral agreed consists of amounts in a convertible and freely transferable currency (normally Euro or US Dollar).

All Master Agreements and collateral agreements are entered in a system. A daily review is conducted for each individual derivative transaction as to eligibility for netting under supervisory law, the inclusion in a collateral agreement as well as the legal basis for use as collateral as to each individual derivative transaction.

For central clearing of OTC derivatives Hamburg Commercial Bank has joined the London Clearing House (LCH) and EUREX. A Client-clearing-procedure is used via three renowned client-broker. For Hamburg Commercial Bank, the initial margin requirement (IM) under EMIR will come into force in September 2020. Within the scope of a project already started, the necessary extensions are implemented.

Policies for value adjustments for counterparty credit risks

Hamburg Commercial Bank uses the mark-to-market method for determining counterparty credit risk in accordance with Article 274 CRR. With regard to securities financing transactions (SFT) a comprehensive method is used which considers financial securities in accordance with Article 223 CRR.

Derivative financial instruments are accounted for and measured in accordance with the IFRS rules. More detailed information on the recognition and measurement inclusive value adjustments for counterparty credit risk is set out in the Group Financial Statements (Group notes, Note 7 "Accounting Policies") in Hamburg Commercial Bank's Annual Report.

8.1.3. Changes in the amount of collateral posted due to a downgrade of the credit rating

The collateral agreements to these Master Agreements occasionally include individual clauses which could require the Hamburg Commercial Bank to first-time supply collateral or

increase collateral in the event that one of the external ratings of the Hamburg Commercial Bank is downgraded. As at the reporting date, a ratings downgrade of two notches by the rating agencies Moody's and/or S & P would result in additional collateral of € 19 m to be disclosed in accordance with Article 439 point (d) CRR. This would not materially affect Hamburg Commercial Bank's risk bearing capacity.

8.2. Quantitative disclosure for counterparty credit risk**8.2.1. Exposure value**

Parameters for the exposure to counterparty credit risk based on the approach used are given in Table CCR1 according to Article 439 points (e) and (f) CRR in conjunction with paragraph 114 of EBA/GL/2016/11.

According to Article 274 CRR, Hamburg Commercial Bank only uses the mark-to-market method associated with all derivative transactions. For all securities financing transactions (SFT) a comprehensive method is used which considers financial securities in accordance with Article 223 CRR. Therefore, rows 2 to 8 and 10 of Table CCR1 remain empty. Additionally, columns a, d and e also remain empty and should not be filled in accordance to EBA guidelines regarding this method. Pursuant to EBA guidelines, exposures to a central counterparty are not considered in Table CCR1.

[Tab. 48] CCR1: Analysis of CCR exposure by approach in € m

	a	b	c	d	e	f	g
	Notional	Replacement cost/current market value	Potential future credit exposure	EEPE	Multiplier	EAD post CRM	RWAs
1 Mark to market		1,775	678			2,218	810
2 Original exposure	-					-	-
3 Standardised approach		-			-	-	-
4 IMM (for derivatives and SFTs)				-	-	-	-
5 Of which securities financing transactions				-	-	-	-
6 Of which derivatives and long settlement transactions				-	-	-	-
7 Of which from contractual cross-product netting				-	-	-	-
8 Financial collateral simple method (for SFTs)						-	-
9 Financial collateral comprehensive method (for SFTs)						155	3
10 VaR for SFTs						-	-
11 Total							813

Information concerning capital requirements due to the CVA capital charge is given in Table CCR2 according to Article 439 points (e) and (f) CRR in conjunction with paragraph 115 of EBA/GL/2016.

Hamburg Commercial Bank solely uses the standardized method for determining these capital requirements. Thus, rows 1 to 3 and EU4 in Table CCR2 are not filled.

[Tab. 49] CCR2: CVA capital charge in € m

	a	b
	Exposure value	RWAs
1 Total portfolios subject to the advanced method	-	-
2 (i) VaR component (including the 3× multiplier)		-
3 (ii) SVaR component (including the 3× multiplier)		-
4 All portfolios subject to the standardised method	249	237
EU4 Based on the original exposure method	-	-
5 Total subject to the CVA capital charge	249	237

Information concerning counterparty credit risk calculated under the standardized approach is given in Table CCR3 pursuant to Article 444 point (e) CRR in conjunction with paragraph 117 of EBA/GL/2016/11.

For credit risk, there is a comparable presentation shown in Table CR5.

[Tab. 50] CCR3: Standardized approach – CCR exposures by regulatory portfolio and risk in € m

Exposure class	Risk weight											Total	of which unrated	
	0%	2%	4%	10%	20%	50%	70%	75%	100%	150%	Others			
1 Central governments or central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2 Regional government or local authorities	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3 Public sector entities	-	-	-	-	0	-	-	-	-	-	-	-	0	0
4 Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5 International organisations	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6 Institutions	-	359	-	-	38	-	-	-	-	-	-	-	397	397
7 Corporates	-	-	-	-	-	-	-	-	24	-	-	-	24	24
8 Retail	-	-	-	-	-	-	-	1	-	-	-	-	1	1
9 Secured by mortgages on immovable property	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10 Exposures in default	-	-	-	-	-	-	-	-	-	3	-	-	3	3
11 Institutions and corporates with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12 Other items	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13 Total	-	359	-	-	38	-	-	1	24	3	-	-	425	425

Information concerning counterparty credit risk, which is calculated using the IRB approach, is given in Table CCR4 in accordance with Article 452 point (e) CRR in conjunction with paragraph 118 of EBA/GL/2016/11. Thereby, the exposure to central counterparties is not listed.

There will be no further description for geographical locations for counterparty credit risk according to Article 452 points (j) and (i) CRR as more than 99 % of the counterparty credit risk is held nationally.

[Tab. 51] CCR4: IRB approach – CCR exposures by portfolio and PD scale in € m

Exposure class	PD scale	a	b	c	d	e	f	g
		EAD post CRM	Average PD	Number of obligors	Average LGD	Average Maturity	RWAs	RWA density
Central governments and central banks								
	0.00 to < 0.15	97	-	4	22.1	3.9	-	-
	0.15 to < 0.25	-	-	-	-	-	-	-
	0.25 to < 0.50	-	-	-	-	-	-	-
	0.50 to < 0.75	-	-	-	-	-	-	-
	0.75 to < 2.50	-	-	-	-	-	-	-
	2.50 to < 10.00	-	-	-	-	-	-	-
	10.00 to < 100.00	-	-	-	-	-	-	-
	100.00 (Default)	-	-	-	-	-	-	-
	Subtotal	97	-	4	22.1	3.9	-	-
Institutions								
	0.00 to < 0.15	624	0.1	51	18.4	3.4	115	18.4
	0.15 to < 0.25	36	0.2	2	13.2	4.5	8	22.6
	0.25 to < 0.50	0	0.4	1	46.3	1.1	0	50.3
	0.50 to < 0.75	-	-	-	-	-	-	-
	0.75 to < 2.50	1	1.3	1	46.3	4.3	2	136.1
	2.50 to < 10.00	-	-	-	-	-	-	-
	10.00 to < 100.00	-	-	-	-	-	-	-
	100.00 (Default)	-	-	-	-	-	-	-
	Subtotal	661	0.1	55	18.2	3.4	125	18.9

Exposure class	PD scale	a EAD post CRM	b Average PD	c Number of obligors	d Average LGD	e Average Maturity	f RWAs	g RWA density
Corporates - Specialised lending								
	0.00 to < 0.15	272	0.1	98	54.0	2.6	96	35.5
	0.15 to < 0.25	28	0.2	17	29.8	2.6	7	26.9
	0.25 to < 0.50	108	0.3	66	49.8	2.6	59	54.8
	0.50 to < 0.75	55	0.6	28	55.2	2.7	49	87.8
	0.75 to < 2.50	183	1.4	33	25.1	4.4	119	64.8
	2.50 to < 10.00	150	3.0	9	12.3	2.8	51	33.7
	10.00 to < 100.00	19	13.2	10	63.5	2.5	48	252.9
	100.00 (Default)	47	100.0	13	18.3	4.7	28	58.7
	Subtotal	862	6.7	274	37.6	3.1	456	52.9
Corporates - SME								
	0.00 to < 0.15	1	0.1	4	35.6	2.5	0	14.7
	0.15 to < 0.25	4	0.2	5	58.0	2.5	2	45.6
	0.25 to < 0.50	8	0.3	12	20.1	2.5	2	20.8
	0.50 to < 0.75	1	0.6	5	47.0	2.5	1	67.9
	0.75 to < 2.50	6	1.5	22	26.6	2.5	3	46.9
	2.50 to < 10.00	0	3.0	1	60.6	2.5	0	167.8
	10.00 to < 100.00	0	15.0	1	63.8	2.5	0	304.1
	100.00 (Default)	-	-	-	-	-	-	-
	Subtotal	20	0.7	50	30.8	2.5	7	35.4
Corporates - Other								
	0.00 to < 0.15	179	0.1	26	23.5	4.4	46	25.7
	0.15 to < 0.25	20	0.2	14	30.5	2.0	6	31.8
	0.25 to < 0.50	65	0.3	47	51.7	3.9	56	86.1
	0.50 to < 0.75	5	0.6	11	56.2	2.3	5	96.5
	0.75 to < 2.50	35	1.8	21	54.3	4.4	60	169.9
	2.50 to < 10.00	1	4.9	7	58.2	1.8	3	200.5
	10.00 to < 100.00	-	-	-	-	-	-	-
	100.00 (Default)	8	100.0	4	52.9	1.4	5	60.0
	Subtotal	314	2.8	130	34.7	4.0	181	57.7
Retail								
Equities acc. to Art. 155(3) CRR								
	0.00 to < 0.15	-	-	-	-	-	-	-
	0.15 to < 0.25	-	-	-	-	-	-	-
	0.25 to < 0.50	-	-	-	-	-	-	-
	0.50 to < 0.75	-	-	-	-	-	-	-
	0.75 to < 2.50	-	-	-	-	-	-	-
	2.50 to < 10.00	-	-	-	-	-	-	-
	10.00 to < 100.00	-	-	-	-	-	-	-
	100.00 (Default)	-	-	-	-	-	-	-
	Subtotal	-	-	-	-	-	-	-
Equities acc. to Art. 155(2) CRR								
Equities acc. to Art. 155(4) CRR								
Other non credit-obligation assets								
		-	-	-	-	-	-	-
Total		1,954	3.4	513	29.8	3.4	770	39.4

8.2.2. Gross positive fair value and net credit exposures

The extent to which Hamburg Commercial Bank is involved in different contract types and to what extent netting is used is set out in Tables CCR5-A and CCR5-B in accord-

ance with Article 439 point (e) CRR in conjunction with paragraphs 120 to 122 of EBA/GL/2016/11. Eligible collateral and net default exposures are also disclosed. Only collaterals eligible in the standardized approach for credit risk directly reduces the exposure values, whereas under the advanced IRB approach collaterals are incorporated in the determination of LGD (see also Section 7.3).

[Tab. 52] CCR5-A: Impact of netting and collateral held on exposure values in € m

	a	b	c	d	e
	Gross positive fair value or net carrying amount	Netting benefits	Netted current credit exposure	Collateral held	Net credit exposure
1 Derivatives	4,101	-2,323	1,777	994	783
2 SFTs	655	-	655	639	16
3 Cross-product selling	-	-	-	-	-
4 Total	4,755	-2,323	2,432	1,633	800

[Tab. 53] CCR5-B: Composition of collateral for exposures to CCR in € m

	a		b		c		d		e		f	
	Collateral used in derivative transactions						Collateral used in SFTs					
	Fair value of collateral received				Fair value of posted collateral				Fair value of collateral received		Fair value of posted collateral	
	Segregated		Unsegregated		Segregated		Unsegregated					
Cash - Euro	-		535		-		1,814		351		250	
Cash - other than Euro	-		26		-		2		41		-	
Securities	-		-		-		-		247		405	
Real estate	-		351		-		-		-		-	
Receivables	-		0		-		-		-		-	
Guarantees	-		48		-		-		-		-	
Other collaterals	-		34		-		-		-		-	
Total	-		994		-		1,816		639		655	

8.2.3. Credit derivatives

Hamburg Commercial Bank discloses the use of credit derivatives in accordance with Article 439 points (g) and (h) CRR in conjunction with paragraph 123 of EBA/GL/2016/11 in Table CCR6.

Collateralization for the purpose of credit risk reduction only occurs with cash collaterals resulting from credit linked notes. According to Article 218 CRR collaterals resulting from credit linked notes are not treated as credit derivatives but as cash collaterals. Therefore, the nominal amount of

the hedging with credit derivatives remains unchanged at zero and all credit derivatives are disclosed in column c1 and c2 (other credit derivatives). Accordingly, beyond the product differentiation of EBA/GL/2016/11 there is no further breakdown by types of default risk exposures with regard to Article 439 point (g) CRR.

With regard to credit derivatives, Hamburg Commercial Bank acts both as a collateral taker (buyer) and as a collateral giver (seller). Furthermore, there are still no brokerage transactions as at the reporting date.

[Tab. 54] CCR6: Credit derivatives exposures in € m

	a	b	c1	c2
	Credit derivative hedges		Other credit derivatives	
	Protection bought	Protection sold	Protection bought	Protection sold
Notionals				
Single-name credit default swaps	-	-	46	48
Index credit default swaps	-	-	-	-
Total return swaps	-	-	-	-
Credit options	-	-	-	-
Other credit derivatives	-	-	-	-
Total notionals	-	-	46	48
Fair values				
Positive fair value (asset)	-	-	13	1
Negative fair value (liability)	-	-	- 0	- 0

Column c acc. to EBA/GL/2016/11 results from the sum of columns c1 and c2.

8.2.4. Central counterparties

Beside the disclosure for counterparty credit risk which is shown in Tables CCR1 and CCR2, supplementary information for central counterparty according to Article 439

points (e) and (f) CRR in conjunction with paragraph 116 of EBG/GL/2016/11 is disclosed in Table CCR8. Hereby, only the direct engagement towards central counterparties is disclosed which means that transactions concluded by clearing members are not included.

[Tab. 55] CCR8: Exposures to CCPs in € m

	a	b
	EaD post CRM	RWA
1 Exposures to QCCPs (total)		1
2 Exposures for trades at QCCPs (excluding initial margin and default fund contributions); of which	6	0
3 (i) OTC derivatives	-	-
4 (ii) Exchange-traded derivatives	2	0
5 (iii) SFTs	3	0
6 (iv) Netting sets where cross-product netting has been approved	-	-
7 Segregated initial margin	-	
8 Non-segregated initial margin	-	-
9 Prefunded default fund contributions	13	1
10 Alternative calculation of own funds requirements for exposures		-
11 Exposures to non-QCCPs (total)		-
12 Exposures for trades at non-QCCPs (excluding initial margin and default fund contributions); of which	-	-
13 (i) OTC derivatives	-	-
14 (ii) Exchange-traded derivatives	-	-
15 (iii) SFTs	-	-
16 (iv) Netting sets where cross-product netting has been approved	-	-
17 Segregated initial margin	-	
18 Non-segregated initial margin	-	-
19 Prefunded default fund contributions	-	-
20 Unfunded default fund contributions	-	-

9. Securitizations

9.1. Type and extent of securitization activities and risks involved

9.1.1. Objectives, roles and extent of securitization activities

Securitizations are an important instrument for banks in refinancing, capital relief and risk management. Companies in the financial sector can act in different positions in a securitization transaction, transferring credit risk themselves as originators, managing the portfolio to be securitized as sponsors in the function of servicers respectively managers, or acquiring securities from the securitization as investors.

Hamburg Commercial Bank is involved in various activities which have securitization structures. In this process, Hamburg Commercial Bank takes the role of investor or sponsor. As part of a strategic reorientation Hamburg Commercial Bank only in exceptional cases enter into any new transactions in this business field. Furthermore, Hamburg Commercial Bank's role of investor has sharply declined.

Hamburg Commercial Bank takes the role of the sponsor in order to satisfy the demand for financing alternatives in the small- and medium-sized customer segment.

As part of its securitization program Hamburg Commercial Bank takes the sponsor position for the special purpose vehicle, Smartfact S.A. (Luxembourg). Hamburg Commercial Bank undertakes activities of an advisory and administrative nature in this connection and acts as an intermediary for the receivables purchased by Smartfact. Furthermore, Hamburg Commercial Bank supports the special purpose vehicle through the provision of funding required for the purchase by means of a credit line or bearer bond respectively.

Overall, the CRSA and IRBA exposure value of all securitization positions retained or sold by Hamburg Commercial Bank as at the reporting date having a total of € 259 m. Receivables securitized where the bank acts as investor amounts to € 19 m and as sponsor to € 240 m, respectively.

Hamburg Commercial Bank held no securitizations in its trading book as well as took it no role as originator at the reporting date.

9.1.2. Types and extent of risks

Credit risk

Hamburg Commercial Bank's securitization transactions are subject to the credit monitoring processes (in addition to market risk monitoring by Group Risk Management) with regard to

their credit risks (change in performance and composition of the underlying transactions). The credit analysis of the position is conducted by the appropriate division. Finally, decisions are made with respect to the completed monitoring forms on the basis of the dual control principle pursuant to loan competences which have been fixed and which have been published in the Credit Manual.

For purposes of calculating intrinsic values, the cash flow structure of the underlying assets is first modeled and then applied to the contractual payment system of the securitization transactions. These values are calculated quarterly. The process described for credit monitoring is likewise suitable for re-securitizations and securitizations, which is why no further differentiation is made. By means of regularly updating repayment cash flows and on-going loan monitoring, changes in value of the underlying receivables are generally reflected directly in the value of the securitization positions.

Market risk

Hamburg Commercial Bank's securitization transactions are subject to market risk monitoring with regard to their interest rate risks (changes in interest rates and credit spreads) and foreign exchange risks. Calculating the market risk of the securitization transactions, the repayment structure and the termination rights are considered. Interest rate and foreign exchange risks are then calculated using the same method applicable to all trading transactions after taking into account hedge transactions. The credit spread risks are determined on the basis of credit spread curves which are purchased from providers of market data and which are broken down by asset class, rating class and country.

The process described for market risk monitoring is likewise suitable for re-securitizations and securitizations, which is why no further differentiation is made. By means of regularly updating repayment cash flows and credit spread curves, changes in value of underlying receivables are generally reflected directly in the value of the securitization positions to the extent there are no other hedge relationships.

Liquidity risk

The following distinction is made for purposes of liquidity risk monitoring in relation to securitizations:

- Accounting-related liquidity risks may arise in the form of time lags (mismatch) between incoming and outgoing cash flows.

- Market-related liquidity risks may arise, for example in cases where issued bonds cannot be fully placed on the market or where price losses are realized on the liquidation of assets.

Accounting-related liquidity risks are avoided by coordinating the fixed/determinable payments over the course of the transactions. If this cannot be accomplished (e.g. via short-term re-financing via asset backed commercial paper (ABCP) programs), the market-related liquidity risks are hedged via liquidity facilities.

9.2. Risk weighting and accounting of securitization transactions

Determination of risk-weighted exposure amounts for securitization transactions

The methods to be used in calculating the regulatory capital for securitization positions are stated in Article 449 point (h) CRR and the names of the applied rating agencies are disclosed according to Article 449 point (k) CRR. Because there are no issued securities by Hamburg Commercial Bank, information about rating agencies are only for investments in external securitization transactions.

In accordance with Article 109 CRR the exposure values are assigned to CRSA or IRBA. The determination of the risk weighted assets in CRSA will be used according to Article 251 CRR. The bank uses the external ratings (ECAI) from Fitch, Moody's and S & P (see Table 38 Section 7.6).

Under the IRB securitization rules, Hamburg Commercial Bank uses the ratings-based approach in accordance with Article 261 CRR, if credit assessments by external providers are available in the markets. For securities positions which do not have an eligible external rating Hamburg Commercial Bank partially applies the supervisory formula approach available in Article 259(1)(b) and Article 262 CRR for IRBA securitization positions.

In accordance with Article 266(3) CRR, there is the option for CRSA or IRBA securitization positions for which a risk weight of 1,250% has been calculated of making a capital deduction or applying this risk weight to determine the risk weighted capital charge.

During the reporting period there were no significant changes by methods, assumptions or parameters according to Article 449(j) subpoint (iii) CRR.

Accounting methods for securitization activities

Accounting methods

Acquired securitization positions which meet the definition of securities in the German Ordinance on the Accounting System for banks are recognized and measured in accordance with the standard methods for securities.

Primary receivables of Hamburg Commercial Bank which the bank allocates to securitizations without a significant transfer of risk or with regard to which a transfer is made to Special Purpose Vehicles (SPV) still included in the consolidated financial statements, continue to be reported under the original exposure class. Assumption of risks by third parties is taken into account as collateral when calculating impairments. If the risk has not been transferred through securitization or if the guarantee is impaired, the receivable is written down. Receivables transferred under securitizations are shown as disposals in the balance sheet.

Sales proceed from reference assets (e.g. loans, promissory notes, securities) which are a component of a securitization are accounted for corresponding to the balance sheet item of the reference asset. In this manner, sales proceeds are accounted for independent of their inclusion in a securitization.

Financial backing for securitization transactions is provided in the form of liquidity facilities or guarantees. In the event a down writing is likely, the risk is covered by creating an impending loss provision.

Valuation methods

The fair value of securitization transactions is calculated using market prices.

Various market data providers and quotes from other market participants are used as sources of data. Models are used in cases where no valid market data is available. If price information is available from several providers, a procedure for selecting a valid market price is applied. For quality assurance purposes, all valuation results are validated by experts.

9.3. Exposure values and capital requirements of securitized receivables

Exposure values of securitized receivables

For securitizations, a distinction must be made between securitizations with transfer of receivables (traditional or true sale securitizations) and securitizations without transfer of receivables (synthetic securitizations). Depending on the nature of the securitized receivables, securitizations are also allocated to different product classes, which have the characteristics of specific receivables.

In accordance with Article 449(n) subpoint (i) CRR, Table 56 shows the exposure value at the reporting date of the securitized receivables at Hamburg Commercial Bank, broken down by securitization transaction with or without transfer of receivables and the nature of the securitized receivables. In connection with Article 449 point (i) CRR the sponsor exposures of € 240 m comprise via SPV Smartfact S.A. on- and off-balance-sheet exposures of € 188 m and € 52 m, respectively.

[Tab. 56] Exposure values of securitized receivables in € m

Securitization portfolio	Exposure value	
	Originators	Sponsors
Traditional securitizations		
Real estate	-	-
Ships	-	-
Retail banking	-	240
ABS	-	-
Other	-	-
Subtotal	-	240
Synthetic securitizations		
Real estate	-	-
Ships	-	-
Retail banking	-	-
Corporates	-	-
ABS	-	-
Other	-	-
Subtotal	-	-
Total	-	240

Exposure values of retained or purchased securitization positions

In accordance with Article 449(n) subpoint (ii) CRR, Table 57 shows a list of the securitization positions held by the bank.

[Tab. 57] Exposure values of retained or purchased securitization positions in € m

Securitization items	CRSA exposure value	IRBA exposure value
Balance sheet items		
Credit Enhancements	-	-
Participations in ABS transactions	-	19
Other balance sheet items	240	-
Subtotal	240	19
Off-balance-sheet items		
Liquidity facilities	-	-
Derivatives	-	-
Other off-balance-sheet items	-	-
Subtotal	-	-
Total	240	19

Risk weight ranges and exposure values of securitizations

In accordance with Article 449(o) subpoint (i) CRR, Table 58 shows the bank's individual securitization positions (see Table 57) allocated to risk weight ranges, and the resulting capital requirements. There were no securitization positions held

by Hamburg Commercial Bank which are risk weighted with 1,250 % respectively deducted from CET1 according to Article 449(n)(v) CRR.

[Tab. 58] Exposure values and capital requirements for retained or purchased securitization items acc. to risk weight ranges in € m

Risk weight range in %	Securitized items retained/ purchased					
	Exposure value ¹			Capital requirements		
	Securitization	Re-securitization	Total	Securitization	Re-securitization	Total
CRSA						
0 ≤ 10	-	-	-	-	-	-
> 10 ≤ 20	240	-	240	4	-	4
> 20 ≤ 50	-	-	-	-	-	-
> 50 ≤ 100	-	-	-	-	-	-
> 100 ≤ 350	-	-	-	-	-	-
> 350 ≤ 650	-	-	-	-	-	-
> 650 < 1.250	-	-	-	-	-	-
1.250 or capital deduction	-	-	-	-	-	-
Total CRSA	240	-	240	4	-	4
IRBA						
0 ≤ 10	-	-	-	-	-	-
> 10 ≤ 20	-	-	-	-	-	-
> 20 ≤ 50	-	-	-	-	-	-
> 50 ≤ 100	-	-	-	-	-	-
> 100 ≤ 350	19	-	19	5	-	5
> 350 ≤ 650	-	-	-	-	-	-
> 650 < 1.250	-	-	-	-	-	-
1.250 or capital deduction	-	-	-	-	-	-
Total IRBA	19	-	19	5	-	5
Total	259	-	259	8	-	8

¹ before exercising the right to vote acc. to Article 266(1) and (2) CRR

9.4. Securitization activities in the reporting year and important changes

Securitization activities in the reporting year

In the reporting year, Hamburg Commercial Bank terminated the transactions Sunrise, Horizon, Castellum, Nausola, Nep-tora and Teal. There were no securitization activities according to Article 449(n) subpoint (vi) CRR.

Significant changes to quantitative disclosures

Under Article 449 point (m) CRR significant changes to quantitative disclosures since the last reporting period are to be explained. The significant changes since the last reporting period

are mainly attributable to the Sunrise and Horizon transactions. There were also changes affecting sponsor as well as investment positions.

The decrease in the exposure values calculated under the standardized approach for credit risk for securitized transactions where the bank acts as sponsor is attributable to the decrease in the credit lines granted for the Smartfact special purpose entity.

Planned securitization activities

In 2019 there are no securitization activities for reduction in capital requirements planned. Therefore, Article 449(n) subpoint (iii) CRR is not relevant.

10. Market risk

10.1. Market risk

Market risk refers to potential losses that may arise from adverse changes in the market value of positions in the trading and banking book. Market movements relevant to Hamburg Commercial Bank include changes in interest rates and credit spreads (interest rate risk), exchange rates (foreign exchange risks) and share prices, indices and fund prices (equity risks) including their volatilities.

Risk management objectives and policies

The description of the risk management objectives and policy for market risk in accordance with Article 435(1) CRR is made by applying Article 434(2) CRR with the information contained in the Group Management Report (Risk Report) of Hamburg Commercial Bank's Annual Report in accordance with the references set out in Table MRA.

[Tab. 59] MRA: Qualitative disclosure requirements related to market risk

Regulatory requirements of Table MRA (EBA/GL/2016/11)	Reference CRR	Refer to Hamburg Commercial Bank's Annual Report
a) Strategies and processes of market risk control	Article 435(1)(a) and (d)	Group Management Report (Risk Report) Page 95 - 96
b) Structure and organisation of market risk management function	Article 435(1)(b)	Group Management Report (Risk Report) Page 95 - 96
c) Monitoring and systems of trading book positions	Article 435(1)(a) and (c) in conjunction with Article 455 point (c) and Article 104	Group Management Report (Risk Report) Page 96 - 98

Capital requirements

Hamburg Commercial Bank applies the prescribed or selectable standard procedure pursuant to Part 3 Title IV Chapters 2 to 4 CRR for the regulatory calculation of capital requirements for market risk. The bank does not apply its own risk model under Part 3 Title IV Chapter 5 CRR and does not hold a correlation trading portfolio.

Template MR1 shows the own funds requirements for market risk in accordance with Article 445 CRR in conjunction with paragraph 127 of EBA/GL/2016/11. At the reporting date there were no significant capital requirements for large exposures under Article 92(3)(b)(ii) CRR or for settlement risk under Article 92(3)(c)(ii) CRR.

In the semi-annual reporting period, interest rate, equity, option and exchange rate risks decreased slightly. These changes are mainly attributable to the effects of the privatization of Hamburg Commercial Bank. In addition, changes in option risk, exchange rates and interest rates also have an impact.

[Tab. 60] MR1: Market risk under the standardized approach in € m

		a	b
		RWAs	Capital requirements
Outright products			
1	Interest rate risk (general and specific)	737	59
2	Equity risk (general and specific)	10	1
3	Foreign exchange risk	115	9
4	Commodity risk	-	-
Options			
5	Simplified approach	-	-
6	Delta-plus method	141	11
7	Scenario approach	20	2
8	Securitisation (specific risk)	-	-
9	Total	1,023	82

10.2. Interest rate risk in the banking book

The management of interest rate risk in the banking book is an integral part of market risk management. Interest rate risk refers to the loss potential of an open interest rate position that arises as a result of a possible change in market or present value of a payment series due to a potential change in yields or discount factors. Discount factors result from the corresponding yield curve. Credit spreads are also taken into account for single name bonds and credit default swaps.

The interest rate risks in the banking book is represented by the strategically held positions in the banking book of Hamburg Commercial Bank. The investor behavior of customer deposits is only modelled with regard to the earnings risk. Subsidiary agreements in the lending business, including special repayment or termination rights and rollover loans, are taken into account in both present value and income-oriented risk measurement. Risk measurement and stress testing are carried out by the Group Risk Management division on the basis of the transactions recorded in the trading and portfolio management systems.

The Treasury & Markets division also manages the interest rate risk in the banking book arising from the bank's client business. The aim here is to bundle interest rate risks and usually transfer them directly to the trading book in order to manage them within the framework of the specified market price risk limits. Interest rate risks in the banking book are measured daily. The VaR is calculated using a confidence level of 99 %, a holding period of one day and a data history of 250 trading days. As part of the implementation of IRRBB EBA/GL/2015/08, VaR figures have been calculated in the risk-bearing capacity calculation since December 2017 on the basis of the strict alignment of VaR to the Gone Concern perspective. Unlike in the previous year, previously unlimited silent participations are included in the calculation, as they were terminated by the bank at the end of 2018 and are therefore no longer available for an indefinite period.

In addition to determining the interest rate risk on a daily basis as part of the VaR calculation, Hamburg Commercial

Bank also measures the interest rate risk in the event of an interest rate shock. For this special analysis of the interest rate risks of the banking book items, the bank uses the net present value analysis, i.e. it evaluates which net present value change would result from defined changes in interest rates. The figures for the year under review have shown that Hamburg Commercial Bank would lose significantly less than 20 % of its liability own funds in an interest rate shock of + 200 and - 200 basis points. Here, too, the silent participations limited by the termination are included in the calculation. Furthermore, all financial instruments are valued with risk-free yield curves (i.e. without any spreads)

The effects of an interest rate shock of + 200 and - 200 basis points at the reporting date in accordance with Article 448 point (b) CRR are shown in the following table.

[Tab. 61] 448b: Interest rate risk in the banking book in € m

Currency	Change in net present value	
	+200 bp	-200 bp
EUR	59	-242
USD	22	-24
CHF	1	0
JPY	0	1
GBP	-1	-8
DKK	0	-
Other	0	0
Total	82	-274

The total amount of € 82 m and € - 274 m, respectively, represents the balance of the present value changes from the interest rate shocks in the event of a parallel shift in the yield curve of all currencies. For greater transparency, interest rate risks in the banking book are broken down by currency as at the reporting date. Last year's surcharge for adequate consideration of the interest rate risk from loans already impaired no longer applies.

11. Operational risk

Hamburg Commercial Bank defines operational risk as the risk as of direct and indirect losses resulting from inadequate or failed internal infrastructure, internal processes, employees or external factors (risk categories). The definition includes the risks of damage from legal risks and compliance risk.

Risk management objectives and policies

The description of the risk management objectives and policy for operational risk in accordance with Article 435(1) CRR is given on pages 64 to 67 of the Group Management Report (Risk Report) of Hamburg Commercial Bank's Annual Report. This also applies to the disclosure on legal risk and compliance risk.

Capital requirements

Hamburg Commercial Bank applies exclusively the standardized approach in order to determine the capital requirements for operational risk. Therefore, the method is not described in accordance with Article 312(2) CRR.

The total capital requirement at the reporting date was € 139 m.

12. Notes

12.1. Consolidation matrix

[Tab. 62] LI3: Outline of the differences in the scopes of consolidation (entity by entity)

Type of company / company	Treatment under supervisory law				Consolidation under IFRS	
	Consolidation		Deduction method	Risk-weighted (equity holding/SPV)	full	at-equity
	full	proportional				
CI HSH Nordbank Securities S.A.	X				X	
FI 4Wheels Management GmbH				X		
FI Asian Capital Investment Opportunities Limited	X					
FI Avia Management S.à.r.l.				X	X	
FI BINNENALSTER-Beteiligungsgesellschaft mbH	X				X	
FI Bu Wi Beteiligungsholding GmbH	X				X	
FI CAPCELLENCE Dritte Fondsbeteiligung GmbH	X				X	
FI CAPCELLENCE Erste Fondsbeteiligung GmbH	X				X	
FI Capcellence Holding GmbH & Co. KG	X				X	
FI Capcellence Vintage Year 06/07 Beteiligungen GmbH & Co. KG	X				X	
FI Capcellence Vintage Year 07/08 Beteiligungen GmbH & Co. KG	X				X	
FI Capcellence Vintage Year 11 Beteiligungen GmbH & Co. KG	X				X	
FI CAPCELLENCE Vintage Year 13 Beteiligungen GmbH & Co. KG	X				X	
FI CAPCELLENCE Vintage Year 16 Beteiligungen GmbH & Co. KG	X				X	
FI CAPCELLENCE Zweite Fondsbeteiligung GmbH	X				X	
FI European Capital Investment Opportunities Limited	X					
FI FSP CAPCELLENCE Beteiligungs GmbH				X		
FI FSP Fluid System Partners Holding AG				X		
FI GmbH Altstadt Grundstücksgesellschaft	X				X	
FI HSH Auffang- und Holdinggesellschaft mbH & Co. KG	X				X	
FI HSH N Finance (Guernsey) Limited	X				X	
FI HSH N Funding II	X				X	
FI HSH Private Equity GmbH	X				X	
FI Lyceum Capital Fund 2000 (Number Five) GmbH & Co. KG				X		
FI Neptune Finance Partner S.à.r.l.	X				X	
FI Neptune Finance Partner II S.à.r.l.	X				X	
FI RESPARCS Funding Limited Partnership I	X				X	
FI RESPARCS Funding II Limited Partnership	X				X	
IU HSH N Residual Value Ltd.			X	X	X	
ASU HSH Facility Management GmbH	X				X	
Oth Adessa Grundstücksverwaltungsgesellschaft mbH & Co. Vermietungs KG				X	X	
Oth HSH Care+Clean GmbH				X	X	
Oth HSH Gastro+Event GmbH				X	X	
Oth HSH Move+More GmbH				X	X	
Oth Next Generation Aircraft Finance 2 S.à.r.l.				X	X	
Oth Next Generation Aircraft Finance 3 S.à.r.l.				X	X	
Oth OCEAN Funding 2013 GmbH				X	X	
Oth Senior Assured Investment S.A.				X	X	

Abbreviations:

CI: Credit institution in accordance with Article 4(1)(1) CRR

FI: Financial institution in accordance with Article 4(1)(26) CRR

IU: Insurance undertaking in accordance with Article 4(1)(5) CRR

ASU: Ancillary services undertaking in accordance with Article 4(1)(18) CRR

Oth: Other company

12.2. Capital requirements in accordance with Article 437(1) CRR

[Tab. 63] Disclosure of the type and amounts of the specific capital requirements during the transitional period

	Amount in € m	Article Reference CRR
Common Equity Tier 1 capital: instruments and reserves		
1 Capital instruments and the related share premium accounts	3,093	26(1), 27, 28, 29
of which: common shares (incl. share premium)	3,093	EBA list 26(3)
2 Retained earnings	1,100	26(1)(c)
3 Accumulated other comprehensive income (and other reserves, to include unrealised gains and losses under the applicable accounting standards)	153	26(1)
3a Funds for general banking risk	-	26(1)(f)
4 Amount of qualifying items referred to in Article 484(3) and the related share premium accounts subject to phase out from CET1	-	486(2)
5 Minority Interests (amount allowed in consolidated CET1)	-	84
5a Independently reviewed interim profits net of any foreseeable charge or dividend	-	26(2)
6 Common Equity Tier 1 (CET1) capital before regulatory adjustments	4,347	Sum of rows 1 to 5a
Common Equity Tier 1 (CET1) capital: regulatory adjustments		
7 Additional value adjustments (negative amount)	- 45	34, 105
8 Intangible assets (net of related tax liability) (negative amount)	- 10	36(1)(b), 37
9 Empty Set in the EU		
10 Deferred tax assets that rely on future profitability excluding those arising from temporary differences (net of related tax liability where the conditions in Article 38(3) are met) (negative amount)	- 5	36(1)(c), 38
11 Fair value reserves related to gains or losses on cash flow hedges	-	33(1)(a)
12 Negative amounts resulting from the calculation of expected loss amounts	- 2	36(1)(d), 40, 159
13 Any increase in equity that results from securitised assets (negative amount)	-	32(1)
14 Gains or losses on liabilities valued at fair value resulting from changes in own credit standing	-	33(1)(b)
15 Defined-benefit pension fund assets (negative amount)	-	36(1)(e), 41
16 Direct and indirect holdings by an institution of own CET1 instruments (negative amount)	-	36(1)(f), 42
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)	-	36(1)(g), 44
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 the 10% threshold and net of eligible short positions) (negative amount)	-	36(1)(h), 43, 45, 46, 49(2) and (3), 79
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)	-	36(1)(i), 43, 45, 47, 48(1)(b), 49(1) to (3), 79
20 Empty Set in the EU		
20a Exposure amount of the following items which qualify for a RW of 1,250%, where the institution opts for the deduction alternative	-	36(1)(k)
20b of which: qualifying holdings outside the financial sector (negative amount)	-	36(1)(k) subpoint (i), 89 to 91
20c of which: securitization positions (negative amount)	-	36(1)(k) subpoint (ii), 243(1)(b), 244(1)(b), 258
20d of which: free deliveries (negative amount)	-	36(1)(k) subpoint (iii), 379(3)
21 Deferred tax assets arising from temporary differences (amount above 10% threshold, net of related tax liability where the conditions in 38(3) are met) (negative amount)	- 214	36(1)(c), 38, 48(1)(a)
22 Amount exceeding the 15% threshold (negative amount)	-	48(1)
23 of which: direct and indirect holdings by the institution of the CET1 instruments of financial sector entities where the institution has a significant investment in those entities	-	36(1)(i), 48(1)(b)
24 Empty Set in the EU		
25 of which: deferred tax assets arising from temporary differences	-	36(1)(c), 38, 48(1)(a)

	Amount in € m	Article Reference CRR
25a Losses for the current financial year (negative amount)	-	36(1)(a)
25b Foreseeable tax charges relating to CET1 items (negative amount)	-	36(1)(l)
27 Qualifying AT1 deductions that exceed the AT1 capital of the institution (negative amount)	-	36(1)(j)
Other components or deductions regarding CET1	- 6	
28 Total regulatory adjustments to Common equity Tier 1 (CET1)	- 282	Sum of rows 7 to 20a, 21, 22 plus row 25a to 27
29 Common Equity Tier 1 (CET1) capital	4,064	Row 6 minus row 28
Additional Tier 1 (AT1) capital: instruments		
30 Capital instruments and the related share premium accounts	-	51, 52
31 of which: classified as equity under applicable accounting standards	-	
32 of which: classified as liabilities under applicable accounting standards	-	
33 Amount of qualifying items referred to in Article 484(4) and the related share premium accounts subject to phase out from AT1	-	486(3)
34 Qualifying Tier 1 capital included in consolidated AT1 capital (including minority interests not included in row 5) issued by subsidiaries and held by third parties	-	85, 86
35 of which: instruments issued by subsidiaries subject to phase out	-	486(3)
36 Additional Tier 1 (AT1) capital before regulatory adjustments	-	Sum of rows 30, 33 and 34
Additional Tier 1 (AT1) capital: regulatory adjustments		
37 Direct and indirect holdings by an institution of own AT1 Instruments (negative amount)	-	52(1)(b), 56(a), 57
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)	-	56(b), 58
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 the 10% threshold and net of eligible short positions) (negative amount)	-	56(c), 59, 60, 79
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 the 10% threshold net of eligible short positions) (negative amount)	-	56(d), 59, 79
41 Empty Set in the EU	-	
42 Qualifying T2 deductions that exceed the T2 capital of the institution (negative amount)	-	56(e)
43 Total regulatory adjustments to Additional Tier 1 (AT1) capital	-	Sum of rows 37 to 42
44 Additional Tier 1 (AT1) capital	-	Row 36 minus row 43
45 Tier 1 capital (T1 = CET1 + AT1)	4,064	Sum of rows 29 to 44
Tier 2 (T2) capital: instruments and provisions		
46 Capital instruments and the related share premium accounts	977	62, 63
47 Amount of qualifying items referred to in Article 484(5) and the related share premium accounts subject to phase out from T2	-	486(4)
48 Qualifying own funds instruments included in consolidated T2 capital (including minority interests and AT1 instruments not included in rows 5 or 34) issued by subsidiaries and held by third parties	-	87, 88
49 of which: instruments issued by subsidiaries subject to phase out	-	486(4)
50 Credit risk adjustments	110	62(c) and (d)
51 Tier 2 (T2) capital before regulatory adjustments	1,086	
Tier 2 (T2) capital: regulatory adjustments		
52 Direct and indirect holdings by an institution of own T2 instruments and subordinated loans (negative amount)	-	63(b) subpoint (i), 66(a), 67
53 Holdings of the T2 instruments and subordinated loans of financial sector entities where those entities have reciprocal cross holdings with the institution designed to inflate artificially the own funds of the institution (negative amount)	-	66(b), 68
54 Direct and indirect holdings of the T2 instruments and subordinated loans of financial sector entities where the institution does not have a significant investment in those entities (amount above 10% threshold and net of eligible short positions) (negative amount)	-	66(c), 69, 70, 79
55 Direct and indirect holdings by the institution of the T2 instruments and subordinated loans of financial sector entities where the institution has a significant investment in those entities (net of eligible short positions) (negative amount)	-	66(d), 69, 79

	Amount in € m	Article Reference CRR
56 Empty Set in the EU	-	
57 Total regulatory adjustments to Tier 2 (T2) capital	-	Sum of rows 52 to 56
58 Tier 2 (T2) capital	1,086	Row 51 minus row 57
59 Total capital (TC = T1 + T2)	5,151	Sum of rows 45 and 58
60 Total risk weighted assets	22,139	
Capital ratios and buffers		
61 Common Equity Tier 1 (as a percentage of risk exposure amount)	18.4%	92(2)(a)
62 Tier 1 (as a percentage of risk exposure amount)	18.4%	92(2)(b)
63 Total capital (as a percentage of risk exposure amount)	23.3%	92(2)(c)
64 Institution specific buffer requirement (CET1 requirement in accordance with Article 92(1)(a) plus capital conservation and countercyclical buffer requirements, plus systemic risk buffer, plus the systemically important institution buffer (G-SII or O-SII buffer), expressed as a percentage of risk exposure amount)	6.4%	CRD 128 to 131, 133
65 of which: capital conservation buffer requirement	1.9%	
66 of which: countercyclical buffer requirement	0.1%	
67 of which: systemic risk buffer requirement	0.0%	
67a of which: Global Systemically Important Institution (G-SII) or Other Systemically Important Institution (O-SII) buffer	0.0%	
68 Common Equity Tier 1 available to meet buffers (as a percentage of risk exposure amount)	13.9%	CRD 128
69 [non relevant in EU regulation]	-	
70 [non relevant in EU regulation]	-	
71 [non relevant in EU regulation]	-	
Amounts below the thresholds for deduction (before risk weighting)		
72 Direct and indirect holdings of the capital of financial sector entities where the institution does not have a significant investment in those entities (amount below 10% threshold and net of eligible short positions)	47	36(1)(h), 45, 46, 56(c), 59, 60, 66(c), 69, 70
73 Direct and indirect holdings by the institution of the CET 1 instruments of financial sector entities where the institution has a significant investment in those entities (amount below 10% threshold and net of eligible short positions)	4	36(1)(i), 45, 48
74 Empty Set in the EU	-	
75 Deferred tax assets arising from temporary differences (amount below 10% threshold, net of related tax liability where the conditions in Article 38(3) are met)	429	36(1)(c), 38, 48
Applicable caps on the inclusion of provisions in Tier 2		
76 Credit risk adjustments included in T2 in respect of exposures subject to standardised approach (prior to the application of the cap)	-	62
77 Cap on inclusion of credit risk adjustments in T2 under standardised approach	-	62
78 Credit risk adjustments included in T2 in respect of exposures subject to internal ratings-based approach (prior to the application of the cap)	560	62
79 Cap for inclusion of credit risk adjustments in T2 under internal ratings-based approach	110	62
Capital instruments subject to phase-out arrangements (only applicable between 1 Jan 2013 and 1 Jan 2022)		
80 Current cap on CET1 instruments subject to phase out arrangements	-	484(3), 486(2) and (5)
81 Amount excluded from CET1 due to cap (excess over cap after redemptions and maturities)	-	484(3), 486(2) and (5)
82 Current cap on AT1 instruments subject to phase out arrangements	883	484(4), 486(3) and (5)
83 Amount excluded from AT1 due to cap (excess over cap after redemptions and maturities)	-	484(4), 486(3) and (5)
84 Current cap on T2 instruments subject to phase out arrangements	35	484(5), 486(4) and (5)
85 Amount excluded from T2 due to cap (excess over cap after redemptions and maturities)	-	484(5), 486(4) and (5)

[Tab. 64] Full reconciliation of components of own funds with the audited financial statements in € m

Step 1) Comparison of own funds items of the consolidated financial statements between the scope of consolidation under the German Commercial Code (HGB) and the regulatory scope of consolidation

Position	Own funds items financial statement under IFRS per 06/30/2018		
	Accounting Scope of Consolidation	Regulatory Scope of Consolidation	Cause of the difference
Share capital	3,018	3,018	
Capital reserve	75	75	
Retained earnings	1,005	978	Consolidation and/or reinvestment of profits/losses
of which: other retained earnings	43	120	retained earnings/losses
of which: cumulative gains and losses arising on the revaluation of net defined benefit liabilities recognised in OCI	-182	-179	Consolidation (no inclusion of companies)
of which: deferred tax assets on cumulative gains and losses arising on the revaluation of net defined benefit liabilities recognised in OCI	58	58	
of which: credit risk-induced changes in the value of liabilities designated at fair value	0	0	
of which: deferred taxes on credit risk-induced changes from fair value designated liabilities	0	0	
of which: group reserve	1,087	980	Consolidation effects (first and deconsolidation)
Revaluation reserve	276	276	
of which: Valuation results relating to financial assets classified as FVOCI as a mandatory requirement (after taxes)	269	269	
of which: credit risk-induced changes in the value of liabilities designated at fair value (after taxes)	6	6	
Currency conversion reserve	13	13	Effects due to different scope of consolidation
Other net income from financial investments accounted for under the equity method	-	-	
Group net result	-78	-38	Effects due to different scope of consolidation
Non-controlling interests	-4	-4	Effects due to different scope of consolidation
Equity	4,305	4,318	
Subordinated liabilities	1,065	1,065	
Silent participations	1,226	1,226	
Profit participation capital	-	-	
Subordinated capital	2,291	2,291	
Other assets on the balance sheet/ P&L positions relevant for regulatory reporting			
Intangible assets	10	10	Effects due to different scope of consolidation
Deferred tax assets	1,844	1,827	Effects due to different scope of consolidation
Deferred tax liabilities	1,179	1,179	Effects due to different scope of consolidation

Step 2) Expansion of own funds items of the consolidated financial statements using the regulatory scope of consolidation taking intra-year regulatory adjustments and updates into account

Position	Expanded own funds items (IFRS per 06/30/2018) of the regulatory scope balance sheet	Regulatory adjustments in fiscal year 2018	Reason for adjustment	Expanded own funds items (IFRS per 06/30/2018) of the regulatory scope balance sheet including updates and regulatory adjustments in 2018	Component
Share capital	3,018	-		3,018	a
Capital reserve	75	-		75	b
Retained earnings	978	39		1,017	
of which: other retained earnings	120	-		120	c
of which: cumulative gains and losses arising on the revaluation of net defined benefit liabilities recognised in OCI	-179	57	Valuation changes in 2018	-122	j
of which: deferred tax assets on cumulative gains and losses arising on the revaluation of net defined benefit liabilities recognised in OCI	58	-19	Valuation changes in 2018	39	k
of which: credit risk-induced changes in the value of liabilities designated at fair value	0	0		-	Not considered
of which: deferred taxes on credit risk-induced changes from fair value designated liabilities	0	0		-	Not considered
of which: group reserves	980	-		980	d
Revaluation reserve	276	-62		214	f
of which: Valuation results relating to financial assets classified as FVOCI as a mandatory requirement (after taxes)	269	-55	Valuation changes in 2018	214	
of which: credit risk-induced changes in the value of liabilities designated at fair value (after taxes)	6	-6		-	Not considered
Currency conversion reserve	13	10	Valuation changes in 2018	22	e
Other net income from financial investments accounted for under the equity method	-	-		-	g
Group net result	-38	38	Group retained earnings in 2018, which is not eligible for regulatory purposes	-	i
Non-controlling interests	-4	4		-	Not considered
Equity	4,318			4,347	
Subordinated liabilities	1,065	-88	Amortization due to Article 64 CRR	977	o
Silent participations	1,226	-1,226	Due to the cancellation of all silent participations no longer included in own funds	-	n
Subordinated Capital	2,291			977	
Intangible assets	10	1	Valuation changes in 2018	10	ma
Deferred tax assets	1,827	-		1,827	
of which: deferred tax assets that rely on future profitability excluding those arising from temporary differences	14	-		14	ra

Position	Expanded own funds items (IFRS per 06/30/2018) of the regulatory scope balance sheet	Regulatory adjustments in fiscal year 2018	Reason for adjustment	Expanded own funds items (IFRS per 06/30/2018) of the regulatory scope balance sheet including updates and regulatory adjustments in 2018	Component
of which: deferred tax assets arising from temporary differences	1,813	-		1,813	sa
Deferred tax liabilities	1,179	-		1,179	
including: deferred tax assets that rely on future profitability excluding those arising from temporary differences	9	-	Allocation due to Article 38(5) CRR	9	rb
including: deferred tax assets arising from temporary differences	1,170	-	Allocation due to Article 38(5) CRR	1,170	sb
including: deferred taxes on intangible assets	-	-		-	mb
Interim profit/loss	-	-		-	l

Step 3) Allocation of own funds items to equity items

	Amount in € m	Component mapping to step 2
Common Equity Tier 1 capital: instruments and reserves		
1	3,093	a+b
2	1,100	c+d+i
3	153	e+f+g+(j+k)
5a	-	
6	4,347	
Common Equity Tier 1 (CET1) capital before regulatory adjustments		
Common Equity Tier 1 (CET1) capital: regulatory adjustments		
7	-45	regulatory value
8	-10	ma-mb
10	-5	rb-ra
12	-2	regulatory value
20a	-	regulatory value
21	-214	sb-sa and after consideration of threshold procedure
25a	-	l
	-6	regulatory value
28	-282	
29	4,064	
Additional Tier 1 (AT1) capital: instruments		
33	-	
36	-	
Additional Tier 1 (AT1) capital: regulatory adjustments		
43	-	
44	-	
45	4,064	
Tier 2 (T2) capital: instruments and provisions		
46	977	o
47	-	
50	110	regulatory value
51	1,086	
Tier 2 (T2) capital: regulatory adjustments		
57	-	
58	1,086	
59	5,151	

12.3. Main features of capital instruments

[Tab. 65] Description of the main features of capital instruments issued

1	Issuer	Hamburg Commercial Bank AG	Hamburg Commercial Bank AG	Hamburg Commercial Bank AG
2	Unique Identifier ¹	DE0003303996	XFNAM0009724	XFNAM0009757
3	Governing law(s) of the instrument	German Law	German Law	German Law
Regulatory Treatment				
4	Transitional CRR rules	Common Equity Tier 1	Tier 2	Tier 2
5	Post-transitional CRR rules	Common Equity Tier 1	Tier 2	Tier 2
6	Eligible at solo/(sub-)consolidated /solo & (sub-)consolidated	Solo and (Sub-)Consolidated	Solo and (Sub-)Consolidated	Solo and (Sub-)Consolidated
7	Instrument type	Share capital	registered bond	registered bond
8	Amount recognised in regulatory capital (EURm)	3018.2	10.1	2.8
9	Nominal amount of instrument (CUR of issuance)	3018.2 (EURm)	18 (EURm)	5 (EURm)
9	Nominal amount of issuance (EURm)	3018.2	18	5
9a	Issue price	N/A	100.0	100.0
9b	Redemption price	N/A	100.0	100.0
10	Accounting classification	Shareholders' equity/Share capital	Liability - amortised cost	Liability - amortised cost
11	Original date of issuance	02.06.2003	23.10.2006	27.10.2006
12	Perpetual or dated	Perpetual	Dated	Dated
13	Original maturity date	no maturity	22.10.2021	27.10.2021
14	Issuer call subject to prior supervisory approval	No	No	No
15	Optional call date, contingent call dates and redemption amount	No	No	No
16	Subsequent call dates, if applicable	N/A	N/A	N/A
Coupons / dividends				
17	Fixed or floating dividend / coupons	Floating	Fixed	Fixed
18	Coupon rate and any related index	N/A	4.55%	4.61%
19	Existence of a dividend stopper	No	No	No
20a	Fully discretionary, partially discretionary or mandatory (in terms of timing)	Mandatory	Mandatory	Mandatory
20b	Fully discretionary, partially discretionary or mandatory (in terms of amount)	Mandatory	Mandatory	Mandatory
21	Existence of step up or other incentive to redeem	No	No	No
22	Noncumulative oder cumulative	Noncumulative	Noncumulative	Noncumulative
23	Convertible or non-convertible	Nonconvertible	Nonconvertible	Nonconvertible
24	If convertible, conversion trigger(s)	N/A	N/A	N/A
25	If convertible, fully or partially	N/A	N/A	N/A
26	If convertible, conversion rate	N/A	N/A	N/A
27	If convertible, mandatory or optional conversion	N/A	N/A	N/A
28	If convertible, specify instrument type convertible into	N/A	N/A	N/A
29	If convertible, specify issuer of instrument it converts into	N/A	N/A	N/A
30	Write-down features	No	No	No
31	If write-down, write-down trigger(s)	N/A	N/A	N/A
32	If write-down, full or partial	N/A	N/A	N/A
33	If write-down, permanent or temporary	N/A	N/A	N/A
34	If temporary write-down, description of write-up mechanism	N/A	N/A	N/A
35	Position in subordination hierarchy in liquidation	N/A	participation certificate/ participation paper/ trust preferred	participation certificate/ participation paper/ trust preferred
36	Non-compliant transitioned features	N/A	N/A	N/A
37	If yes, specify non-compliant features	N/A	N/A	N/A

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1	Issuer	Hamburg Commercial Bank AG	Hamburg Commercial Bank AG	Hamburg Commercial Bank AG
2	Unique Identifier ¹	XFNAM0009815	XFNAM0010284	XFNAM0023378
3	Governing law(s) of the instrument	German Law	German Law	German Law
Regulatory Treatment				
4	Transitional CRR rules	Tier 2	Tier 2	Tier 2
5	Post-transitional CRR rules	Tier 2	Tier 2	Tier 2
6	Eligible at solo/(sub-)consolidated /solo & (sub-)consolidated	Solo and (Sub-)Consolidated	Solo and (Sub-)Consolidated	Solo and (Sub-)Consolidated
7	Instrument type	registered bond	Promissory notes	Promissory notes
8	Amount recognised in regulatory capital (EURm)	2.9	5.9	3.7
9	Nominal amount of instrument (CUR of issuance)	5 (EURm)	9.5 (EURm)	10 (EURm)
9	Nominal amount of issuance (EURm)	5	9.5	10
9a	Issue price	100.0	100.0	100.0
9b	Redemption price	100.0	100.0	100.0
10	Accounting classification	Liability - amortised cost	Liability - amortised cost	Liability - amortised cost
11	Original date of issuance	07.11.2006	07.02.2007	02.11.2000
12	Perpetual or dated	Dated	Dated	Dated
13	Original maturity date	08.11.2021	07.02.2022	02.11.2020
14	Issuer call subject to prior supervisory approval	No	No	No
15	Optional call date, contingent call dates and redemption amount	No	No	No
16	Subsequent call dates, if applicable	N/A	N/A	N/A
Coupons / dividends				
17	Fixed or floating dividend / coupons	Fixed	Fixed	Fixed
18	Coupon rate and any related index	4.48%	4.75%	6.51%
19	Existence of a dividend stopper	No	No	No
20a	Fully discretionary, partially discretionary or mandatory (in terms of timing)	Mandatory	Mandatory	Mandatory
20b	Fully discretionary, partially discretionary or mandatory (in terms of amount)	Mandatory	Mandatory	Mandatory
21	Existence of step up or other incentive to redeem	No	No	No
22	Noncumulative oder cumulative	Noncumulative	Noncumulative	Noncumulative
23	Convertible or non-convertible	Nonconvertible	Nonconvertible	Nonconvertible
24	If convertible, conversion trigger(s)	N/A	N/A	N/A
25	If convertible, fully or partially	N/A	N/A	N/A
26	If convertible, conversion rate	N/A	N/A	N/A
27	If convertible, mandatory or optional conversion	N/A	N/A	N/A
28	If convertible, specify instrument type convertible into	N/A	N/A	N/A
29	If convertible, specify issuer of instrument it converts into	N/A	N/A	N/A
30	Write-down features	No	No	No
31	If write-down, write-down trigger(s)	N/A	N/A	N/A
32	If write-down, full or partial	N/A	N/A	N/A
33	If write-down, permanent or temporary	N/A	N/A	N/A
34	If temporary write-down, description of write-up mechanism	N/A	N/A	N/A
35	Position in subordination hierarchy in liquidation	participation certificate/ participation paper/ trust preferred	participation certificate/ participation paper/ trust preferred	participation certificate/ participation paper/ trust preferred
36	Non-compliant transitioned features	N/A	N/A	N/A
37	If yes, specify non-compliant features	N/A	N/A	N/A

1	Issuer	Hamburg Commercial Bank AG	Hamburg Commercial Bank AG	Hamburg Commercial Bank AG
2	Unique Identifier ¹	XSO096688881	XSO098835761	XSO104723266
3	Governing law(s) of the instrument	English Law	English Law	English Law
Regulatory Treatment				
4	Transitional CRR rules	Tier 2	Tier 2	Tier 2
5	Post-transitional CRR rules	Tier 2	Tier 2	Tier 2
6	Eligible at solo/(sub-)consolidated /solo & (sub-)consolidated	Solo and (Sub-)Consolidated	Solo and (Sub-)Consolidated	Solo and (Sub-)Consolidated
7	Instrument type	bearer bond	bearer bond	bearer bond
8	Amount recognised in regulatory capital (EURm)	47.3	19.4	85.9
9	Nominal amount of instrument (CUR of issuance)	50 (EURm)	20 (EURm)	86 (EURm)
9	Nominal amount of issuance (EURm)	50	20	86
9a	Issue price	100.0	100.0	100.0
9b	Redemption price	100.0	100.0	100.0
10	Accounting classification	Liability - amortised cost	Liability - amortised cost	Liability - amortised cost
11	Original date of issuance	26.04.1999	29.06.1999	25.11.1999
12	Perpetual or dated	Dated	Dated	Dated
13	Original maturity date	26.04.2038	29.06.2029	25.11.2039
14	Issuer call subject to prior supervisory approval	Yes	Yes	Yes
15	Optional call date, contingent call dates and redemption amount	Possibility of termination in case of a change in taxation leading to additional payments to the owner of the debt securities	Possibility of termination in case of a change in taxation leading to additional payments to the owner of the debt securities	Possibility of termination in case of a change in taxation leading to additional payments to the owner of the debt securities
16	Subsequent call dates, if applicable	N/A	N/A	N/A
Coupons / dividends				
17	Fixed or floating dividend / coupons	Fixed	Fixed	Floating
18	Coupon rate and any related index	5.38%	5.00%	EURIBOR (EUR) 3M + 0.38 %
19	Existence of a dividend stopper	No	No	No
20a	Fully discretionary, partially discretionary or mandatory (in terms of timing)	Mandatory	Mandatory	Mandatory
20b	Fully discretionary, partially discretionary or mandatory (in terms of amount)	Mandatory	Mandatory	Mandatory
21	Existence of step up or other incentive to redeem	No	No	No
22	Noncumulative oder cumulative	Noncumulative	Noncumulative	Noncumulative
23	Convertible or non-convertible	Nonconvertible	Nonconvertible	Nonconvertible
24	If convertible, conversion trigger(s)	N/A	N/A	N/A
25	If convertible, fully or partially	N/A	N/A	N/A
26	If convertible, conversion rate	N/A	N/A	N/A
27	If convertible, mandatory or optional conversion	N/A	N/A	N/A
28	If convertible, specify instrument type convertible into	N/A	N/A	N/A
29	If convertible, specify issuer of instrument it converts into	N/A	N/A	N/A
30	Write-down features	No	No	No
31	If write-down, write-down trigger(s)	N/A	N/A	N/A
32	If write-down, full or partial	N/A	N/A	N/A
33	If write-down, permanent or temporary	N/A	N/A	N/A
34	If temporary write-down, description of write-up mechanism	N/A	N/A	N/A
35	Position in subordination hierarchy in liquidation	participation certificate/ participation paper/ trust preferred	participation certificate/ participation paper/ trust preferred	participation certificate/ participation paper/ trust preferred
36	Non-compliant transitioned features	N/A	N/A	N/A
37	If yes, specify non-compliant features	N/A	N/A	N/A

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1	Issuer	Hamburg Commercial Bank AG	Hamburg Commercial Bank AG	Hamburg Commercial Bank AG
2	Unique Identifier ¹	XS0105720881	XS0119368222	XS0119368495
3	Governing law(s) of the instrument	English Law	English Law	English Law
Regulatory Treatment				
4	Transitional CRR rules	Tier 2	Tier 2	Tier 2
5	Post-transitional CRR rules	Tier 2	Tier 2	Tier 2
6	Eligible at solo/(sub-)consolidated /solo & (sub-)consolidated	Solo and (Sub-)Consolidated	Solo and (Sub-)Consolidated	Solo and (Sub-)Consolidated
7	Instrument type	bearer bond	bearer bond (floating rate note)	bearer bond (floating rate note)
8	Amount recognised in regulatory capital (EURm)	63.8	70.0	49.9
9	Nominal amount of instrument (CUR of issuance)	64 (EURm)	70 (EURm)	50 (EURm)
9	Nominal amount of issuance (EURm)	64	70	50
9a	Issue price	100.0	100.0	99.7
9b	Redemption price	100.0	100.0	100.0
10	Accounting classification	Liability - amortised cost	Liability - amortised cost	Liability - amortised cost
11	Original date of issuance	17.01.2000	25.10.2000	25.10.2000
12	Perpetual or dated	Dated	Dated	Dated
13	Original maturity date	17.01.2030	25.10.2030	25.10.2030
14	Issuer call subject to prior supervisory approval	Yes	Yes	Yes
15	Optional call date, contingent call dates and redemption amount	Possibility of termination in case of a change in taxation leading to additional payments to the owner of the debt securities	Possibility of termination in case of a change in taxation leading to additional payments to the owner of the debt securities	Possibility of termination in case of a change in taxation leading to additional payments to the owner of the debt securities
16	Subsequent call dates, if applicable	N/A	Possibility of termination in case of a change in taxation leading to additional payments to the owner of the debt securities	N/A
Coupons / dividends				
17	Fixed or floating dividend / coupons	Floating	Floating	Floating
18	Coupon rate and any related index	EURIBOR (EUR) 6M + 0.36 %	EURIBOR (EUR) 3M + 0.38 %	EURIBOR (EUR) 3M + 0.36 %
19	Existence of a dividend stopper	No	No	No
20a	Fully discretionary, partially discretionary or mandatory (in terms of timing)	Mandatory	Mandatory	Mandatory
20b	Fully discretionary, partially discretionary or mandatory (in terms of amount)	Mandatory	Mandatory	Mandatory
21	Existence of step up or other incentive to redeem	No	No	No
22	Noncumulative oder cumulative	Noncumulative	Noncumulative	Noncumulative
23	Convertible or non-convertible	Nonconvertible	Nonconvertible	Nonconvertible
24	If convertible, conversion trigger(s)	N/A	N/A	N/A
25	If convertible, fully or partially	N/A	N/A	N/A
26	If convertible, conversion rate	N/A	N/A	N/A
27	If convertible, mandatory or optional conversion	N/A	N/A	N/A
28	If convertible, specify instrument type convertible into	N/A	N/A	N/A
29	If convertible, specify issuer of instrument it converts into	N/A	N/A	N/A
30	Write-down features	No	No	No
31	If write-down, write-down trigger(s)	N/A	N/A	N/A
32	If write-down, full or partial	N/A	N/A	N/A
33	If write-down, permanent or temporary	N/A	N/A	N/A
34	If temporary write-down, description of write-up mechanism	N/A	N/A	N/A
35	Position in subordination hierarchy in liquidation	participation certificate/ participation paper/ trust preferred	participation certificate/ participation paper/ trust preferred	participation certificate/ participation paper/ trust preferred
36	Non-compliant transitioned features	N/A	N/A	N/A
37	If yes, specify non-compliant features	N/A	N/A	N/A

1	Issuer	Hamburg Commercial Bank AG	Hamburg Commercial Bank AG	Hamburg Commercial Bank AG
2	Unique Identifier ¹	XSO119436326	XSO119502994	XSO119807674
3	Governing law(s) of the instrument	English Law	English Law	English Law
Regulatory Treatment				
4	Transitional CRR rules	Tier 2	Tier 2	Tier 2
5	Post-transitional CRR rules	Tier 2	Tier 2	Tier 2
6	Eligible at solo/(sub-)consolidated /solo & (sub-)consolidated	Solo and (Sub-)Consolidated	Solo and (Sub-)Consolidated	Solo and (Sub-)Consolidated
7	Instrument type	bearer bond (floating rate note)	bearer bond (floating rate note)	bearer bond
8	Amount recognised in regulatory capital (EURm)	49.9	80.0	11.2
9	Nominal amount of instrument (CUR of issuance)	50 (EURm)	80 (EURm)	30 (EURm)
9	Nominal amount of issuance (EURm)	50	80	30
9a	Issue price	99.3	100.0	100.0
9b	Redemption price	100.0	100.0	100.0
10	Accounting classification	Liability - amortised cost	Liability - amortised cost	Liability - amortised cost
11	Original date of issuance	30.10.2000	30.10.2000	13.11.2000
12	Perpetual or dated	Dated	Dated	Dated
13	Original maturity date	30.10.2030	30.10.2040	13.11.2020
14	Issuer call subject to prior supervisory approval	Yes	Yes	Yes
15	Optional call date, contingent call dates and redemption amount	Possibility of termination in case of a change in taxation leading to additional payments to the owner of the debt securities	Possibility of termination in case of a change in taxation leading to additional payments to the owner of the debt securities	Possibility of termination in case of a change in taxation leading to additional payments to the owner of the debt securities
16	Subsequent call dates, if applicable	N/A	N/A	N/A
Coupons / dividends				
17	Fixed or floating dividend / coupons	Floating	Floating	Fixed
18	Coupon rate and any related index	EURIBOR (EUR) 3M + 0.33 %	EURIBOR (EUR) 3M + 0.38 %	6.45%
19	Existence of a dividend stopper	No	No	No
20a	Fully discretionary, partially discretionary or mandatory (in terms of timing)	Mandatory	Mandatory	Mandatory
20b	Fully discretionary, partially discretionary or mandatory (in terms of amount)	Mandatory	Mandatory	Mandatory
21	Existence of step up or other incentive to redeem	No	No	No
22	Noncumulative oder cumulative	Noncumulative	Noncumulative	Noncumulative
23	Convertible or non-convertible	Nonconvertible	Nonconvertible	Nonconvertible
24	If convertible, conversion trigger(s)	N/A	N/A	N/A
25	If convertible, fully or partially	N/A	N/A	N/A
26	If convertible, conversion rate	N/A	N/A	N/A
27	If convertible, mandatory or optional conversion	N/A	N/A	N/A
28	If convertible, specify instrument type convertible into	N/A	N/A	N/A
29	If convertible, specify issuer of instrument it converts into	N/A	N/A	N/A
30	Write-down features	No	No	No
31	If write-down, write-down trigger(s)	N/A	N/A	N/A
32	If write-down, full or partial	N/A	N/A	N/A
33	If write-down, permanent or temporary	N/A	N/A	N/A
34	If temporary write-down, description of write-up mechanism	N/A	N/A	N/A
35	Position in subordination hierarchy in liquidation	participation certificate/ participation paper/ trust preferred	participation certificate/ participation paper/ trust preferred	participation certificate/ participation paper/ trust preferred
36	Non-compliant transitioned features	N/A	N/A	N/A
37	If yes, specify non-compliant features	N/A	N/A	N/A

Hamburg Commercial Bank
Disclosure Report as at 12/31/2018

1	Issuer	Hamburg Commercial Bank AG	Hamburg Commercial Bank AG	Hamburg Commercial Bank AG
2	Unique Identifier ¹	XS0120017974	XS0120117170	XS0120635809
3	Governing law(s) of the instrument	English Law	English Law	English Law
Regulatory Treatment				
4	Transitional CRR rules	Tier 2	Tier 2	Tier 2
5	Post-transitional CRR rules	Tier 2	Tier 2	Tier 2
6	Eligible at solo/(sub-)consolidated /solo & (sub-)consolidated	Solo and (Sub-)Consolidated	Solo and (Sub-)Consolidated	Solo and (Sub-)Consolidated
7	Instrument type	bearer bond (floating rate note)	bearer bond (floating rate note)	bearer bond (floating rate note)
8	Amount recognised in regulatory capital (EURm)	50.0	23.3	50.0
9	Nominal amount of instrument (CUR of issuance)	50 (EURm)	60 (EURm)	50 (EURm)
9	Nominal amount of issuance (EURm)	50	60	50
9a	Issue price	100.0	100.0	100.0
9b	Redemption price	100.0	100.0	100.0
10	Accounting classification	Liability - amortised cost	Liability - amortised cost	Liability - amortised cost
11	Original date of issuance	08.11.2000	11.12.2000	28.11.2000
12	Perpetual or dated	Dated	Dated	Dated
13	Original maturity date	08.11.2030	11.12.2020	28.11.2030
14	Issuer call subject to prior supervisory approval	Yes	Yes	Yes
15	Optional call date, contingent call dates and redemption amount	Possibility of termination in case of a change in taxation leading to additional payments to the owner of the debt securities	Possibility of termination in case of a change in taxation leading to additional payments to the owner of the debt securities	Possibility of termination in case of a change in taxation leading to additional payments to the owner of the debt securities
16	Subsequent call dates, if applicable	N/A	N/A	N/A
Coupons / dividends				
17	Fixed or floating dividend / coupons	Floating	Floating	Floating
18	Coupon rate and any related index	EURIBOR (EUR) 6M + 0.39 %	EURIBOR (EUR) 6M + 0.36 %	EURIBOR (EUR) 3M + 0.38 %
19	Existence of a dividend stopper	No	No	No
20a	Fully discretionary, partially discretionary or mandatory (in terms of timing)	Mandatory	Mandatory	Mandatory
20b	Fully discretionary, partially discretionary or mandatory (in terms of amount)	Mandatory	Mandatory	Mandatory
21	Existence of step up or other incentive to redeem	No	No	No
22	Noncumulative oder cumulative	Noncumulative	Noncumulative	Noncumulative
23	Convertible or non-convertible	Nonconvertible	Nonconvertible	Nonconvertible
24	If convertible, conversion trigger(s)	N/A	N/A	N/A
25	If convertible, fully or partially	N/A	N/A	N/A
26	If convertible, conversion rate	N/A	N/A	N/A
27	If convertible, mandatory or optional conversion	N/A	N/A	N/A
28	If convertible, specify instrument type convertible into	N/A	N/A	N/A
29	If convertible, specify issuer of instrument it converts into	N/A	N/A	N/A
30	Write-down features	No	No	No
31	If write-down, write-down trigger(s)	N/A	N/A	N/A
32	If write-down, full or partial	N/A	N/A	N/A
33	If write-down, permanent or temporary	N/A	N/A	N/A
34	If temporary write-down, description of write-up mechanism	N/A	N/A	N/A
35	Position in subordination hierarchy in liquidation	participation certificate/ participation paper/ trust preferred	participation certificate/ participation paper/ trust preferred	participation certificate/ participation paper/ trust preferred
36	Non-compliant transitioned features	N/A	N/A	N/A
37	If yes, specify non-compliant features	N/A	N/A	N/A

1	Issuer	Hamburg Commercial Bank AG	Hamburg Commercial Bank AG	Hamburg Commercial Bank AG
2	Unique Identifier ¹	XSO121146137	XSO121531122	XSO122546442
3	Governing law(s) of the instrument	English Law	English Law	English Law
Regulatory Treatment				
4	Transitional CRR rules	Tier 2	Tier 2	Tier 2
5	Post-transitional CRR rules	Tier 2	Tier 2	Tier 2
6	Eligible at solo/(sub-)consolidated /solo & (sub-)consolidated	Solo and (Sub-)Consolidated	Solo and (Sub-)Consolidated	Solo and (Sub-)Consolidated
7	Instrument type	bearer bond	bearer bond (floating rate note)	bearer bond
8	Amount recognised in regulatory capital (EURm)	35.0	16.0	16.1
9	Nominal amount of instrument (CUR of issuance)	35 (EURm)	16 (EURm)	18.4 (USDm)
9	Nominal amount of issuance (EURm)	35	16	16.1
9a	Issue price	100.6	99.9	100.0
9b	Redemption price	100.0	100.0	100.0
10	Accounting classification	Liability - amortised cost	Liability - amortised cost	Liability - amortised cost
11	Original date of issuance	06.12.2000	05.02.2001	29.12.2000
12	Perpetual or dated	Dated	Dated	Dated
13	Original maturity date	06.12.2030	05.02.2031	29.12.2030
14	Issuer call subject to prior supervisory approval	Yes	Yes	Yes
15	Optional call date, contingent call dates and redemption amount	Possibility of termination in case of a change in taxation leading to additional payments to the owner of the debt securities	Possibility of termination in case of a change in taxation leading to additional payments to the owner of the debt securities	Possibility of termination in case of a change in taxation leading to additional payments to the owner of the debt securities
16	Subsequent call dates, if applicable	N/A	N/A	N/A
Coupons / dividends				
17	Fixed or floating dividend / coupons	Fixed	Floating	Floating
18	Coupon rate and any related index	6.44%	EURIBOR (EUR) 3M + 0.36 %	LIBOR (USD) 3M + 0.42 %
19	Existence of a dividend stopper	No	No	No
20a	Fully discretionary, partially discretionary or mandatory (in terms of timing)	Mandatory	Mandatory	Mandatory
20b	Fully discretionary, partially discretionary or mandatory (in terms of amount)	Mandatory	Mandatory	Mandatory
21	Existence of step up or other incentive to redeem	No	No	No
22	Noncumulative oder cumulative	Noncumulative	Noncumulative	Noncumulative
23	Convertible or non-convertible	Nonconvertible	Nonconvertible	Nonconvertible
24	If convertible, conversion trigger(s)	N/A	N/A	N/A
25	If convertible, fully or partially	N/A	N/A	N/A
26	If convertible, conversion rate	N/A	N/A	N/A
27	If convertible, mandatory or optional conversion	N/A	N/A	N/A
28	If convertible, specify instrument type convertible into	N/A	N/A	N/A
29	If convertible, specify issuer of instrument it converts into	N/A	N/A	N/A
30	Write-down features	No	No	No
31	If write-down, write-down trigger(s)	N/A	N/A	N/A
32	If write-down, full or partial	N/A	N/A	N/A
33	If write-down, permanent or temporary	N/A	N/A	N/A
34	If temporary write-down, description of write-up mechanism	N/A	N/A	N/A
35	Position in subordination hierarchy in liquidation	participation certificate/ participation paper/ trust preferred	participation certificate/ participation paper/ trust preferred	participation certificate/ participation paper/ trust preferred
36	Non-compliant transitioned features	N/A	N/A	N/A
37	If yes, specify non-compliant features	N/A	N/A	N/A

Hamburg Commercial Bank
Disclosure Report as at 12/31/2018

1	Issuer	Hamburg Commercial Bank AG	Hamburg Commercial Bank AG	Hamburg Commercial Bank AG
2	Unique Identifier ¹	XS0122667230	XS0122825754	XS0123007279
3	Governing law(s) of the instrument	English Law	English Law	English Law
Regulatory Treatment				
4	Transitional CRR rules	Tier 2	Tier 2	Tier 2
5	Post-transitional CRR rules	Tier 2	Tier 2	Tier 2
6	Eligible at solo/(sub-)consolidated /solo & (sub-)consolidated	Solo and (Sub-)Consolidated	Solo and (Sub-)Consolidated	Solo and (Sub-)Consolidated
7	Instrument type	bearer bond (floating rate note)	bearer bond	bearer bond (floating rate note)
8	Amount recognised in regulatory capital (EURm)	92.0	19.9	5.0
9	Nominal amount of instrument (CUR of issuance)	92 (EURm)	22.7 (USDm)	5 (EURm)
9	Nominal amount of issuance (EURm)	92	19.9	5
9a	Issue price	100.0	100.0	100.0
9b	Redemption price	100.0	100.0	100.0
10	Accounting classification	Liability - amortised cost	Liability - amortised cost	Liability - amortised cost
11	Original date of issuance	22.01.2001	22.01.2001	12.01.2001
12	Perpetual or dated	Dated	Dated	Dated
13	Original maturity date	22.01.2041	05.01.2040	01.12.2030
14	Issuer call subject to prior supervisory approval	Yes	Yes	Yes
15	Optional call date, contingent call dates and redemption amount	Possibility of termination in case of a change in taxation leading to additional payments to the owner of the debt securities	Possibility of termination in case of a change in taxation leading to additional payments to the owner of the debt securities	Possibility of termination in case of a change in taxation leading to additional payments to the owner of the debt securities
16	Subsequent call dates, if applicable	N/A	N/A	N/A
Coupons / dividends				
17	Fixed or floating dividend / coupons	Floating	Floating	Floating
18	Coupon rate and any related index	EURIBOR (EUR) 3M + 0.38 %	LIBOR (USD) 3M + 0.42 %	EURIBOR (EUR) 3M + 0.36 %
19	Existence of a dividend stopper	No	No	No
20a	Fully discretionary, partially discretionary or mandatory (in terms of timing)	Mandatory	Mandatory	Mandatory
20b	Fully discretionary, partially discretionary or mandatory (in terms of amount)	Mandatory	Mandatory	Mandatory
21	Existence of step up or other incentive to redeem	No	No	No
22	Noncumulative oder cumulative	Noncumulative	Noncumulative	Noncumulative
23	Convertible or non-convertible	Nonconvertible	Nonconvertible	Nonconvertible
24	If convertible, conversion trigger(s)	N/A	N/A	N/A
25	If convertible, fully or partially	N/A	N/A	N/A
26	If convertible, conversion rate	N/A	N/A	N/A
27	If convertible, mandatory or optional conversion	N/A	N/A	N/A
28	If convertible, specify instrument type convertible into	N/A	N/A	N/A
29	If convertible, specify issuer of instrument it converts into	N/A	N/A	N/A
30	Write-down features	No	No	No
31	If write-down, write-down trigger(s)	N/A	N/A	N/A
32	If write-down, full or partial	N/A	N/A	N/A
33	If write-down, permanent or temporary	N/A	N/A	N/A
34	If temporary write-down, description of write-up mechanism	N/A	N/A	N/A
35	Position in subordination hierarchy in liquidation	participation certificate/ participation paper/ trust preferred	participation certificate/ participation paper/ trust preferred	participation certificate/ participation paper/ trust preferred
36	Non-compliant transitioned features	N/A	N/A	N/A
37	If yes, specify non-compliant features	N/A	N/A	N/A

1	Issuer	Hamburg Commercial Bank AG	Hamburg Commercial Bank AG	Hamburg Commercial Bank AG
2	Unique Identifier ¹	XSO124807099	XSO126551695	XSO133159227
3	Governing law(s) of the instrument	English Law	English Law	English Law
Regulatory Treatment				
4	Transitional CRR rules	Tier 2	Tier 2	Tier 2
5	Post-transitional CRR rules	Tier 2	Tier 2	Tier 2
6	Eligible at solo/(sub-)consolidated /solo & (sub-)consolidated	Solo and (Sub-)Consolidated	Solo and (Sub-)Consolidated	Solo and (Sub-)Consolidated
7	Instrument type	bearer bond	bearer bond	bearer bond (floating rate note)
8	Amount recognised in regulatory capital (EURm)	21.8	124.9	20.0
9	Nominal amount of instrument (CUR of issuance)	25 (USDm)	143 (USDm)	20 (EURm)
9	Nominal amount of issuance (EURm)	21.8	124.9	20
9a	Issue price	100.5	100.5	99.5
9b	Redemption price	100.0	100.0	100.0
10	Accounting classification	Liability - amortised cost	Liability - amortised cost	Liability - amortised cost
11	Original date of issuance	19.02.2001	21.03.2001	18.07.2001
12	Perpetual or dated	Dated	Dated	Dated
13	Original maturity date	19.02.2031	21.03.2031	18.07.2031
14	Issuer call subject to prior supervisory approval	Yes	Yes	Yes
15	Optional call date, contingent call dates and redemption amount	Possibility of termination in case of a change in taxation leading to additional payments to the owner of the debt securities	Possibility of termination in case of a change in taxation leading to additional payments to the owner of the debt securities	Possibility of termination in case of a change in taxation leading to additional payments to the owner of the debt securities
16	Subsequent call dates, if applicable	N/A	N/A	N/A
Coupons / dividends				
17	Fixed or floating dividend / coupons	Floating	Floating	Floating
18	Coupon rate and any related index	LIBOR (USD) 3M + 0.41 %	LIBOR (USD) 3M + 0.41 %	EURIBOR (EUR) 3M + 0.42 %
19	Existence of a dividend stopper	No	No	No
20a	Fully discretionary, partially discretionary or mandatory (in terms of timing)	Mandatory	Mandatory	Mandatory
20b	Fully discretionary, partially discretionary or mandatory (in terms of amount)	Mandatory	Mandatory	Mandatory
21	Existence of step up or other incentive to redeem	No	No	No
22	Noncumulative oder cumulative	Noncumulative	Noncumulative	Noncumulative
23	Convertible or non-convertible	Nonconvertible	Nonconvertible	Nonconvertible
24	If convertible, conversion trigger(s)	N/A	N/A	N/A
25	If convertible, fully or partially	N/A	N/A	N/A
26	If convertible, conversion rate	N/A	N/A	N/A
27	If convertible, mandatory or optional conversion	N/A	N/A	N/A
28	If convertible, specify instrument type convertible into	N/A	N/A	N/A
29	If convertible, specify issuer of instrument it converts into	N/A	N/A	N/A
30	Write-down features	No	No	No
31	If write-down, write-down trigger(s)	N/A	N/A	N/A
32	If write-down, full or partial	N/A	N/A	N/A
33	If write-down, permanent or temporary	N/A	N/A	N/A
34	If temporary write-down, description of write-up mechanism	N/A	N/A	N/A
35	Position in subordination hierarchy in liquidation	participation certificate/ participation paper/ trust preferred	participation certificate/ participation paper/ trust preferred	participation certificate/ participation paper/ trust preferred
36	Non-compliant transitioned features	N/A	N/A	N/A
37	If yes, specify non-compliant features	N/A	N/A	N/A

¹⁾ Standard identifier, starting with XF, are bank internal identifier.

13. List of abbreviations

ABF	Asset Backed Funding
ABS	Asset Backed Securities
AIRB	Advanced Internal Ratings Based
AMM	Additional Monitoring Metrics for Liquidity Reporting
AT1	Additional Tier 1 Capital
BaFin	Bundesanstalt für Finanzdienstleistungsaufsicht (Federal Financial Supervisory Authority)
BCBS	Basel Committee on Banking Supervision
CCF	Credit Conversion Factor
CET1	Common Equity Tier 1
CFO	Chief Financial Officer
COREP	Common Solvency Ratio Reporting
CRD IV	Capital Requirements Directive (2013/36/EU)
CRO	Chief Risk Officer
CRR	Capital Requirements Regulation (Regulation (EU) No. 575/2013)
CRSA	Credit Risk Standardized Approach
CVA	Credit Valuation Adjustments
DSGV	Deutscher Sparkassen- und Giroverband (German Association of Savings Banks and Giro Banks)
EaD	Exposure at Default
EBA	European Banking Authority
ECA	Export Credit Agency
ECAI	External Credit Assessment Institutions
ECB	European Central Bank
EKU	Eigenkapitalunterlegung (own funds requirements)
EL	Expected Loss
EMIR	European Market Infrastructure Regulation
FINREP	Financial Reporting
FIRB	Foundation Internal Ratings Based
Fitch	Fitch Ratings
FVPL	Fair Value through Profit or Loss
FX risk	Foreign Exchange risk
GBS Committee	Gesamtbanksteuerung (Group Bank Steering-Committee)
GL	Guideline
GRM	Group Risk Management
HGB	Handelsgesetzbuch (German Commercial Code)
ICRE	International Commercial Real Estate
ILAAP	Internal Liquidity Adequacy Assessment Process
IFRS	International Financial Reporting Standard
IRB	Internal Rating Based
IRBA	Internal Rating Based Approach
IRRBB	Interest Rate Risk in the Banking Book
ISDA	International Swaps and Derivatives Association
KWG	Gesetz über das Kreditwesen/Kreditwesengesetz (German Banking Act)
LCH	London Clearing House
LCR	Liquidity Coverage Ratio

LGD	Loss Given Default
LMS	Liquidity Maturity Statement
Ltd.	Limited
LVaR	Liquidity Value at Risk
MaRisk	Mindestanforderungen an das Risikomanagement (Minimum Requirements for Risk Management)
Moody's	Moody's Investors Service
NSFR	Net Stable Funding Ratio
NPL	Non-performing Loan
OTC	Over the Counter
P&L	Profit and Loss
PD	Probability of Default
RSU	RSU Rating Service Unit GmbH & Co. KG
RWA	Risk Weighted Assets
SFA	Supervisory Formula Approach
SFT	Securities Financing Transactions
SME	Small and medium-sized Enterprises
SolvV	Solvabilitätsverordnung (German Solvency Regulation)
S & P	Standard & Poor's
SPV	Special Purpose Vehicle
SR	S Rating und Risikosysteme GmbH
SRF	Strategic Risk Framework
T1	Tier 1 Capital
T2	Tier 2 Capital
T & M	Treasury and Markets
VaR	Value-at-Risk

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