

Disclosure Report

In accordance with Regulation (EU) No. 575/2013 (CRR)
in conjunction with Amending Regulation (EU) 2019/876

As of 31 December 2019

Overview

Deutsche Pfandbriefbank Group (pbb Group)

All figures in € million, unless otherwise stated

Significant regulatory ratios	31.12.2019	31.12.2018	Change
Own funds (total capital, TC)	3,733	3,639	3%
Tier 1 capital (T1)	3,109	2,996	4%
Common equity tier 1 capital (CET1)	2,811	2,698	4%
Additional tier 1 capital (AT1)	298	298	0%
Tier 2 capital (T2)	624	643	-3%
Risk weighted assets (RWA)	17,721	14,587	21%
Credit risk	16,703	13,488	24%
Credit risk (without counterparty credit risk)	16,184	12,963	25%
Counterparty credit risk	519	524	-1%
thereof: CVA risk	239	262	-8%
Market risk	148	229	-35%
Operational risk	870	870	0%
Capital ratios			
Common equity tier 1 ratio (CET1 ratio)	15.9%	18.5%	-2.6 percentage points
Tier 1 ratio (T1 ratio)	17.5%	20.5%	-3.0 percentage points
Own funds ratio (Total capital ratio)	21.1%	24.9%	-3.8 percentage points
Capital buffers			
Total capital buffer requirement	2.836%	2.064%	+0.772 percentage points
Institution-specific countercyclical capital buffer (ICCB)	0.336%	0.189%	+0.147 percentage points
Capital conservation buffer (CCB)	2.500%	1.875%	+0.625 percentage points
Available CET1 capital after complying with the minimum capital requirements	2,014	2,042	-1%
Leverage ratio			
Tier 1 capital (T1)	3,109	2,996	4%
Total leverage ratio exposure	55,023	56,856	-3%
Leverage Ratio	5.6%	5.3%	+0.3 percentage points
Asset encumbrance ratio			
Encumbered assets and further used received collateral (median values)	38,863	37,972	2%
Total assets and received collateral (median values)	59,712	57,662	4%
Asset encumbrance ratio (median values)	65.1%	65.9%	-0.8 percentage points
Non-performing exposure (NPE)			
Non-performing exposure (gross)	519	361	44%
Total exposure (gross)	55,229	57,870	-5%
Non-performing exposure (NPE) ratio	0.9%	0.6%	+0.3 percentage points
Non-performing loan (NPL) ratio	1.2%	0.8%	+0.4 percentage points
Liquidity coverage ratio (LCR)			
Liquidity buffer (twelve-month average values)	5,453	5,939	-8%
Total net cash outflows (twelve-month average values)	2,402	2,317	4%
Liquidity coverage ratio (twelve-month average values)	227%	256%	-29 percentage points

Contents

1	Introduction	5
2	Scope	12
2.1	Organisational and legal structure	12
2.2	Corporate governance principles	15
2.3	Remuneration policy	20
2.4	Regulatory and accounting consolidation	21
3	Own funds and assets	28
3.1	Structure of own funds	28
3.2	Countercyclical capital buffer	41
3.3	Own funds requirements	45
3.4	Capital ratios	50
3.5	Leverage ratio	52
3.6	Encumbered and unencumbered assets	56
4	Risk management and risk-oriented overall bank management	61
4.1	General organisation and risk management principles	62
4.2	Risk types	68
4.3	Economic capital and risk-bearing capacity	69
5	Credit risk	75
5.1	Management of credit risk (including counterparty credit risk)	75
5.2	General information concerning the credit risk	81
5.3	Credit risk mitigation techniques	105
5.4	Standardised approach	109
5.5	IRB approach	114
5.6	Counterparty credit risk	134
5.7	Shareholdings in the banking book	144
5.8	Securitisations	146
6	Market risk	147
6.1	Management of market risk	147
6.2	Own funds requirement for the market risk	151
6.3	Interest rate risk in the banking book	152
7	Liquidity and funding risk	155
7.1	Management of liquidity and funding risk	155
7.2	Liquidity risk development	157
7.3	Liquidity coverage ratio	158

Disclosure Report as of 31 December 2019

8	Operational risk	161
8.1	Management of operational risk	161
8.2	Operational risk profile	163
8.3	Own funds requirement for operational risk	163
9	Outlook	164
	List of figures	165
	List of tables	165

Note:

Numbers provided in the Disclosure Report are commercially rounded. Due to roundings, the sums shown in the tables may slightly differ from the arithmetic total of the individual amounts shown.

With regard to the CRR and CRR II/CRD IV and CRD V regulations (referred to uniformly in the following as “CRR” or “CRD” if and to the extent that statements are not made to the currently not yet valid regulations of CRR II or CRD V, which are then explicitly designated as “CRR II” or “CRD V”), there continues to be uncertainty regarding how some of the regulations are to be interpreted, and some of the related mandatory technical regulation standards are not yet available in their final version. Accordingly, we will continuously adapt our assumptions and models to reflect our understanding and our interpretation of the rules and also those of the sector. Accordingly, our CRR/CRD parameters may differ from our previous expectations. Our CRR/CRD parameters might also not be comparable with similar parameters designated by our competitors as their assumptions and assessments may differ from ours.

Disclosure Report

1 Introduction

With the present Disclosure Report Deutsche Pfandbriefbank AG (pbb) implements the disclosure requirements under part 8 of Regulation (EU) No. 575/2013 (Capital Requirements Regulation; CRR) in conjunction with the Amendment Regulation (EU) 2019/876 (so-called CRR II) for pbb and its downstream affiliates (pbb Group) as of 31 December 2019. pbb is the parent company of the regulatory group as defined in section 10a (1) sentence 1 of the German Banking Act (KWG) in conjunction with article 11 et seq. CRR and is thus responsible for regulatory disclosure requirements.

The disclosure requirements are set out in articles 431 to 455 CRR, additional requirements can be found in section 26a (1), sentence 1 of the German Banking Act (Kreditwesengesetz, "KWG"). In order to comply with these disclosure requirements, pbb has voluntarily applied the disclosure formats of the EBA/GL/2016/11 guidelines of the European Banking Authority (EBA) on disclosure requirements under part 8 of the CRR as well as the EBA/GL/2017/01 guidelines on LCR disclosure to complement the disclosure of liquidity risk management under article 435 CRR. pbb has disclosed the EBA/GL/2018/10 guidelines on the disclosure of non-performing and forbore exposures in this Disclosure Report for the first time. On the other hand, the revised disclosure requirements according to part 8 of the CRR Amendment Regulation (CRR II) will only be applicable starting 28 June 2021.

If a disclosure requirement necessitates the provision of information for the current and also for a previous reporting date (e.g. table EU OV1) or flow data for the reporting period (e.g. table EU CR8), pbb discloses this information in order to ensure better transparency and comparability of the disclosure tables as well as the uniformity of the Disclosure Report for the financial year 2019.

pbb Deutsche Pfandbriefbank

The pbb Group consists mostly of the parent company pbb. pbb has its registered offices in Munich/Garching, and is a leading European specialist bank for financing of investments in commercial properties and public infrastructure in Europe and the USA, focusing on Pfandbrief-eligible business. The geographic focus within Europe is on Germany, France, the United Kingdom, the Nordic countries, on selected Central and Eastern European countries as well as on Spain and the Benelux countries.

In its core markets, the pbb Group has a local presence and know-how throughout the entire process chain: with real-estate experts, specialists in real-estate law and financing experts right through to supporting the loan exposures. The pbb Group actively utilises this local expertise in order also to support its customers in the case of international transactions, whereby central decisions are always taken within Germany.

The central refinancing instrument is the Pfandbrief (covered bond). pbb is one of the largest Pfandbrief issuers in terms of outstanding volume and is thus simultaneously a major issuer of covered bonds in Europe. It issues mortgage Pfandbriefe which are secured by property charges as well as public Pfandbriefe which are secured by public sector receivables. The Pfandbrief market is characterised by high liquidity and a broad investor base (source: Verband Deutscher Pfandbriefbanken).

The shares of pbb are listed in the Prime Standard of the regulated market of the Frankfurt Stock Exchange (Frankfurter Wertpapierbörse) and are included in the MDAX® index.

Objectives of the Disclosure Report

The Disclosure Report, together with the annual report of the pbb Group provides a comprehensive picture of the current risk profile and risk management of the pbb Group. The Disclosure Report complements the regulatory procedures of Pillar 1 of the Basel III framework defined in CRR and CRD (Capital Requirements Directive), and focuses essentially on the regulatory perspective. It comprises in particular information regarding the following:

- the regulatory and accounting structure of the pbb Group (scope)
- the capital structure, base and capital requirements
- the general risk management system of the pbb Group (risk management objectives and policy)
- the risk management in relation to individual risk types
- leverage and encumbrance of assets
- governance arrangements and the remuneration policy.

According to article 431 (2) CRR, compliance with the disclosure requirements is a precondition to apply certain instruments and methodologies to calculate capital requirements, e. g. the internal ratings-based (IRB) approach for credit exposures or credit risk mitigation techniques.

In line with article 432 CRR, institutions may decide not to disclose one or more items as specified in part 8, title II/III of CRR provided that these are not significant or are classified as business secret or sensitive information. pbb however fully complies with all disclosure requirements.

Scope

According to article 13 (1) sentence 1 CRR, the Disclosure Report is based on the consolidated situation of the pbb Group. According to article 13 CRR, pbb as the parent company of the Group is not required to provide an additional disclosure at institution level. There are no significant subsidiaries as defined in article 13 (1) sentence 2 CRR.

This Report is based on the regulatory scope of consolidation according to articles 18 to 24 CRR. As at the reporting date, there was no difference between the regulatory scope and the accounting scope of consolidation used for pbb's consolidated financial statements (IFRS). For the disclosure based on the consolidated situation, business relationships within the consolidation scope must be set off against each other and group-internal business must be eliminated. Regulatory key figures have been determined based on IFRS. Unless expressly indicated the numbers are generally based on the legal provisions applicable at the reporting date (including transitional provisions).

Waiver regulation as per article 7 CRR

In the financial year 2019 (as was also the case in the previous year), pbb utilised the exemptions of the waiver regulation under article 7 (3) CRR. Pursuant to the decision of the European Central Bank (ECB), pbb, as the supervised parent company of the pbb Group, is permitted to take certain control requirements into account only on a consolidated group basis and not in addition to the individual institution level.

pbb also fulfils the requirements according to article 7 (3) CRR:

- Within the pbb Group, there are no major actual or legal obstacles to the immediate transfer of own funds or the repayment of liabilities to the parent company (pbb), nor are there any signs of any such obstacles. The key company (pbb) which is essential to the financial stability of the pbb Group, has its headquarter in Germany. pbb is also the only credit institution within the pbb Group. The holding of pbb in the regulatory consolidated subsidiaries is 100 % in each case. In addition, the existence of a formal internal decision-making process for transferring own funds between pbb (as the parent company and parent institution of the pbb Group) and the subsidiaries enables funds to be transferred

Disclosure Report as of 31 December 2019

promptly. As in the previous year, no transfer of own funds and no repayment of liabilities as defined by article 7 (1) letter a CRR took place in the reporting year 2019.

- The pbb Group has an integrated risk management system that extends to the entire Group, including pbb and its subsidiaries which are included within the regulatory scope of consolidation of the pbb Group. The Management Board of pbb is responsible for the risk management system and decides on the strategies and the key issues of risk management and risk organisation. The principles, methods and processes of the pbb Group's risk management system are centrally defined by pbb and are applied by the pbb Group (subject to the implementation required by company law and any necessary modifications at the level of the respective Group company). All the decision-making committees of the companies of the pbb Group include employees of pbb as members of the respective companies, thereby enabling adequate involvement in all strategic decisions of the pbb Group. Furthermore, this ensures that the risk-taking and risk management are uniformly applied in all companies of the pbb Group. Moreover, pbb has a risk control unit that is responsible for the uniform application of risk management within the pbb Group. This ensures that risk measurement procedures and risk reporting are consistent and risk indicators are comparable within the pbb Group.

During the financial year 2019, as was the case in the previous year, pbb also utilised a waiver which was granted by the ECB in accordance with section 2a (2) KWG. Accordingly, at the individual institution level, and for the purpose of risk management, with the exception of liquidity risk, pbb is exempted from the obligation to apply the requirements of section 25a (1) sentence 3 No. 1, 2 and 3b) and c) KWG regarding the risk-controlling function. The criteria necessary in accordance with article 7 (3) CRR for granting the waiver have been satisfied: There are no major actual or legal obstacles preventing the immediate transfer of own funds or the repayment of liabilities to the parent institution in a member state, nor are there any indications that such obstacles might exist in future. The risk evaluation, measurement and control procedures necessary for consolidated supervision also cover the parent institution in a member state.

Disclosure frequency

According to article 433 CRR, institutions must verify, on the basis of the relevant features of their business, whether it is necessary for them to disclose the relevant information more than once a year in full or in part. With regard to assessing the need for more frequent disclosure, pbb follows the EBA/GL/2014/14 in conjunction with EBA/GL/2016/11 of the European Banking Authority. The pbb Group meets the criterion of "the consolidated assets of the institution exceed € 30 billion" as per title V point 18 letter b of these guidelines, and it is therefore pursuant to point 26 b subject to a semi-annual disclosure, on 30 June of any financial year (abridged) and 31 December of any financial year (complete). The IFRS balance sheet total of the pbb Group amounted to approx. € 56.8 billion as of 31 December 2019 (31 December 2018: € 57.8 billion).

Means of disclosure

According to article 434 (1) CRR in conjunction with point 39 of the EBA/GL/2016/11, the Disclosure Report is publicised as an independent report on the website of pbb (www.pfandbriefbank.com) under Investors / Mandatory Publications / Disclosure Report in accordance with part 8 of the CRR. The European Central Bank (ECB), Deutsche Bundesbank and Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) are informed of the time and the medium of the publication. Deutsche Pfandbriefbank AG is directly supervised by the ECB.

Disclosure Report as of 31 December 2019

Formal methods and regulations to comply with disclosure requirements

A major element for complying with the Pillar 3 disclosure requirements, apart from the Disclosure Report itself, is the written documentation of the regulations and procedures used in the course of the disclosure process. According to article 431 (3) CRR, the pbb Group has thus adopted formal policies which assure compliance with the disclosure requirements, and has implemented and documented them in a disclosure policy. This policy describes all material, inherent principles of disclosure in accordance with part 8 of the CRR, e. g. the kind and scope of disclosure including the use of so-called disclosure waivers, the adequacy of information, the disclosure medium and disclosure terms, the frequency of disclosure including decision criteria for the "appropriate" disclosure cycle, responsibilities as well as the integration of the disclosure process into bank-internal work processes and structures. Furthermore, the policy contains directives on the regular verification of the adequacy and practicality of disclosure practices applied at the pbb Group, as well as defined disclosure standards and processes. The disclosure policy is verified and aligned with market requirements on a regular basis.

Within the framework of the disclosure process, the pbb Group has installed various control procedures which are used for monitoring whether the disclosed data are complete, correct and adequate. The procedures and regulations implemented for disclosure are also regularly monitored by Internal Audit and audited by the auditor. The Disclosure Report itself is not audited by the auditor of the pbb Group; this is the reason why the Pillar 3 disclosures in this report are not certified. However, the Disclosure Report contains data which are also quoted in the published 2019 annual report of the pbb Group.

The Disclosure Report is approved by the central management board of pbb.

Disclosure information in accordance with part 8 of the CRR

The present report comprises the information to be disclosed in accordance with part 8 of the CRR (Basel III, Pillar 3), to the extent that such information has not in individual cases already been published in other documents of pbb. The following table provides an overview of the separate documents of pbb (and also the specific points in such documents) in which specified publications in accordance with part 8 of the CRR or corresponding additional information is to be found, if such information is not included in the present Disclosure Report. In addition, the corresponding chapters of the Disclosure Report refer to the separate positions.

Figure 1: Major disclosure information in separate documents

Disclosure issue according to part 8 of the CRR	Designation of the separate document	Web link
Article 431 CRR: Scope of disclosure requirements	Additional information concerning the disclosure requirement according to section 26a KWG, regarding the legal and organisational structure: Competitive position in the annual report 2019 of the pbb Group, page 11 et seq.	www.pfandbriefbank.com (under Investors / Financial Reports)
Articles 432, 433 and 434 CRR: General disclosure principles	-	-

Disclosure Report as of 31 December 2019

Disclosure issue according to part 8 of the CRR	Designation of the separate document	Web link
Article 435 (1) CRR: Risk management objectives and policies	<p>Additional information concerning risk management objectives and policies and concerning the adequacy of the risk management procedures:</p> <p>Risk and opportunity report in the annual report 2019 of the pbb Group, page 39 et seq. (break-down of credit portfolio according to business segments, etc.)</p> <p>Risk and opportunity report in the annual report 2019 of the pbb Group, market risk, page 53 et seq. (information concerning the IBOR (Interbank Offered Rates) reform)</p> <p>Forecast report in the annual report 2019 of the pbb Group, page 87 et seq. (enterprise-wide or general company-specific risks and opportunities)</p> <p>Responsibility statement in the annual report 2019 of the pbb Group, page 191</p>	<p>www.pfandbriefbank.com (under Investors / Financial Reports)</p>
Article 435 (2) CRR: Governance arrangements	<p>Additional information regarding the governance arrangements described:</p> <p>Report of the Supervisory Board in the annual report 2019 of the pbb Group, page 3 et seq.</p> <p>Corporate governance statement (declaration of compliance with the German Corporate Governance Code of the Management Board and Supervisory Board, pursuant to section 161 of the AktG) in the annual report 2019 of the pbb Group, page 102 et seq.</p> <p>Members of the Supervisory Board and the Management Board, the annual report 2019 of the pbb Group, notes, note 82, page 188</p> <p>Compliance statement of the Management Board and the Supervisory Board (Corporate Governance Code) on the pbb website</p> <p>Professional careers of the members of the Management Board and the Supervisory Board</p>	<p>www.pfandbriefbank.com (under Investors / Financial Reports)</p> <p>www.pfandbriefbank.com (under Investors / Mandatory publications)</p> <p>www.pfandbriefbank.com (under the Company / Management Board or the Company / Supervisory Board)</p>

Disclosure Report as of 31 December 2019

Disclosure issue according to part 8 of the CRR	Designation of the separate document	Web link
Article 436 CRR: Scope of application	Additional information regarding the organisational and legal structure of the pbb Group: Note 83 Holdings of pbb and note 84 Country-by-country reporting, annual report 2019 of the pbb Group, page 189	www.pfandbriefbank.com (under Investors / Financial Reports)
Article 437 CRR: Own funds	Additional information regarding balance sheet equity: Annual report 2019 of the pbb Group, page 117 (note Statement of changes of equity), as well as notes, page 138 (note 24 Equity) and page 165 (note 64 Equity)	www.pfandbriefbank.com (under Investors / Financial Reports)
Article 438 CRR: Capital requirements	Additional information concerning the adequacy of internal capital: Internal capital adequacy assessment process (ICAAP) in the annual report 2019 of the pbb Group, risk and opportunity report, page 63 (economic capital for the credit risk according to segments, going-concern approach and economic perspective)	www.pfandbriefbank.com (under Investors / Financial Reports)
Article 439 CRR: Exposure to counterparty credit risk	-	-
Article 440 CRR: Capital buffers	-	-
Article 441 CRR: Indicators of global systemic importance	Not relevant for the pbb Group.	-
Article 442 CRR: Credit risk adjustments	-	-
Article 443 CRR: Unencumbered assets	Additional information regarding the encumbrance of assets described: Publications in accordance with section 28 Pfandbrief Act on the pbb website	www.pfandbriefbank.com (under Investors / Mandatory Publications / Publications in accordance with section 28 Pfandbrief Act)
Article 444 CRR: Use of ECAs	-	-
Article 445 CRR: Market risk	-	-

Disclosure Report as of 31 December 2019

Disclosure issue according to part 8 of the CRR	Designation of the separate document	Web link
Article 446 CRR: Operational risk	-	-
Article 447 CRR: Exposure to equities not included in the trading book	Additional information regarding shareholdings of pbb: Annual report 2019 of the pbb Group, notes, note 83 Shareholdings of pbb, page 189	www.pfandbriefbank.com (under Investors / Financial Reports)
Article 448 CRR: Exposure to interest rate risk on positions not included in the trading book	-	-
Article 449 CRR: Exposure to securitisation positions	-	-
Article 450 CRR: Remuneration policy	Remuneration report in the annual report 2019 of the pbb Group, page 72 et seq.	www.pfandbriefbank.com (under Investors / Financial Reports)
	Remuneration report 2019 on the pbb website (publication in Q2 2020 presumably after conclusion of the remuneration negotiations for 2019)	www.pfandbriefbank.com (under The Company / Corporate Governance / Remuneration Reports)
Article 451 CRR: Leverage	-	-
Article 452 CRR: Use of the IRB approach to credit risk	-	-
Article 453 CRR: Use of credit risk mitigation techniques	-	-
Article 454 CRR: Use of the advanced measurement approaches to operational risk	Not relevant for the pbb Group.	-
Article 455 CRR: Use of internal market risk models	Not relevant for the pbb Group.	-

2 Scope

2.1 Organisational and legal structure

The pbb Group consists mostly of the parent company pbb. pbb is simultaneously the parent company in accordance with Art. 4 (1) CRR of the regulatory group as defined in section 10a of the German Banking Act (KWG) in conjunction with Art. 11 et seq. CRR and is thus responsible for regulatory disclosure requirements. pbb is a stock corporation under German law, registered in the commercial register of the local court of Munich, Germany (HRB 41054).

The Company is headquartered in Munich/Garching; the pbb Group also maintains offices at four additional locations in Germany (Eschborn, Düsseldorf, Hamburg und Berlin). Outside Germany, it is represented at the five locations in London, Madrid, Paris, Stockholm and New York. pbb conducts a large part of its international financing activities via these locations.

Business model and strategy

The strategic business segments of pbb Group are Real Estate Finance (REF) and, additionally, Public Investment Finance (PIF); the focus is on business eligible for inclusion in Pfandbrief cover. The geographic focus is on Europe and the USA. Its significant core markets are Germany, France, the United Kingdom, the Nordic countries and selected Central and Eastern European countries, as well as Spain, the Benelux countries and the US.

Lending is the Group's core business, with a focus on primary client business. Besides traditional financing solutions tailored to clients' needs, the Group offers its clients derivatives for hedging risks associated with lending. pbb does not maintain a trading book for securities or derivatives portfolios held to realise short-term gains.

In the lending business, pbb Group either acts as a sole lender or, particularly for large-volume transactions, cooperates with financing partners. In this regard, the Group has a wide network of banking and other partners, including insurance companies and private equity firms. In this so-called syndicate business, when acting as arranger, the Group takes over the complete coordination between the syndicate members and the borrower or, in the role of an Agent, deals with tasks in connection with the management of syndicated loans.

In addition, pbb Group acts as an underwriter, initially being the sole provider of financing and then selling parts of this loan to interested partners in the context of syndication.

In the course of its digitalisation strategy, pbb Group launched the digital platform CAPVERIANT on the German market in 2018, and on the French market in 2019. CAPVERIANT brings together borrowers and investors in the public investment finance sector, with a focus on the intermediation of budget financing solutions for public-sector authorities. With respect to the loans arranged by CAPVERIANT, pbb normally does not operate as a lender. Only in the case of 'bank-in-the-middle'-products, where an investor cannot act as the primary lender for regulatory reasons, pbb may assume the short-term role of a lender ('fronting bank'). Immediately after the loan has been originated, this role is passed on to the investor.

pbb Group intends to further advance its digital transformation: the chosen approach comprises three main thrusts, focusing on further development of client interfaces, enhancing process efficiency in core business, as well as on new products and business models.

Strategic focus

pbb Group's strategy focuses on sustainable business success. Crucial success factors are the assessment and appropriate pricing of credit risk in the lending business on the one hand, and the access to funding markets at adequate terms on the other. Managing the existing portfolio – so as to identify risks at an early stage and mitigate them by taking appropriate measures – is another important factor.

The Management Board has committed itself to further increasing profitability in 2020. Following the continued expansion of sales activities in the US real estate finance market, pbb Group is pursuing various initiatives in order to broaden the value chain as well as its client groups – also within the framework of digitalisation. Furthermore, pbb Group will not only examine opportunities to digitalise its business – especially in the real estate financing segment – but will also constantly review the options available to increase its process and cost efficiencies.

Internal management system

pbb Group's internal management system is pursuing a sustainable enhancement in value of the Group considering aspects of risks and regulatory requirements. The key objective is to achieve a balanced risk/return ratio. Risks should be compatible with external and internal risk-bearing capacity guidelines generating an adequate return on capital.

Monitoring and steering are based on a consistent and integrated key performance indicator system (KPI system), which assists executives in the management of the Group. The KPI system comprises the dimensions of profitability, growth in the real estate finance portfolio, risk limitation and capital. Regular budget-actual comparisons and related analyses disclose the reasons for any deviations in the key performance indicators. Current market developments, such as the change in interest rate levels, are also displayed. In addition to strategic planning for the Bank as a whole, regular medium-term projections of profitability indicator and (stress) scenario forecasts ensure the management has a comprehensive overview of the Group's future business development.

The internal management system has remained unchanged compared to the previous year. The following financial key performance indicators have been defined. Non-financial key performance indicators are not explicitly managed.

Return on equity after tax

One key profitability indicator is the return on equity after tax. It is calculated by dividing IFRS net income/loss by the average IFRS equity available in the financial year excluding accumulated other comprehensive income (OCI) from cash flow hedge accounting, financial assets at fair value through OCI and additional equity instruments (AT1 capital). Profit or loss before tax is a further financial key performance indicator. The aim is to increase it both by generating higher revenues and through strict cost discipline. Cost discipline and efficiency are monitored using the cost-income ratio, i.e. the ratio of general and administrative expenses to operating income.

Nominal amount for financing

The notional amount of the funding in the Real Estate Finance (REF) segment is a significant factor influencing the future earning power and has therefore been redefined as an additional financial key performance indicator. The financing volume can be controlled, above all, by the volume of new business (including prolongations with maturities of more than one year), which also represent a financial key performance indicator. A present value approach is used for managing and calculating new business.

Risk management based on risk-bearing capacity

pbb Group's capital adequacy process (ICAAP) is based on two approaches concerning risk-bearing capacity: the normative and the economic perspective. Whilst the normative perspective is aimed at the fulfilment of all capital- and liquidity-related legal requirements, supervisory demands and internal objectives, on an ongoing basis, the economic perspective covers all material risks which might threaten the institution's economic viability. Both perspectives are designed to supplement each other, safeguarding pbb Group's ability to survive. The prerequisites for evidencing risk-bearing capacity in the normative perspective are

the ongoing compliance with minimum regulatory requirements over a medium-term horizon, plus evidence of adequate internal capital to cover material risks exceeding such minimum requirements. In the economic perspective, risk-bearing capacity is evidenced by sufficient internal capital being available to cover potential present-value losses. Details concerning the methodology used for analysing risk-bearing capacity, and the results obtained, are provided in chapter 4.3 „Economic capital and risk bearing capacity“.

Common Equity Tier 1 ratio

The CET1 ratio, a key management parameter, is determined on a regular basis; it is calculated by dividing Common Equity Tier 1 (CET1) by risk-weighted assets (RWAs). The Advanced Internal Rating Based Approach (Advanced IRBA) is used to determine regulatory capital requirements for the substantial portion of the real estate portfolio and the credit risk standardised approach (CRSA) for the remaining portfolio.

2.2 Corporate governance principles

Since its IPO in July 2015, pbb has been subject to the German Corporate Governance Code (DCGK) in accordance with section 161 AktG. The compliance statement concerning the German Corporate Governance Code most recently dated 27 February 2020 can be found on the Company's website under Investors / Mandatory Publications / Corporate Governance Code. Any updates of the statement filed after the reporting date can also be found on pbb's website.

Furthermore, please refer to the report of the Supervisory Board as well as the corporate governance statement including the corporate governance report, which are published in the annual report (2019) of the pbb Group and also on pbb's website. These sources are particularly relevant for disclosure requirements as per article 435 (2), letters d and e CRR regarding the risk committee and the information provided to the Management Board and the Supervisory Board, which is also described in chapter 4.1 "General organisation and risk management principles".

Management Board and Supervisory Board executive or supervisory functions

As at the reporting date, pbb's Management Board members hold 4 and pbb's Supervisory Board members hold 24 executive or supervisory functions which are actually carried out. These are shared between the individual members of the Management Board and Supervisory Board as follows:

Figure 2: Management Board and Supervisory Board executive or supervisory functions

Name	Number of actually performed management or supervisory mandate	Number of management or supervisory mandate in accordance with the method referred to Article 91 (3) and (4) of Directive 2013/36/EU
Supervisory Board of pbb as of 31 December 2019		
Dr. Günther Bräunig	4	3
Dagmar Kollmann	5	5
Dr. Jutta Dönges	4	4 ¹⁾
Dr. Thomas Duhnkrack	2	2
Dr. Christian Gebauer-Rochholz	1	1
Georg Kordick	1	1
Joachim Plesser	4	4
Oliver Puhl	2	2
Heike Theißing	1	1
Management Board of pbb as of 31 December 2019		
Andreas Arndt	1	1
Thomas Köntgen	1	1
Andreas Schenk	1	1
Marcus Schulte	1	1
Total	28	27

1) According to the KWG, there are only three mandates because, according to the regulations of section 25d (3) sentence 4 KWG, the mandate at FMS Wertmanagement A&R is not counted.

Disclosure Report as of 31 December 2019

For details of the functions and mandates, please refer to note 82 “Members of the Supervisory and of the Management Board” in the pbb Group’s 2019 annual report.

On 16 August 2019, the ECB approved the fifth mandate (additional mandate) of Mrs. Kollmann which would be inadmissible in accordance with section 25d (3) sentence 1 No. 3 KWG. On the other hand, separate approval is not required for the mandates held by Dr. Bräunig (four) and Dr. Dönges (four) because, in line with the method of counting in accordance with KWG and the “information sheet regarding the members of administrative and regulatory bodies in accordance with KWG and KAGB” of the BaFin, they each hold one management mandate and only two additional supervisory board mandates.

Selection of Management Board and Supervisory Board members

The Supervisory Board has defined specific objectives for its composition in accordance with recommendation C.1 of the DCGK in the version of 16 December 2019 its rules of procedure, and adopted a competence profile for the overall body, which is published on the website of pbb. These objectives have been extended to include a catalogue of criteria for new members to be appointed to the Supervisory Board; this catalogue specifically recognises the company-specific and specialist requirements. In 2019, there were no changes in the structure of the Supervisory Board.

As to the appointment of Management Board or Supervisory Board members, pbb has established lists of criteria which are described in the following. The bank considers that the current officeholders meet these criteria, and the knowledge, skills and expertise of the Management Board and Supervisory Board members are published in the form of CVs on pbb’s website under The Company / Management and The Company / Supervisory Board respectively.

The following catalogues of criteria also form part of a “suitability policy” adopted by the Management Board and Supervisory Board in 2018; this policy implements various requirements, including requirements of the EBA/ESMA guideline 2017/12, and also describes criteria for appointing members of the Management Board and Supervisory Board and also carrying out (regular) suitability checks for such members. The following criteria have to be used for evaluating the individual suitability of a member of the Management Board/Supervisory Board:

- Time requirement: Adequate time for carrying out the functions in the institute
- Compliance with the mandate restriction, in particular in accordance with article. 91 (3) CRD V and section 25d (3) KWG (Supervisory Board) and section 25c (2) KWG (Management Board)
- Adequate knowledge, skills and experience necessary for carrying out all duties
- Good reputation, sincerity and integrity
- Impartiality and independence.

List of criteria for the Management Board

According to section 25c KWG, managers (= members of the Management Board) of an institution must display technical qualifications and reliability, and they must dedicate sufficient time to their tasks. Technical qualifications mean that managers must have sufficient theoretical and practical knowledge in the business area concerned and he or she must have managerial experience.

- Functional competences

Candidates must have a high standard of experience in at least one business unit of pbb, e. g. public investment finance or real estate finance (front or back office), alternatively in corporate or commercial banking and ideally in selected corporate centre functions;

Knowledge of the refinancing of bank business models is an asset;

- Potential candidates for a CFO or CRO position must have acquired professional knowledge in key areas obtained from board positions or important line management functions. This also applies to the capital market/treasury division.
- **Industry competence**

Candidates must have several years of experience in the finance industry, preferably in commercial or asset based banking.
 - **Tenure**

Candidates must be admitted as a manager of a bank or, when they are first appointed to the Management Board, their authorisation must be available without any extended waiting time;

They must have long-term managerial experience obtained from board positions or important line management functions including long-term and broad managerial experience as well as experience in process and restructuring management;

They must display a strong entrepreneurial spirit as well as experience in dealing with entrepreneurial tasks including developing the business model and the strategy and/or performing business management tasks (preferably for a bank).
 - **Technical competences**

According to section 25c KWG, Management Board members are required to have competences in particular in the areas of strategic management, company development, loan responsibility, bank management, sales;

Particularly with regard to lending knowledge and skills, sound judgement of loan decisions is of the essence. In this context, long-standing, qualified and responsible loan decision-making practice is required;

As to bank management, knowledge and experience in the context of profit and risk control as well as methodological knowledge in the various bank management areas is highly relevant.
 - **Interpersonal skills**

High degree of persuasiveness and determination based on thoughtful argumentation;

Respectful and team-oriented leadership approach;

Strong ability to establish and maintain sustainable, trust-based relationships with employees, peers as well as external stakeholders of pbb;

Strong commitment to develop the company along with the ability to identify, implement and communicate required changes;

Credible and trustworthy representative of pbb in public, including relevant (customer) markets.

Competence profile of the Supervisory Board

In accordance with recommendation C.1 of the DCGK (version of 16 December 2019), the Supervisory Board adopted a competence profile for the Supervisory Board which is published on the website of pbb. This contains the following main definitions:

- At least five members of the Supervisory Board, thereof more than three shareholder representatives, shall be independent as set out in recommendation C.6 and C.7 of the DCGK. As recommended by this code, a member of the Supervisory Board shall not be considered to be independent if he/she has a personal or business relationship with pbb, its boards, a controlling shareholder or an affiliated company which may give rise to a material conflict of interest on a more than temporary basis. As to employee representatives, it is assumed that their independence is not affect-

ed by the fact that they hold the position of employee representatives and have an employment relationship with the Company at the same time.

- The Supervisory Board is not permitted to consist of more than two former members of the Management Board. Former members of the Management Board should not chair the Supervisory Board or chair a committee.
- The members of the Supervisory Board should in general not be more than 70 years old, and the period of office of a member of the Supervisory Board should in general end after the end of the ordinary annual general meeting which follows the 70th birthday of the member of the Supervisory Board.
- The maximum duration of service of the members of the Supervisory Board should in general not exceed three full periods of office in accordance with section 102 (1) AktG.
- Compliance with the legal requirements regarding the maximum number of mandates (see section 25d (3) and (3a) KWG) and networking of the committees (see section 25d (7) sentence 4 KWG).
- The Supervisory Board should overall cover all necessary fields of competence which in particular might result from the factors described in the following. These fields of competence should where possible be covered by individual members of the Supervisory Board, whereby at least one member should have the respective competences. These include the following:
 - Corporate strategy and future strategic development
 - Business model/main areas of activity, in particular real-estate know-how
 - Experience with the US financial market
 - Experience on the European financial markets
 - Technological (digital) factors
 - Accounting and auditing in accordance with section 100 (5) AktG/section 25d (9) sentence 3 KWG
 - Risk management
 - Compliance
 - Legal/corporate governance
 - Management and monitoring of peer companies.

List of criteria for the Supervisory Board

According to section 25d KWG, the members of a Supervisory Board of an institution must be reliable, have the expertise required to control, assess and monitor the transactions carried out by the company concerned, and must dedicate sufficient time to their tasks. Candidates shall have the following competences:

- Functional competences
 - Very good knowledge of the banking business as well as extensive, broad entrepreneurial experience;
 - In-depth understanding of annual reports and reports provided to the Supervisory Board as well as of the regulatory environment of banks.
- Industry competences
 - Long-term experience in the financial industry, financial administration or control; several years of experience in a division of pbb are an asset.

- Tenure

Long-standing practice in managing a company or an internationally operating bank / organisation / corporation or many years of practical experience in a leading position of a large company or a leading public authority position.

- Interpersonal skills

Very good advisory skills, persuasiveness as well as diplomatic skills as well as ability to build confidence along with responsible performance of supervisory tasks.

- Other experience

- For the Chairman of the Supervisory Board:

Candidates must be admitted as a manager of a bank as defined by KWG and must have bank management experience acquired as a chairman of the board or have long-term experience as a board member

- For the Chairman of the Audit Committee:

Special expertise in auditing or annual accounts auditing as defined by section 100 (5) AktG

- For the Chairman of the Risk Management and Liquidity Strategy Committee:

Special expertise in the field of loans.

Member diversity strategy

Both Supervisory Board and Management Board consider that diversity matters when filling management positions, and they aim at an appropriate representation of the underrepresented gender (as required by sections 76 (4), 111 (5) AktG). Accordingly, the Management Board and Supervisory Board in 2018 adopted a guideline regarding diversity in the Management Board and Supervisory Board. Every candidate must be reliable and must be adequately qualified. In addition to the specialist skills with regard to sector and management experience, the candidates should also be trustworthy personalities of moral integrity. The requirements regarding the independence of the mandate holders also have to be taken into consideration when selecting suitable candidates. If there are several suitable candidates, the objective of achieving maximum diversity will also be taken into consideration. Where possible, the composition of the bodies should also reflect the international activity of the pbb Group and the composition of the workforce. There are specific criteria regarding age and gender for the composition of the Supervisory Board. The members of the Management Board should in general not be more than 60 years old. For recognising the underrepresented gender, the Supervisory Board has defined the following criteria which are to be met by 30 June 2022:

- Target percentage of women in the Supervisory Board: 30 %
- Target percentage of women in the Management Board: 20 %

As of 31 December 2019, the percentage of women in the Supervisory Board was unchanged at 33.3 % (compared with the previous-year reference date). After the appointment of Marcus Schulte on 1 January 2019, the composition of the Management Board remained unchanged in the remainder of the year, and the percentage of women in the Management Board continues to be 0 %. The Supervisory Board continues to undertake to take account of the underrepresented gender for appointing subsequent persons to the Management Board (assuming appropriate suitability and qualifications). However, in view of the durations of the service agreements of the members of the Management Board which are due to run at least until May 2021, and also in view of the fact that Marcus Schulte joined the Management Board as of 1 January 2019 following a two-year phase of familiarisation, any change to the existing situation in the immediate future can only be managed to a limited extent. For further details regarding the diversity strategy, please refer to the governance statement in accordance with section 289f HGB printed in the annual report 2019.

2.3 Remuneration policy

Information on the remuneration policy and remuneration practice as per article 450 CRR can be found in the section "Remuneration report" of the 2019 annual report of the pbb Group. In addition, the quantitative remuneration information regarding the employees will probably be disclosed, after the conclusion of the remuneration negotiations for 2019, in Q2 2020 in the remuneration report on the website of the pbb Group under The Company / Corporate Governance / Remuneration Reports.

2.4 Regulatory and accounting consolidation

Scope of consolidation

According to part 8 of CRR, companies which form part of the Group as defined in section 10a KWG in conjunction with article 11 et seq. CRR (regulatory scope of consolidation) must be considered in the Disclosure Report. By contrast, the accounting scope of consolidation is based on International Financial Reporting Standards (IFRS) as shown in the annual report of the pbb Group. As of 31 December 2019, there is no difference between the regulatory scope of consolidation according to articles 18 to 24 CRR and the accounting scope of consolidation for IFRSs consolidated financial statements as was the case in the previous year.

According to article 436, letters a and b CRR in conjunction with EU LI3 of the EBA/GL/2016/11 guidelines, the following table "Regulatory and accounting scope of consolidation by entity" shows the regulatory and accounting scope of consolidation of pbb's subsidiaries. The various subsidiaries are divided according to the company type in line with the definitions provided in article 4 CRR in conjunction with section 1 KWG.

Table 1: Regulatory and accounting scope of consolidation by entity (EU LI3)

Name of the entity along with classification in acc. with KWG	Method of accounting consolidation (IFRS)	Method of regulatory consolidation				Description of the entity / Purpose of business
		Full consolidation	Proportional consolidation	Neither consolidated nor deducted	Deducted	
	a	b	c	d	e	f
Credit institutions						
1 Deutsche Pfandbriefbank AG Munich, Germany	Full consolidation	x				Credit institution
Financial enterprises						
2 IMMO Invest Real Estate GmbH Munich, Germany	Full consolidation	x				Salvage acquisition
Ancillary banking services enterprises						
3 Immo Immobilien Management Beteiligungsgesellschaft mbH in Liquidation, Munich, Germany	Full consolidation	x				Real estate company
4 CAPVERIANT GmbH Munich, Germany	Full consolidation	x				Marketplace of municipal finance
Other enterprises						
none						

As at the reporting date, the regulatory scope of consolidation comprised pbb as the parent company of the group of institutions as well as three subordinate companies. The total regulatory capital and the consolidated exposures according to CRR are determined by the pbb Group based on the IFRS financial statements as per section 10a (5) KWG. pbb prepared its consolidated financial statements as of 31 December 2019 in line with Regulation (EC) No. 1606/2002 of the European Parliament and of the Council of 19 July 2002 based on the International Financial Reporting Standards (IFRS). The separate financial statements of the consolidated companies are included in the consolidated financial statements of pbb based on uniform accounting and valuation principles. As was the case in the previous year, the pbb Group did not have any non-consolidated subsidiaries as of 31 December 2019.

Disclosure Report as of 31 December 2019

Changes in the financial year

In 2019, there were no changes in the regulatory or in the accounting scope of consolidation of the pbb Group.

Derogation provided for in article 19 (1) CRR

As of 31 December 2019, the pbb Group did not utilise the exceptional regulation of article 19 (1) CRR in conjunction with section 31 (3) KWG for any subsidiary.

Special-purpose entities

As of 31 December 2019, as was also the case on the corresponding previous-year reference date, the pbb Group did not utilise any special-purpose entity.

Subsidiaries with capital deficits

A capital deficit is the amount by which the own funds of a subsidiary which is not consolidated fall below the regulatory capital as per article 92 CRR in conjunction with article 465 CRR. As of the reporting date 31 December 2019, and as was the case in the previous year, the pbb Group did not have any subsidiaries which reported a capital deficit in accordance with article 436 letter d CRR and for which the equity participation is deducted from the liable equity of the parent company (deduction method).

Transfer of own funds or repayment of liabilities

Within the pbb Group, there are no major actual or legal obstacles to the immediate transfer of own funds or the repayment of liabilities by the parent company. pbb, which is critical for the financial stability of the group, is headquartered in Germany. As in the previous year, no transfer of own funds and no repayment of liabilities as defined by article 7 (1), letter a CRR took place in the reporting year 2019.

Exposure values and reported book values

For disclosure pursuant to part 8 of the CRR, the regulatory scope of consolidation pursuant to articles 18 to 24 CRR described above is decisive. The two following tables in accordance with article 436 (b) CRR in conjunction with EU LI1, EU LI2 and EU LIA of the guidelines EBA/GL/2016/11 show (for each of the balance sheet items in the financial statements) the reconciliation of reported carrying amounts (IFRS) in accordance with the pbb consolidated financial statements as of 31 December 2019 in accordance with the accounting scope of consolidation with the regulatory exposure values (exposure at default; EAD) according to the COREP report of own funds and own funds requirements using the regulatory scope of consolidation. Details are also provided of how the individual balance sheet items are distributed over the various risk types which are relevant for regulatory capital-backing purposes.

Disclosure Report as of 31 December 2019

Table 2: Regulatory and accounting consolidation and risk type reconciliation (EU L11)

	Assets and liabilities of the consolidated balance sheet in € million	Carrying amounts (IFRS) as reported in published consolidated financial statements 31.12.2019	Carrying amounts (IFRS) under scope of regulatory consolidation 31.12.2019	Carrying amounts (IFRS) of positions subject to the underlying risk framework				
				Credit risk	Counterparty credit risk	Securitisation	Market risk	Not subject to capital requirements or subject to deduction from capital
		a	b	c	d	e	f	g
1	Assets							
2	Cash reserve	1,141	1,141	1,141	-	-	2	-
3	Financial assets at fair value through profit or loss	1,306	1,306	589	717	-	75	-
3a	Positive fair values of stand-alone derivatives	717	717	-	717	-	59	-
3b	Debt securities	130	130	130	-	-	-	-
3c	Loans and advances to customers	456	456	456	-	-	16	-
3d	Shares in investment funds qualified as debt instruments	3	3	3	-	-	-	-
4	Financial assets at fair value through other comprehensive income	1,696	1,696	1,696	-	-	34	-
4a	Debt securities	1,325	1,325	1,325	-	-	34	-
4b	Loans and advances to other banks	15	15	15	-	-	-	-
4c	Loans and advances to customers	356	356	356	-	-	-	-
5	Financial assets at amortised cost after credit loss allowances	50,224	50,224	48,388	1,836	-	9,040	-
5a	Financial assets at amortised cost before credit loss allowances	50,351	50,351	48,515	1,836	-	9,098	-
5aa	Debt securities	7,679	7,679	7,679	-	-	875	-
5ab	Loans and advances to other banks	2,356	2,356	574	1,782	-	59	-
5ac	Loans and advances to customers	40,316	40,316	40,262	54	-	8,164	-
5b	Credit loss allowances on financial assets at amortised cost	-127	-127	-127	-	-	-58	-
6	Positive fair values of hedge accounting derivatives	2,199	2,199	-	2,199	-	11	-
7	Valuation adjustment from portfolio hedge accounting (assets)	19	19	19	-	-	-	-
8	Tangible assets	45	45	45	-	-	-	-
9	Intangible assets	39	39	-	-	-	-	39
10	Other assets	41	41	16	-	-	-	25
11	Current income tax assets	22	22	22	-	-	-	-
12	Deferred income tax assets	90	90	84	-	-	-	6
13	Total assets	56,822	56,822	52,000	4,752	0	9,162	70

Disclosure Report as of 31 December 2019

	Assets and liabilities of the consolidated balance sheet in € million	Carrying amounts (IFRS) as reported in published consolidated financial statements 31.12.2019	Carrying amounts (IFRS) under scope of regulatory consolidation 31.12.2019	Carrying amounts (IFRS) of positions subject to the underlying risk framework				Not subject to capital requirements or subject to deduction from capital
				Credit risk	Counterparty credit risk	Securitisation	Market risk	
		a	b	c	d	e	f	g
14	Liabilities and equity							
15	Financial liabilities at fair value through profit or loss	762	762	-	762	-	46	-
15a	Negative fair values of stand-alone derivatives	762	762	-	762	-	46	-
16	Financial liabilities measured at amortised cost	49,741	49,741	-	1,319	-	4,842	48,422
16a	Liabilities to other banks	4,195	4,195	-	1,052	-	98	3,143
16b	Liabilities to customers	23,985	23,985	-	267	-	65	23,718
16c	Bearer bonds	20,858	20,858	-	-	-	4,679	20,858
16d	Subordinated liabilities	703	703	-	-	-	-	703
17	Negative fair values of hedge accounting derivatives	2,562	2,562	-	2,562	-	182	-
18	Valuation adjustment from portfolio hedge accounting (liabilities)	81	81	-	-	-	-	81
19	Provisions	263	263	8	-	-	-	255
20	Other liabilities	130	130	-	-	-	-	130
21	Current income tax liabilities	47	47	-	-	-	-	47
22	Liabilities	53,586	53,586	8	4,643	0	5,070	48,935
23	Equity	3,236	3,236	-	-	-	-	3,236
24	Total liabilities and equity	56,822	56,822	8	4,643	0	5,070	52,171

Disclosure Report as of 31 December 2019

As of the reporting date, the pbb Group had exactly the same level of regulatory and accounting consolidation. There are no differences due to a different composition of the consolidation groups.

In accordance with the business model of the pbb Group, which focuses on commercial real estate financing and additionally public investment financing, the assets are primarily subject to a capital requirement for credit risks (including counterparty credit risks). In addition, transactions concluded in foreign currency are subject to an equity requirement for market risks (risk of changes in foreign exchange rates). These assets/liabilities are accordingly allocated to more than one risk type. The pbb Group has no trading book for security and derivative portfolios with short-term profit taking, which is why the transactions with regard to the market risk are exclusively subject to the capital requirement for the foreign currency risk of the banking book.

The regulations set out in part 3, title II, chapter 6 "Counterparty credit risk" of the CRR for calculating the exposure value for the counterparty credit risk are applied by the pbb Group for derivative transactions; it uses the market valuation in accordance with article 274 CRR for this purpose. On the other hand, for security financing transactions (security lending/repo transactions), the pbb Group uses the regulations for credit risk mitigation (for financial securities) in accordance with chapter 4 of the CRR (comprehensive method according to article 223 et seq. CRR); this is the reason why these transactions are not allocated to the counterparty credit risk (column d) in the above-mentioned table EU LI1.

In connection with its derivative transactions, the pbb Group uses the standard framework agreements, e.g. German framework agreement for financial futures (DRV) or ISDA Master Agreement (ISDA) including the corresponding security agreements (e.g. German Credit Support Annex to the DRV or ISDA Credit Support Annex). These framework agreements contain netting clauses for the event of premature termination of the transactions (close-out netting), permitting the netting of mutual risks. Within the framework of the netting process, the credit risk is reduced to a single net receivable due from the relevant contracting party. As a consequence, the counterparty credit risk in the table above refers to both assets and liabilities. The netting of mutual risks in the course of the regulatory netting process relates to the asset items "Financial assets at fair value through profit or loss" (positive market values of the stand-alone derivatives), "Positive fair values of hedging derivatives" (positive fair values of hedge accounting derivatives) and "Financial assets measured at amortised cost" (loans and advances to other banks/customers, cash collateral provided) as well as the liabilities "Financial liabilities at fair values through profit or loss (negative market values of stand-alone derivatives), "Negative fair values of hedging derivatives" (negative fair values of hedge accounting derivatives) and "Financial liabilities measured at amortised cost" (liabilities to other banks/customers, cash collateral received).

Whereas the above table EU LI1 focuses on the reconciliation of the balance sheet carrying amounts from the IFRS of the consolidated financial statements with the regulatory scope of consolidation as well as the distribution over the risk types relevant for regulatory purposes, the following table EU LI2 focuses on the reconciliation of these carrying amounts (IFRS) with the regulatory risk items (Exposure of Default, EAD). The reconciliation process focuses on the main reasons for the differences between the figures.

The assets in accordance with the pbb consolidated financial statements (IFRS) as of 31 December 2019 amounted to € 56,822 million (line 1). The regulatory exposure parameters are based on the IFRS consolidated financial statements, with due consideration being given to regulatory adjustments. The exposure parameters amounted to € 55,581 million as of 31 December 2019 (line 12).

Disclosure Report as of 31 December 2019

Table 3: Differences between regulatory exposure amounts and IFRS carrying amounts (EU LI2)

All figures in € million

Carrying amounts (IFRS) vs. regulatory risk positions	Total	Positions according to the underlying risk framework:			
		Credit risk	Counterparty credit risk	Securitisation	Market risk
		a	b	c	d
1 Assets Carrying amounts (IFRS) under the scope of regulatory consolidation (as per template EU LI1)	56,822	52,000	4,752	-	9,162
2 Liabilities and equity Carrying amounts (IFRS) under the regulatory scope of consolidation (as per template EU LI1)	56,822	8	4,643	-	5,070
3 Total net amount (IFRS) under the regulatory scope of consolidation	-	51,922	109	-	4,092
4 Off-balance-sheet amounts ¹⁾	4,366	2,844	-	-	-
5 Differences regarding off-balance-sheet items due to the regulatory recognition of credit conversion factors (CCF) for committed free lines and the regulatory non-recognition of the obligations of bank levies	-1,522	-	-	-	-
6 Differences due to the risk-mitigating recognition of recognised contractual netting agreements for derivative financial instruments, taking account of the add-ons for the potential future replacement value regarding derivative transactions (regulatory add-on)	-4,230	-	-4,230	-	-
7 Differences due to default risk in securities financing transactions (security lending and repo transactions) in accordance with comprehensive method for financial securities pursuant to Article 223 et seq. CRR	2	2	-	-	-
8 Differences due to the consideration of credit loss allowances and provisions in lending business from the application of the internal rating-based approach (IRBA) for credit risk	103	103	-	-	-
9 Differences resulting from the calculation of the net foreign currency position in accordance with the market risk standardised approach pursuant to Article 325 et seq. CRR	-	-	-	-	-9,014
10 Differences due to "prudential filters" calculation of additional value adjustments for fair value-based financial instruments (additional value adjustments; AVA)	-	-	-	-	-
11 Other (e.g. deduction items from equity)	40	110	-	-	-
12 Exposure amounts considered for regulatory purposes ²⁾	55,581	55,059	522	0	148

1) Off-balance sheet items are shown in column (a) before and in columns (b) to (e) after recognition of the credit conversion factor (CCF).

2) Regulatory exposure values (exposure at default; EAD)

Disclosure Report as of 31 December 2019

The main reasons for the differences between the carrying amounts (IFRS) in accordance with the pbb consolidated financial statements according to the regulatory consolidation group and the regulatory exposure parameters (EAD) according to the regulatory consolidation group are as follows:

- The recognition of off-balance-sheet items (lines 4 and 5) - contingent liabilities from guarantees and warranty agreements as well as other obligations arising from irrevocable loan commitments - after taking account of credit conversion factors (CCF) and also, in the credit risk standardised approach (CRSA), after taking account of credit risk adjustments (provisions).

In the pbb Group, irrevocable loan commitments are the most significant part of off-balance-sheet items. This includes all obligations of a lender who extend a loan at a later date and can thus become a credit risk. These are mainly loans which are not fully paid out.

- The risk-mitigating recognition of accepted contractual netting agreements for derivative financial instruments (line 6), taking account of the add-ons for the potential future replacement value (regulatory add-on).

On the balance sheet, the derivatives (with the exception of balance sheet netting of derivatives concluded with Eurex Clearing) cannot be netted because they have different conditions (e.g. different maturities or currency underlyings). The collateral agreements (collateral which is received or provided) also cannot be netted with the derivatives on the balance sheet.

- The netting of the counterparty credit risk in the case of security financing transactions (security lending and repo transactions) in accordance with the financial collateral comprehensive method as detailed in article 223 et seq. CRR (line 7). For regulatory purposes, not only the credit risk but also the counterparty credit risk are taken into consideration for the pledged securities which continue to form part of the balance sheet assets.
- The netting of impairments on financial assets (stage 1 to 3) and provisions in lending business for risk positions for which the internal ratings-based approach (IRBA) is used (line 8). In contrast to the credit risk standardised approach (CRSA), credit risk adjustments are not deducted from the balance sheet carrying amount in the IRB approach, and instead are taken into account in the value adjustment comparison with the expected loss amounts (EL).
- Differences in the valuations resulting from the calculation of the net foreign currency position according to the market risk standardised approach in accordance with article 325 et seq. CRR (line 9). The regulatory foreign currency risk as +shown in line 12 of the table EU LI2 is calculated on the basis of the present values of the respective assets/liabilities, whereby various nettings are applied between asset and liability positions in one currency, whereas the balance sheet carrying amounts according to lines 1 and 2 of the table show the respective assets and liabilities in foreign currency.
- Items which are deducted from equity, such as intangible assets or a portion of the deferred tax assets (deferred tax assets which are dependent on future profitability and which do not result from temporary differences) are not included in the exposure values. They are included in the previous table under the item Other (line 11).

On the other hand, additional valuation adjustments (AVA) pursuant to article 34 CRR in conjunction with article 105 CRR with regard to conservative valuation of financial instruments as well as so-called "prudential filters" pursuant to articles 32, 33 and 35 CRR do not have any impact on the carrying amounts (IFRS) or the regulatory exposure values. These regulatory adjustments settle the balance sheet equity as determined by IFRS and lead to an increase/decrease in the regulatory capital. Further information can be found in the following chapter 3.1 "Structure of own funds".

3 Own funds and assets

3.1 Structure of own funds

The regulatory own funds which are relevant for compliance with the regulatory capital requirements and thus for the capital backing for the risk types credit risk (including counterparty credit risk), market risk, operational risk, settlement risk and CVA risk are determined in accordance with the regulations of part 2 of the CRR. Regulatory own funds consist of common equity tier 1 (CET1) capital, additional tier 1 (AT1) capital as well as tier 2 (T2) capital.

For calculating its own funds, the pbb Group takes account of the requirements of prudent valuation of the assets recognised at fair value in accordance with article 34 CRR in conjunction with article 105 CRR. The pbb Group uses the simplified approach in accordance with article 4 et seq. of the Delegated Regulation (EU) 2016/101. Institutions are permitted to use this approach if the sum of the absolute value of assets and liabilities recognised at fair value in accordance with article 4 (1) less the possibility of offsetting pursuant to article 4 (2) of the EU regulation is below the threshold value of € 15 billion. For the pbb Group, this amount was € 5.7 billion as of the reporting date (31 December 2018: € 6.2 billion).

The remainder of this chapter describes the own fund information in accordance with article 437 CRR in conjunction with the Implementing Regulation (EU) No. 1423/2013 for the pbb Group on a consolidated basis.

For the pbb Group, the following table regarding the structure of own funds in accordance with article 437 (1) letter d CRR shows the type and amounts of the elements of own funds as well as the equity ratios as of the reference date 31 December 2019, in each case after and before deduction of the dividend of € 0.90 per eligible share originally proposed by the Management Board and Supervisory Board.

On 3 April 2020, the Management Board and Supervisory Board of pbb decided to withdraw the dividend proposal for the financial year of € 0.90 per eligible share which was published on 4 March 2020. pbb is thus following the recommendation of the ECB and BaFin for all SSM banks (single supervisory mechanism) not to pay dividends for the financial year 2019 at all or not before 1 October 2020. It is thus facing up to the particular challenges associated with the COVID-19 pandemic, and is making its contribution towards stabilising the situation.

The Management Board and Supervisory Board reserve the right to take advantage of the possibility provided by the ECB of reassessing the situation of the market after 1 October 2020 and - when there is greater certainty regarding decision-making in relation to the impact of the COVID-19 pandemic - of submitting a new dividend proposal to the annual general meeting.

pbb is adhering to the dividend policy which was published at the beginning of March 2020 and which, in view of the exceptional situation facing the global economy, is subject to being constantly reviewed.

In the previous year (June 2019), a dividend of € 134 million, equivalent to € 1.00 per eligible share, was paid out to the shareholders pursuant to a resolution of the annual general meeting of pbb.

Disclosure Report as of 31 December 2019

Table 4: Structure of own funds

All figures in € million, unless otherwise stated

No.	Capital instruments pbb Group	31.12.2019 ¹⁾	31.12.2019 ²⁾	31.12.2018 ³⁾
Common Equity Tier 1 (CET1) capital: Instruments and reserves				
1	Capital instruments and the related share premium accounts	2,017	2,017	2,017
1a	Of which: Subscribed capital	380	380	380
1b	Of which: Capital reserve	1,637	1,637	1,637
2	Retained earnings	966	846	760
3	Accumulated other comprehensive income (and other reserves)	-45	-45	3
3a	Funds for general banking risk	-	-	-
4	Amount of qualifying items referred to in Article 484 (3) and the related share premium accounts subject to phase out from CET1	-	-	-
5	Minority Interests (amount allowed in consolidated CET1)	-	-	-
5a	Independently reviewed interim profits net of any foreseeable charge or dividend	-	-	45
6	Common Equity Tier 1 (CET1) capital before regulatory adjustments	2,938	2,817	2,825
Common Equity Tier 1 (CET1) capital: regulatory adjustments				
7	Additional value adjustments (negative amount)	-6	-6	-6
8	Intangible assets (net of related tax liability) (negative amount)	-39	-39	-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)	-6	-6	-5
11	Fair value reserves related to gains or losses on cash flow hedges	12	12	1
12	Negative amounts resulting from the calculation of expected loss amounts	-59	-59	-53
13	Any increase in equity that results from securitised assets (negative amount)	-	-	-
14	Gains or losses on liabilities valued at fair value resulting from changes in own credit standing	-4	-4	-6
15	Defined-benefit pension fund assets (negative amount)	-	-	-
16	Direct and indirect holdings by an institution of own CET1 instruments (negative amount)	-	-	-
17	Direct, indirect and synthetic 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)	-	-	-
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 (not more than 10% and net of eligible short positions) (negative amount)	-	-	-

Disclosure Report as of 31 December 2019

All figures in € million, unless otherwise stated

No.	Capital instruments pbb Group	31.12.2019 ¹⁾	31.12.2019 ²⁾	31.12.2018 ³⁾
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 (more than 10% and net of eligible short positions) (negative amount)	-	-	-
20	Empty Set in the EU	-	-	-
20a	Exposure amount of the following items which qualify for a risk weight of 1.250%, where the institution opts for the deduction alternative	-	-	-
20b	Of which: qualifying holdings outside the financial sector (negative amount)	-	-	-
20c	Of which: securitisation positions (negative amount)	-	-	-
20d	Of which: free deliveries (negative amount)	-	-	-
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)	-	-	-
22	Amount exceeding the 15% threshold (negative amount)	-	-	-
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	-	-	-
24	Empty Set in the EU	-	-	-
25	Of which: deferred tax assets arising from temporary differences	-	-	-
25a	Losses for the current financial year (negative amount)	-	-	-
25b	Foreseeable tax charges relating to CET1 items (negative amount)	-	-	-
26	Security to be deducted for the Deposit Protection Fund (negative amount)	-25	-25	-20
27	Qualifying AT1 deductions that exceed the AT1 capital of the institution (negative amount)	-	-	-
28	Total regulatory adjustments to Common equity Tier 1 (CET1)	-127	-127	-127
29	Common Equity Tier 1 (CET1) capital	2,811	2,690	2,698
Additional Tier 1 (AT1) capital: Instruments and reserves				
30	Capital instruments and the related share premium accounts	298	298	298
31	Of which: classified as equity under applicable accounting standards	298	298	298
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	-	-	-
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	-	-	-
35	Of which: instruments issued by subsidiaries subject to phase out	-	-	-

Disclosure Report as of 31 December 2019

All figures in € million, unless otherwise stated

No.	Capital instruments pbb Group	31.12.2019 ¹⁾	31.12.2019 ²⁾	31.12.2018 ³⁾
36	Additional Tier 1 (AT1) capital before regulatory adjustments	298	298	298
	Additional Tier 1 (AT1) capital: regulatory adjustments			
37	Direct and indirect holdings by an institution of own AT1 Instruments (negative amount)	-	-	-
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)	-	-	-
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 (not more than 10% and net of eligible short positions) (negative amount)	-	-	-
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 (more than 10% and net of eligible short positions) (negative amount)	-	-	-
41	Empty Set in the EU	-	-	-
42	Qualifying T2 deductions that exceed the T2 capital of the institution (negative amount)	-	-	-
43	Total regulatory adjustments to Additional Tier 1 (AT1) capital	0	0	0
44	Additional Tier 1 (AT1) capital	298	298	298
45	Tier 1 capital (T1 = CET1 + AT1)	3,109	2,988	2,996
	Tier 2 (T2) capital: Instruments and reserves			
46	Capital instruments and the related share premium accounts	624	624	643
47	Amount of qualifying items referred to in Article 484 (5) and the related share premium accounts subject to phase out from T2	-	-	-
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	-	-	-
49	Of which: instruments issued by subsidiaries subject to phase out	-	-	-
50	Credit risk adjustments	-	-	-
51	Tier 2 (T2) capital before regulatory adjustments	624	624	643
	Tier 2 (T2) capital: regulatory adjustments			
52	Direct and indirect holdings by an institution of own T2 instruments and subordinated loans (negative amount)	-	-	-
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)	-	-	-
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 (not more than 10% and net of eligible short positions) (negative amount)	-	-	-

Disclosure Report as of 31 December 2019

All figures in € million, unless otherwise stated

No.	Capital instruments pbb Group	31.12.2019 ¹⁾	31.12.2019 ²⁾	31.12.2018 ³⁾
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 (more than 10% and net of eligible short positions) (negative amount)	-	-	-
56	Empty Set in the EU	-	-	-
57	Total regulatory adjustments to Tier 2 (T2) capital	0	0	0
58	Tier 2 (T2) capital	624	624	643
59	Total capital (TC = T1 + T2)	3,733	3,612	3,639
60	Total risk weighted assets (RWA)	17,721	17,721	14,587
Capital ratios and buffers				
61	Common Tier 1 equity ratio (as a percentage of risk exposure amount)	15.9%	15.2%	18.5%
62	Tier 1 capital ratio (as a percentage of risk exposure amount)	17.5%	16.9%	20.5%
63	Total capital ratio (as a percentage of risk exposure amount)	21.1%	20.4%	24.9%
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)	2.836%	2.836%	2.064%
65	Of which: capital conservation buffer requirement	2.500%	2.500%	1.875%
66	Of which: countercyclical buffer requirement	0.336%	0.336%	0.189%
67	Of which: systemic risk buffer requirement	-	-	-
67a	Of which: Global Systemically Important Institution (G-SII) or Other Systemically Important Institution (O-SII) buffer	-	-	-
68	Common Equity Tier 1 available to meet buffers (as a percentage of risk exposure amount)	11.4%	10.7%	14.0%
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 (not more than 10% and net of eligible short positions)	-	-	-
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 (more than 10% and net of eligible short positions)	-	-	-
74	Empty Set in the EU	-	-	-

Disclosure Report as of 31 December 2019

All figures in € million, unless otherwise stated

No.	Capital instruments pbb Group	31.12.2019 ¹⁾	31.12.2019 ²⁾	31.12.2018 ³⁾
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)	84	84	81
	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)	-	-	-
77	Cap on inclusion of credit risk adjustments in T2 under standardised approach	32	32	6
78	Credit risk adjustments included in T2 in respect of exposures subject to internal ratings-based approach (prior to the application of the cap)	-	-	-
79	Cap for inclusion of credit risk adjustments in T2 under internal ratings-based approach	83	83	77
	Capital instruments subject to phase-out arrangements (only applicable between 1 Jan 2014 and 1 Jan 2022)			
80	Current cap on CET1 instruments subject to phase out arrangements	-	-	-
81	Amount excluded from CET1 due to cap (excess over cap after redemptions and maturities)	-	-	-
82	Current cap on AT1 instruments subject to phase out arrangements	-	-	-
83	Amount excluded from AT1 due to cap (excess over cap after redemptions and maturities)	-	-	-
84	Current cap on T2 instruments subject to phase out arrangements	-	-	-
85	Amount excluded from T2 due to cap (excess over cap after redemptions and maturities)	-	-	-

1) On 3 April 2020, the Management Board and Supervisory Board followed the recommendation of the ECB and the BaFin and decided initially not to distribute any dividends for the financial year 2019 but to reserve the right to adopt a further resolution in this respect after 1 October 2020. In this column, the regulatory own funds are calculated without deducting the originally proposed dividend of € 0.90 per eligible share, or € 121 million in total.

2) For information purposes, this column shows the calculation of the regulatory own funds after deduction of the originally proposed dividend of € 0.90 per eligible share, or € 121 million in total.

3) According to adopted annual financial statements 2018 and appropriation of profits.

Disclosure Report as of 31 December 2019

The elements of own funds and equity ratios have been calculated according to the requirements of the CRR, and are based on the IFRS consolidated financial statements of the pbb Group, with due consideration given to the regulatory adjustments. pbb is directly or indirectly the main shareholder at the participations which are included in the regulatory scope of consolidation. The basis for the own funds listed in the table is the COREP notification of own funds and own funds requirements of the pbb Group as of 31 December 2019.

Tier 1 capital

Regulatory tier 1 capital in accordance with article 25 CRR consists of common equity tier 1 (CET1) capital and additional tier 1 (AT1) capital. It is based on the own funds of € 3,236 million according to IFRS (31 December 2018: € 3,257 million), modified by regulatory adjustments. The composition of balance sheet own funds according to IFRS is explained in the annual report as of 31 December 2019 of the pbb Group, note 64 "Equity".

Common equity tier 1 capital

As of 31 December 2019, the conditions for common equity tier 1 capital according to articles 26 to 50 CRR were applicable.

The subscribed capital (share capital) of pbb amounted to approx. € 380 million as of 31 December 2019 (unchanged), and consisted of 134,475,308 no-par-value ordinary bearer shares with a computed share in the subscribed capital (share capital) of approximately € 2.83 per share. pbb did not own any of its own shares during the financial year 2019.

In addition to the subscribed capital (share capital), the common equity tier 1 capital consists of the capital reserve of € 1,637 million, the retained earnings of € 966 million, and the cumulative other comprehensive income of € -45 million. The common equity tier 1 capital before regulatory adjustments and after deduction of the dividend of € 0.90 per eligible share originally proposed by the Management Board and Supervisory Board amounted to € 2,938 million.

Regulatory adjustments

Various deductions totalling € 127 million which are required in the CRR are deducted from the common equity tier 1 (CET1) capital before regulatory adjustments of € 2,938 million:

- Valuation adjustments based on the requirements of prudent valuation of assets recognised at fair value amounting to € 6 million are deducted in full from common equity tier 1 capital.

The prudent valuation has to be created in accordance with article 34 CRR. In accordance with article 4 of the Delegated Regulation (EU) 2016/101, institutions with fair valued items up to a limit of € 15 billion (after deducting items which are not relevant for equity) may use the simplified approach. The pbb Group utilises this option. In accordance with article 5 of the delegated regulation, a flat amount of 0.1 % of portfolios measured at fair value is deducted (again after deducting items which are not relevant for equity).

- In accordance with article 37 CRR, the intangible assets (such as purchased and internally generated software) of € 39 million have to be deducted in full from common equity tier 1 capital.
- As of 31 December 2019, there were deductions of € 6 million from CET1 in relation to deferred tax assets which did not result from temporary differences (after netting in the balance sheet with the deferred tax liabilities). In accordance with article 48 (4) CRR, risk weighting is applied in the standardised approach for credit risk to the deferred tax assets of € 90 million which result from temporary differences.
- In accordance with article 33 CRR, the cash flow hedge reserve of € -12 million still included in cumulative other comprehensive income is completely eliminated (regulatory adjustment € +12 million).

As was the case in the previous year, no derivatives were designated in the cash flow hedge as of 31 December 2019. The cash flow hedge reserve remaining from designations is reversed to reflect the occurrence of the hedged cash flows of the underlyings.

Disclosure Report as of 31 December 2019

- If an impairment deficit relating to the volume of impairments (stage 1 to stage 3) occurs in relation to the expected loss, article 159 CRR requires that this deficit has to be deducted from common equity tier 1 capital for banks which use the internal ratings-based approach (IRBA). The deficit as of 31 December 2019 amounted to € 59 million.
- Profits and losses of € 4 million which result from the institution's own credit risk in relation to derivative liabilities measured at fair value (debt value adjustment, DVA) are deducted from the common equity tier 1 capital. This deduction requirement is based on article 33 (1) letter c CRR.
- The collateral payments of € 25 million to be deducted from CET1 comprise the European bank levy payable to the BaFin as the national resolution authority as well as the payments made to the compensation scheme of German banks (statutory deposit protection) and the deposit protection fund of the private banks in the Bundesverband der deutschen Banken (BdB - Federal Association of German Banks).

In total, the common equity tier 1 capital (CET1) of the pbb Group as of 31 December 2019 – before deduction of the dividend originally proposed by the Management Board and Supervisory Board – amounts to € 2,811 million (31 December 2018: € 2,698 million).

Additional tier 1 capital

The tier 1 capital of the pbb Group comprises the common equity tier 1 capital (CET1) as well as additional tier 1 capital (AT1) which meets the requirements set out in articles 52 to 54 CRR.

The additional tier 1 capital comprises subordinate bearer bonds with a total nominal amount of € 300 million and with an initial interest rate of 5.750 % per annum; the bonds were issued by pbb in April 2018, and are available without any repayment incentives. For the balance sheet, the AT1 capital is also classified as own funds in accordance with IFRS as there is no obligation for repayment and for ongoing servicing. It is shown under the liabilities item "Additional equity instruments (AT1)". In April 2019, a coupon payment of € 18 million was made in relation to the AT1 capital; this reduced the retained earnings.

Table 5: Additional tier 1 (AT1) capital – Capital instruments

No. ¹⁾	Issuer	Year of issue	Type	Nominal amount in € million	Interest rate in %	Maturity	First call date Issuer
2	Deutsche Pfandbriefbank AG	2018	Bearer bond	300	5.750%	perpetual	2023
Total				300			

¹⁾ The sequential numbering corresponds to the consecutive numbering of the capital instruments in the appendix "Disclosure Report (31.12.2019) - Main features of capital instruments".

The bonds do not have a maturity date; however they can be called in ordinarily by pbb for the first time as of 28 April 2023 and subsequently every five years and also for regulatory and tax considerations, always subject to the prior approval of the relevant regulatory authority. The obligors do not have any right to terminate the bonds.

The bond conditions also provide for a temporary write-down of the nominal amount if the CET1 ratio falls below the level of 7.0 %. The level of 7.0 % relates primarily to the pbb Group in accordance with IFRS. This figure is also applicable at the level of the individual institution in accordance with HGB if pbb is no longer exempted from the requirement to determine the regulatory parameters for the individual institution.

The bonds constitute direct, unsecured and subordinate liabilities of the issuer; they are of equal ranking with each other, but enjoy priority over liabilities of the issuer resulting from instruments of common equity tier 1 capital. In the case of work-out measures in relation to the issuer, and in the event of winding-up, liquidation or insolvency of the issuer, the liabilities arising from the bonds are serviced only after repayment of the tier 2 capital.

Disclosure Report as of 31 December 2019

The additional tier 1 capital (AT1) of the pbb Group amounts to € 298 million with this issue (nominal amount of € 300 million less issue costs of € 2 million). No regulatory adjustments have been made in relation to the additional tier 1 capital.

The primary features in accordance with article 437 (1) letter b CRR of the additional tier 1 capital issued by pbb are detailed in the Appendix "Disclosure Report (31.12.2019) - Primary features of the capital instruments". The Appendix has been published together with the Disclosure Report, on the website of pbb under Investors / Mandatory Publications / Disclosure Report in accordance with part 8 of the CRR.

Tier 2 capital

The tier 2 capital (T2) of the pbb Group comprises longer-term subordinate liabilities which meet the criteria in accordance with article 63 CRR. No regulatory adjustments have been made in relation to the tier 2 capital.

The issued subordinated liabilities consist of the following table of issues (listed according to maturity). The primary features in accordance with article 437 (1) letter b CRR of these tier 2 capital instruments are also detailed in the Appendix "Disclosure Report (31.12.2019) - Primary features of the capital instruments".

Table 6: Tier 2 (T2) capital – Capital instruments

No. ¹⁾	Issuer	Year of issue	Type	Nominal amount in € million	Interest rate in %	Maturity
3	Deutsche Pfandbriefbank AG	2006	Registered bond	1	4.900	2020
4	Deutsche Pfandbriefbank AG	2000	Bearer bond	15	variable	2020
5	Deutsche Pfandbriefbank AG	2006	Borrowers' note loan	10	4.350	2021
6	Deutsche Pfandbriefbank AG	2006	Registered bond	10	4.570	2021
7	Deutsche Pfandbriefbank AG	2006	Bearer bond	7	4.560	2021
8	Deutsche Pfandbriefbank AG	2006	Borrowers' note loan	1	4.910	2021
9	Deutsche Pfandbriefbank AG	2002	Borrowers' note loan	4	6.550	2022
10	Deutsche Pfandbriefbank AG	2002	Borrowers' note loan	6	6.550	2022
11	Deutsche Pfandbriefbank AG	2002	Bearer bond	10	6.570	2022
12	Deutsche Pfandbriefbank AG	2003	Bearer bond	10	6.750	2023
13	Deutsche Pfandbriefbank AG	2008	Bearer bond	10	8.060	2023
14	Deutsche Pfandbriefbank AG	2003	Borrowers' note loan	5	6.330	2023
15	Deutsche Pfandbriefbank AG	2003	Borrowers' note loan	5	6.330	2023
16	Deutsche Pfandbriefbank AG	2005	Borrowers' note loan	10	4.650	2025
17	Deutsche Pfandbriefbank AG	2016	Borrowers' note loan	2	3.950	2026
18	Deutsche Pfandbriefbank AG	2006	Borrowers' note loan	2.5	4.530	2026
19	Deutsche Pfandbriefbank AG	2001	Bearer bond	7	6.550	2026
20	Deutsche Pfandbriefbank AG	2006	Registered bond	5	5.125	2026
21	Deutsche Pfandbriefbank AG	2016	Borrowers' note loan	5	3.880	2026
22	Deutsche Pfandbriefbank AG	2006	Borrowers' note loan	5	5.040	2026
23	Deutsche Pfandbriefbank AG	2016	Bearer bond	35	3.250	2026
24	Deutsche Pfandbriefbank AG	2017	Bearer bond	150	4.600	2027
25	Deutsche Pfandbriefbank AG	2017	Bearer bond	60	3.375	2027
26	Deutsche Pfandbriefbank AG	2017	Bearer bond	300	2.875	2027
27	Deutsche Pfandbriefbank AG	2016	Bearer bond	5	4.120	2031
28	Deutsche Pfandbriefbank AG	2017	Registered bond	7.5	4.550	2032
Total				688		

1) The sequential numbering corresponds to the consecutive numbering of the capital instruments in the appendix "Disclosure Report (31.12.2019) - Main features of capital instruments".

Market-oriented interest is applied to all subordinate liabilities. The issuer does not have any obligation to repay these liabilities ahead of schedule. These loans are subordinated to all claims of those obligors who are not subordinated (in the event of liquidation, insolvency or in the event of insolvency or other proceedings), but they enjoy priority over the liquidation claims of the shareholders as well as the claims of the AT1 capital instruments (additional tier 1 capital). No subsequent limitation of subordination, maturity or notice period can be made. Debtors termination rights are subject to defined contractual conditions. The original terms are at least five years, and are usually between ten and 20 years.

Disclosure Report as of 31 December 2019

After recognition of discounts and amortisations in accordance with article 64 CRR, the tier 2 capital of the pbb Group as of 31 December 2019 amounted to a total of € 624 million (31 December 2018: € 643 million).

Own funds

The own funds of the pbb Group totalling € 3,733 million (31 December 2018: € 3,639 million) - before deduction of the dividend originally proposed by the Management Board and Supervisory Board - consist of common equity tier 1 (CET1) capital of € 2,811 million, additional tier 1 capital (AT1) of € 298 million and tier 2 (T2) capital of € 624 million.

A major factor behind the increase of € 94 million in regulatory own funds compared with the end of 2018 is the decision of the Management Board and Supervisory Board of pbb, taken on 3 April 2020, to withdraw the dividend proposal for the financial year 2019 of € 0.90 per eligible share which was published on 4 March 2020. After deduction of the originally proposed dividend, a slight reduction of € 27 million in regulatory own funds would be observed. Further factors behind the change in regulatory own funds are the coupon payment in relation to the AT1 capital in April 2019, repayments of subordinate liabilities which fell due in the first half of 2019 and declines in the recognition of subordinate bonds (T2 capital), due to daily amortisations in accordance with article 64 CRR. An explanation is also provided for the reduction in the cumulative other comprehensive income in the annual report 2019 of the pbb Group, note 64 "Equity".

Optional IFRS 9 transitional regulations

The pbb Group does not apply the optional transitional regulations in accordance with article 473 (2) letter a CRR for mitigating the effects of the introduction of IFRS 9 after 1 January 2018. The disclosure of the table IFRS 9-FL "Comparison of own funds and the capital and leverage ratios of the institutions with and without application of the transitional regulations for IFRS 9 or equivalent expected credit losses" in accordance with the guidelines EBA/GL/2018/01 is accordingly not relevant for the pbb Group.

Reconciliation of regulatory capital and balance sheet equity

In accordance with article 437 (1) letter a CRR, the following table shows the reconciliation of regulatory own funds and balance sheet equity according to IFRS for the pbb Group, in each case before and after deduction of the dividend of € 0.90 per eligible share originally proposed by the Management Board and Supervisory Board. The pbb Group's balance sheet equity, including additional tier 1 capital (AT1), as of 31 December 2019 amounted to € 3,236 million (as of 31 December 2018: € 3,257 million under IAS 39).

Disclosure Report as of 31 December 2019

Table 7: Reconciliation of regulatory capital and balance sheet equity

All figures in € million, unless otherwise stated

No.	Capital instruments pbb Group	(A) Total equity acc. to commercial IFRS-consolidation scope	(B) Total equity acc. to regulatory CRR-consolidation scope	(C) Regulatory own funds according to CRR	
				Before deduction of the originally proposed dividend ¹⁾	After deduction of the originally proposed dividend ²⁾
		31.12.2019	31.12.2019	31.12.2019	31.12.2019
Common Equity Tier 1 (CET1): Instruments and reserves					
1	Capital instruments and the ralled share premium accounts	2,017	2,017	2,017	2,017
1a	Of which: Subscribed capital	380	380	380	380
1b	Of which: Additional paid-in capital	1,637	1,637	1,637	1,637
2	Retained earnings	966	966	966	966
3	Accumulated other comprehensive income (and other reserves)	-45	-45	-45	-45
4	Distribution	-	-	-	-121
5	Common Equity Tier 1 (CET1) before regulatory adjustments	2,938	2,938	2,938	2,817
Common Equity Tier 1 (CET1): regulatory adjustments					
6	Additional value adjustments (negative amount)	-	-	-6	-6
7	Intangible assets (net of related tax liability) (negative amount)	-	-	-39	-39
8	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)	-	-	-6	-6
9	Fair value reserves related to gains or losses on cash flow hedges	-	-	12	12
10	Negative amounts resulting from the calculation of expected loss amounts	-	-	-59	-59
11	Gains or losses on liabilities valued at fair value resulting from changes in own credit standing	-	-	-4	-4
12	Security to be deducted for the Deposit Protection Fund (negative amount)	-	-	-25	-25
13	Qualifying AT1 deductions that exceed the AT1 capital of the institution (negative amount)	-	-	-	-
14	Total regulatory adjustments to Common equity Tier 1 (CET1)	-	-	-127	-127
15	Common Equity Tier 1 (CET1) capital	2,938	2,938	2,811	2,690

Disclosure Report as of 31 December 2019

All figures in € million, unless otherwise stated

No.	Capital instruments pbb Group	(A)	(B)	(C)	
		Total equity acc. to commercial IFRS-consolidation scope 31.12.2019	Total equity acc. to regulatory CRR-consolidation scope 31.12.2019	Regulatory own funds according to CRR Before deduction of the originally proposed dividend ¹⁾ After deduction of the originally proposed dividend ²⁾ 31.12.2019 31.12.2019	
Additional Tier 1 (AT1) capital: Instruments and reserves					
16	Capital instruments and the related share premium accounts	298	298	298	298
16a	Of which: classified as equity under applicable accounting standards	298	298	298	298
16b	Of which: classified as liabilities under applicable accounting standards	-	-	-	-
17	Additional Tier 1 (AT1) capital before regulatory adjustments	298	298	298	298
Additional Tier 1 (AT1) capital: regulatory adjustments					
18	Direct and indirect holdings by an institution of own AT1 Instruments (negative amount)	-	-	-	-
19	Qualifying T2 deductions that exceed the T2 capital of the institution (negative amount)	-	-	-	-
20	Total regulatory adjustments to Additional Tier 1 (AT1) capital	-	-	0	0
21	Additional Tier 1 (AT1) capital	298	298	298	298
22	Tier 1 capital (T1 = CET1 + AT1)	3,236	3,236	3,109	2,988
Tier 2 (T2) capital: Instruments and reserves					
23	Capital instruments and the related share premium accounts according to IFRS balance sheet	682	682	682	682
24	Deferred interests within the IFRS balance sheet	17	17	-	-
25	Hedge adjustments within the IFRS balance sheet	4	4	-	-
26	Amortisation of Tier 2 capital instrument according to Article 64 CRR	-	-	-58	-58
27	Tier 2 (T2) capital before regulatory adjustments	703	703	624	624
Tier 2 (T2) capital: regulatory adjustments					
28	Direct and indirect holdings of the T2 instruments and subordinated loans (negative amount)	-	-	-	-
29	Total regulatory adjustments to Tier 2 (T2) capital	-	-	0	0
30	Tier 2 (T2) capital	703	703	624	624

Disclosure Report as of 31 December 2019

All figures in € million, unless otherwise stated

No.	Capital instruments pbb Group	(A)	(B)	(C)	
		Total equity acc. to commercial IFRS-consolidation scope	Total equity acc. to regulatory CRR-consolidation scope	Regulatory own funds according to CRR	
				Before deduction of the originally proposed dividend ¹⁾	After deduction of the originally proposed dividend ²⁾
		31.12.2019	31.12.2019	31.12.2019	31.12.2019
31	Total capital (TC = T1 + T2)	3,939	3,939	3,733	3,612

1) On 3 April 2020, the Management Board and Supervisory Board followed the recommendation of the ECB and the BaFin and decided initially not to distribute any dividends for the financial year 2019 but to reserve the right to adopt a further resolution in this respect after 1 October 2020. In this column, the regulatory own funds are calculated without deducting the originally proposed dividend of € 0.90 per eligible share or € 121 million in total.

2) For information purposes, this column shows the calculation of the regulatory own funds after deduction of the originally proposed dividend of € 0.90 per eligible share, or € 121 million in total.

3) For accounting purposes, the additional tier 1 capital (AT1) is classified as equity under IFRS because there is no obligation for repayment and ongoing servicing. The instruments of tier 2 capital (T2) are included in the liabilities in the IFRS balance sheet.

Further information regarding the balance sheet equity according to IFRS and related developments is set out in the annual report 2019 of the pbb Group, note "Changes in equity" and note 64 "Equity", published on the website of pbb.

Own funds and eligible liabilities (MREL)

Within the framework of the resolution and restructuring regime – Amendment Directive (EU) 2019/879 (BRRD II) and Amendment Regulation (EU) 2019/876 (CRR II) concerning the loss absorption and recapitalisation capacity of credit institutions - institutions are required to maintain not only the regulatory own funds but also where necessary liabilities which are convertible into equity in order to ensure that they are able in total to comply with the minimum requirement for own funds and eligible liabilities (MREL). Clear limits have been set with regard to the possibility of converting liabilities (bail-in capacity). In particular, there is the principle that the position of any creditor must not be worse than that which would result under regular insolvency proceedings (NCWO, principle of no creditor worse off). This for instance means that deposits, to the extent that they are backed by the national deposit protection funds, are not bail-in-capable, and are thus excluded from conversion. The precise extent of the MREL ratio is defined by the regulator in relation to specific institutions. The pbb Group aims to comply with an MREL ratio of at least 8 % in relation to TLOF (total liabilities and own funds), and considerably exceeded this requirement in the reporting year (as was indeed the case in the previous year).

3.2 Countercyclical capital buffer

The countercyclical capital buffer (CCB) in accordance with section 10d KWG is considered to be a macroprudential instrument of banking supervision. It is designed to counter the risk of excessive credit growth in the banking sector, i.e. in times of excessive credit growth, the banks should build an additional capital buffer (using common equity tier 1 (CET1) capital), which increases the loss absorption capacity of banks in the event of a crisis.

For Germany, the value for the domestic countercyclical capital buffer (CCB) is determined by the Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht, BaFin). With the “General order concerning the introduction of the quota for the countercyclical capital buffer in accordance with section 10d (3) sentence 2 KWG” of 28 December 2015, the BaFin has set the quota for Germany as 0 % with effect from 1 January 2016. As of 31 December 2019, the figure is unchanged at 0 %.

With the “General Administrative Act governing the rate for the domestic countercyclical capital buffer under section 10d of the KWG” of 28 June 2019, the BaFin fixed the rate for Germany at 0.25 %. This rate was to be applied starting 1 July 2020 for calculating the institution-specific countercyclical capital buffer (CCB). However, in view of the imminent challenges in connection with the spread of COVID-19 and the resultant anticipated borrowing requirement of the real economy, the BaFin reduced the countercyclical capital buffer for Germany from 0.25 % to 0 % as of 1 April 2020 with the “General Administrative Act governing the rate for the domestic countercyclical capital buffer” of 31 March 2020. According to the BaFin, a possible increase in the domestic countercyclical capital buffer is not likely to occur before 1 January 2021.

The pbb Group has to determine itself its own institution-specific CCB. The value of the countercyclical capital buffer relevant for Germany must be taken into account and applied to the sum of the relevant credit exposures that are located in Germany. In addition to the domestic countercyclical capital buffer, foreign countercyclical capital buffers from countries in which pbb Group receivables are held must also be included. The countercyclical capital buffers valid in such countries (see table “Countercyclical capital buffer - geographical distribution of credit exposures”, column 120) must be recognised on a pro-rata basis. The institution-specific countercyclical capital buffer for the pbb Group is thus derived from the weighted average of the domestic and foreign capital buffers of those countries in which the pbb Group holds significant credit exposures against the private sector (see table “Countercyclical capital buffer - geographical distribution of credit exposures”: as the sum of the weighted own funds requirement per country in accordance with column 110 multiplied by the country-specific CCB in % according to column 120).

Disclosure Report as of 31 December 2019

The following tables in accordance with article 440 CRR in conjunction with the Delegated Regulation (EU) 2015/1555 show, for the pbb Group, the extent of the countercyclical capital buffer specific for the pbb Group as well as the geographical distribution of the credit exposures essential for the calculation of the institution-specific countercyclical capital buffer.

Table 8: Institution-specific countercyclical capital buffer

All figures in € million, unless otherwise stated

Row	Amount of institution-specific countercyclical capital buffer (ICCB) ^{1,2)}	Column 010
10	Total risk exposure amount	17,721
20	Institution-specific countercyclical buffer rate	0.336%
30	Institution-specific countercyclical buffer requirement	60

1) The institution-specific countercyclical capital buffer is limited to 2,500% since 2019.

2) In view of the current challenges in connection with the spread of COVID-19, reductions in the national countercyclical capital buffers have already been announced; further reductions and also an associated reduction in the capital requirement for pbb are likely.

The institution-specific countercyclical capital buffer (ICCB) for the pbb Group amounted to 0.336 % as of 31 December 2019 (31 December 2018: 0.189 %); it is thus considerably lower than the highest figure of 2.5 % valid since 2019. There is thus no capping of the countercyclical capital buffer rate which is specific for the pbb Group. The slight increase of 0.147 percentage points in the institution-specific countercyclical capital buffer compared with the previous year is mainly attributable to an increase in the domestic countercyclical capital buffer to 1.5 % for the Czech Republic (31 December 2018: 1 %), 1 % for Denmark (31 December 2018: 0 %), 0.25 % for France (31 December 2018: 0 %), 1 % for Ireland (31 December 2018: 0 %), 2.5 % for Sweden (31 December 2018: 2 %) and 1.5 % for Slovakia (31 December 2018: 1.25 %).

In accordance with section 10d (1) KWG, the capital requirement of € 60 million (0.336 % of the risk-weighted receivables) has to be maintained in common equity tier 1 (CET1) capital. For this requirement, and also for the equity requirement for the capital conservation buffer of 2.5 %, after complying with the CET1 capital ratio of 4.5 % of the total risk exposure amount, a figure of € 2,014 million of common equity tier 1 (CET1) capital is available to the pbb Group.

Disclosure Report as of 31 December 2019

Table 9: Countercyclical capital buffer – Geographical distribution of exposures

All figures in € million, unless otherwise stated

Row	Geographical distribution of credit exposures relevant for the calculation of the countercyclical capital buffer (CCB)														
	General credit exposures		Trading book exposures		Securitisation exposures		Others	Own funds requirements				Total	Own funds requirement weights per country	Country-specific countercyclical capital buffer rate ¹⁾	
	Exposure value for SA	Exposure value for IRB	Sum of long and short positions of trading book	Value of trading book exposures for internal models	Exposure value for SA	Exposure value for IRB	Other assets without credit commitments	Of which: General credit exposures	Of which: Trading book exposures	Of which: Securitisation exposures	Other assets without credit commitments				
	010	020	030	040	050	060	065	070	080	090	095	100	110	120	
10	Breakdown by country ²⁾:														
1	(AT) Austria	680	470	-	-	-	-	-	18	-	-	-	18	0.01	0.00%
2	(AW) Aruba	66	-	-	-	-	-	-	-	-	-	-	-	-	-
3	(BD) Bangladesh	29	-	-	-	-	-	-	0.1	-	-	-	0.1	0.00	-
4	(BE) Belgium	192	150	-	-	-	-	-	4	-	-	-	4	0.00	0.00%
5	(BM) Bermuda	38	2	-	-	-	-	-	0.3	-	-	-	0.3	0.00	-
6	(CH) Switzerland	51	230	-	-	-	-	-	14	-	-	-	14	0.01	0.00%
7	(CZ) Czech Republic	-	378	-	-	-	-	-	24	-	-	-	24	0.02	1.50%
8	(DE) Germany	1,049	13,687	-	-	-	-	72	275	-	-	6	280	0.23	0.00%
9	(DK) Denmark	-	100	-	-	-	-	-	4	-	-	-	4	0.00	1.00%
10	(EG) Egypt	37	-	-	-	-	-	-	-	-	-	-	-	-	-
11	(ES) Spain	890	288	-	-	-	-	-	28	-	-	-	28	0.02	0.00%
12	(FI) Finland	-	517	-	-	-	-	-	27	-	-	-	27	0.02	0.00%
13	(FR) France	553	3,145	-	-	-	-	-	235	-	-	-	235	0.19	0.25%
14	(GB) United Kingdom	-	3,596	-	-	-	-	-	203	-	-	-	203	0.17	1.00%
15	(GG) Guernsey	-	2	-	-	-	-	-	0.1	-	-	-	0.1	0.00	-
16	(GH) Ghana	38	-	-	-	-	-	-	0.3	-	-	-	0.3	0.00	-
17	(HU) Hungary	-	84	-	-	-	-	-	4	-	-	-	4	0.00	0.00%
18	(IE) Ireland	155	-	-	-	-	-	-	-	-	-	-	-	-	1.00%
19	(IT) Italy	-	101	-	-	-	-	-	6	-	-	-	6	0.00	0.00%
20	(JE) Jersey	58	5	-	-	-	-	-	5	-	-	-	5	0.00	-

Disclosure Report as of 31 December 2019

All figures in € million, unless otherwise stated

Row	Geographical distribution of credit exposures relevant for the calculation of the countercyclical capital buffer (CCB)														
	General credit exposures		Trading book exposures		Securitisation exposures		Others	Own funds requirements				Total	Own funds requirement weights per country	Country-specific countercyclical capital buffer rate ¹⁾	
	Exposure value for SA	Exposure value for IRB	Sum of long and short positions of trading book	Value of trading book exposures for internal models	Exposure value for SA	Exposure value for IRB	Other assets without credit commitments	Of which: General credit exposures	Of which: Trading book exposures	Of which: Securitisation exposures	Other assets without credit commitments				
	010	020	030	040	050	060	065	070	080	090	095	100	110	120	
10	Breakdown by country ²⁾:														
21	(KY) Cayman Islands	143	-	-	-	-	-	-	-	-	-	-	-	-	
22	(LI) Liechtenstein	-	6	-	-	-	-	0.004	-	-	-	0.004	0.00	-	
23	(LU) Luxemburg	133	118	-	-	-	-	13	-	-	-	13	0.01	0.00%	
24	(MU) Mauritius	-	1	-	-	-	-	0.1	-	-	-	0.1	0.00	-	
25	(NL) Netherlands	0	772	-	-	-	-	36	-	-	-	36	0.03	0.00%	
26	(OM) Oman	58	-	-	-	-	-	-	-	-	-	-	-	-	
27	(PL) Poland	-	1,321	-	-	-	-	70	-	-	-	70	0.07	0.00%	
28	(PT) Portugal	376	-	-	-	-	-	6	-	-	-	6	0.00	0.00%	
29	(RO) Romania	-	42	-	-	-	-	2	-	-	-	2	0.00	0.00%	
30	(SA) Saudi Arabia	42	-	-	-	-	-	0.2	-	-	-	0.2	0.00	0.00%	
31	(SE) Sweden	66	809	-	-	-	-	41	-	-	-	41	0.02	2.50%	
32	(SI) Slovenia	-	73	-	-	-	-	6	-	-	-	6	0.00	0.00%	
33	(SK) Slovakia	-	88	-	-	-	-	4	-	-	-	4	0.00	1.50%	
34	(US) United States of America	182	2,720	-	-	-	-	190	-	-	-	190	0.16	0.00%	
35	(VG) Virgin Islands	-	1	-	-	-	-	0.1	-	-	-	0.1	0.00	-	
20	Total	4,834	28,707	0	0	0	0	72	1,217	0	0	6	1,223	1.00	0.00%

1) CCyB rates according to European Systemic Risk Board (ESRB) or Bank for International Settlements (BIS).

2) Country: Geographical location, which means the place of residence of the obligor / debtor or the location of the assets (real estate) for specialised lending exposures.

3.3 Own funds requirements

As the parent company of the institutional group in accordance with section 10a KWG in conjunction with article 11 et seq. CRR, pbb is responsible for ensuring compliance with the own funds requirements on a consolidated basis (regulatory consolidation group).

Methods for determining the own funds requirement

Since 1 January 2014, the pbb Group has been applying the provisions of CRR, and is thus subject to the disclosure requirements of part 8 of the CRR. The regulations of CRR/CRD form the basis for the minimum amount of own funds as well as the calculation of own funds requirements. In order to comply with the own funds requirements, the credit risk (including counterparty credit risk), the market risk, the operational risk, the settlement risk as well as the credit value adjustment risk (CVA risk) must be backed with capital. The regulatory parameters are calculated based on the IFRS accounting standards.

Credit risk (incl. counterparty credit risk)

For determining the own funds requirements for credit risks, the pbb Group uses the advanced IRB approach based on internal rating procedures in accordance with article 142 et seq. CRR as well as the standardised approach in accordance with article 111 et seq. CRR. The following table shows the coverage for IRBA exposure at default (EAD) and for risk-weighted IRBA assets (RWA) in accordance with section 11 SolvV.

Table 10: IRB-approach coverage

	Degree of coverage IRB approach ¹⁾	
	EAD	RWA
31 December 2014	95%	99%
31 December 2015	96%	99%
31 December 2016	97%	99%
31 December 2017	97%	99%
31 December 2018	96%	98%
31 December 2019	77%	85%

¹⁾ Exposures to central states and central banks in accordance with article 150 (1) letter d CRR are not included in the calculation of the IRBA coverage.

The advanced IRB approach in the credit portfolio of the pbb Group as of 31 December 2019 covers 77 % of the exposure at default (EAD) and 85 % of risk-weighted assets (RWA). The considerable decline in the IRBA coverage is mainly due to the fact that the application of the permanent partial use (PPU) for which pbb has submitted an application has, in accordance with article 150 CRR, been approved by the ECB for exposures to “sovereigns” and “financial institutions” as well as for models for insignificant portfolios, and the affected portfolios were thus returned to the standardised approach in the second half of 2019.

For calculating the own funds requirements for the counterparty credit risk in accordance with part 3, title II, chapter 6 of the CRR (i.e. for derivative transactions), the pbb Group uses the mark-to-market method in accordance with article 274 CRR.

For security financing transactions (security lending/repo transactions), the pbb Group applies the provisions for minimising credit risk in accordance with chapter 4 of the CRR, the comprehensive method for recognising financial security in accordance with article 223 et seq. CRR.

For calculating the own funds requirements for pre-financed contributions to the default fund of a qualified central counterparty, the pbb Group applies the risk-sensitive method in accordance with article 308 CRR.

Disclosure Report as of 31 December 2019

Market risk

For calculating the own fund backing for market risks in accordance with part 3, title IV of the CRR, the pbb Group applies the standardised approach in accordance with article 325 et seq. CRR. The bank's own internal models are not used at present.

Operational risk

The own fund backing for operational risk in accordance with part 3, title III of the CRR is calculated by the pbb Group using the standardised approach in accordance with article 317 et seq. CRR.

Settlement risk

The own fund requirements for the settlement and delivery risk in accordance with part 3, title V of the CRR are calculated using the rules defined in the articles 378 and 379 CRR.

CVA risk

For calculating the additional own funds requirement for OTC derivatives for the risk of a credit valuation adjustment (CVA risk) in accordance with part 3, title VI of the CRR, the pbb Group applies the standard method in accordance with article 384 CRR. This is based on the effective maturity, a rating-related weighting and the EAD, whereby the EAD for the relevant transactions is determined using the mark-to-market method in accordance with article 274 CRR.

Risk-weighted receivables and own funds requirements

As was the case at the end of the previous year, the minimum own funds requirements for the specified risk types as of 31 December 2019 amounted to 8 % of the risk-weighted receivables.

The total own funds requirement is 10.836 % (31 December 2018: 10.064 %). The increase of 0.772 percentage points compared with the end of the previous year is mainly attributable to the gradual increase in the capital conservation buffer (CCB) in accordance with section 10c KWG in conjunction with the transitional regulations in accordance with section 64r KWG, to 2.5 % of the total risk amount in 2019 (2018: 1.875 %) and also to the slight increase in the institution-specific countercyclical capital buffer (ICCB) in accordance with section 10d KWG in conjunction with section 64r KWG, which amounted to 0.336 % of the total risk amount for the pbb Group as of 31 December 2019 (31 December 2018: 0.189 %).

The risk-weighted receivables (risk-weighted assets; RWA) of the pbb Group amounted to € 17,721 million as of 31 December 2019 (31 December 2018 € 14,587 million). As expected, the RWA increased in the fourth quarter of 2019, and are thus considerably higher than the corresponding figure at the end of the previous year. The main reasons in this respect are detailed after the two following tables EU OV1 and EU CR10.

In accordance with article 438 letters c to f CRR in conjunction with EU OV1 of the guidelines EBA/GL/2016/11, the following table shows the risk-weighted assets as well as the regulatory capital backing, broken down according to risk types.

Table 11: Risk-weighted assets and minimum capital requirements (EU OV1)

All figures in € million

	Risk-weighted assets (RWA)		Minimum capital requirement
	31.12.2019	31.12.2018	31.12.2019
1 Credit risk (without counterparty credit risk)	16,184	12,963	1,295
2 thereof: standardised approach (CRSA)	2,460	461	197
2a Exposures to central governments or central banks	158	-	13
2b Exposures to regional governments or local authorities	569	-	46
2c Exposures to other public sector entities	154	-	12
2d Exposures to multilateral development banks	-	-	-

Disclosure Report as of 31 December 2019

All figures in € million

		Risk-weighted assets (RWA)		Minimum capital requirement
		31.12.2019	31.12.2018	31.12.2019
2e	Exposures to international organisations	-	-	-
2f	Exposures to institutions	18	-	1
2g	Exposures to corporates	722	217	58
2h	Retail exposures	0.2	0.2	0.01
2i	Exposures secured by mortgages on immovable property	230	34	18
2j	Exposures in default	2	3	0.2
2k	Exposures associated with particularly high risk	256	-	20
2l	Exposures in the form of covered bonds	139	-	11
2m	Exposures to institutions and corporates with short-term credit assessment	-	-	-
2n	Exposures in the form of units or shares in collective investment undertakings (CIUs)	3	3	0.2
2o	Equity exposures	-	-	-
2p	Other itmes ¹⁾	209	204	17
3	thereof: foundation IRB (FIRB) approach	-	-	-
4	thereof: advanced IRB (AIRB) approach	13,723	12,503	1,098
4a	Exposures to central governments and central banks	-	2,602	-
4b	Exposures to institutions	-	2,513	-
4c	Exposures to corporates	13,652	7,370	1,092
4ca	thereof: small and medium-sized enterprises (SME)	459	288	37
4cb	thereof: specialised lending exposures	13,089	6,532	1,047
4cc	thereof: other	104	550	8
4g	Retail exposures	-	-	-
4h	Other non credit-obligation assets	72	18	6
5	thereof: equity IRB exposures under the simple risk-weighted approach or the internal model approach (IMA)	0.1	0.1	0.01
5a	thereof: internal model approach (IMA)	-	-	-
5b	thereof: simple risk-weighting approach	0.1	0.1	0.01
5ba	thereof: exchange-traded equity investments	-	-	-
5bb	thereof: unlisted, but part of a sufficiently diversified portfolio	-	-	-
5bc	thereof: other investments	0.1	0.1	0.01
6	Counterparty credit risk ²⁾	519	524	42
7	thereof: mark-to-market method	279	262	22
8	thereof: original exposure method	-	-	-
9	thereof: standardised approach	-	-	-
10	thereof: internal model method (IMM)	-	-	-
11	thereof: risk exposure amount for contributions to the default fund of a central counterparty (CCP)	1	1	0.1
12	thereof: CVA risk ³⁾	239	262	19
12a	thereof: advanced method	-	-	-
12b	thereof: standardised method	239	262	19
12c	thereof: alternative method, based on the original exposure method	-	-	-
13	Settlement risk	0	0	0
13a	thereof: in the banking book	-	-	-
13b	thereof: in the trading book	-	-	-
14	Securitisation exposures in the banking book (after the cap)	0	0	0
15	thereof: IRB approach	-	-	-
16	thereof: IRB supervisory formula approach (SFA)	-	-	-
17	thereof: internal assessment approach (IAA)	-	-	-
18	thereof: standardised approach	-	-	-

Disclosure Report as of 31 December 2019

All figures in € million

		Risk-weighted assets (RWA)		Minimum capital requirement
		31.12.2019	31.12.2018	31.12.2019
19	Market risk	148	229	12
20	thereof: standardised approach	148	229	12
20a	thereof: position risk	-	-	-
20b	thereof: foreign-exchange risk	148	229	12
20c	thereof: commodity risk	-	-	-
21	thereof: internal model approach (IMA)	-	-	-
22	Large exposures in the trading book ⁴⁾	0	0	0
23	Operational risk	870	870	70
24	thereof: basic indicator approach	-	-	-
25	thereof: standardised approach	870	870	70
26	thereof: advanced measurement approach (AMA)	-	-	-
27	Amounts below the thresholds for deduction (subject to 250% risk weight)	209	204	-
28	Floor adjustment	-	-	-
29	Total	17,721	14,587	1,418

- 1) Subject to future profitability, from or not from temporary differences resulting from deferred tax assets.
2) Counterparty credit risk in accordance with Part Three, Title II, Chapter 6 of the CRR (derivative transactions).
3) Credit Value Adjustments; capital requirement for the risk of an adjustment of credit valuation for OTC derivatives.
4) pbb does not maintain a trading book for securities or derivatives portfolios held to realise short-term gains.

In addition, in accordance with article 438 CRR (last paragraph) in conjunction with EU CR10 of the guidelines EBA/GL/2016/11, the following table shows the RWA, the own funds requirement and further information for equity exposures for which the simple IRBA risk weighting is used, as well as for IRBA positions for which the simple IRBA risk weighting for specialised lending is used. As was the case in the previous year, the pbb Group uses the simple IRBA risk weighting for its holdings in accordance with article 155 (2) CRR. The pbb Group does not use the simple IRBA risk weighting for specialised lending exposures in accordance with article 153 (5) CRR.

As was the case in the previous year, disclosure of the table EU INS1 "Non-deducted insurance participations" in accordance with article 438 letters c and d CRR in conjunction with EU INS1 of the guidelines EBA/GL/2016/11 is not relevant for the pbb Group as of the reporting date. pbb does not hold a major participation in an insurer, a reinsurer or an insurance holding company, nor has any authorisation of the relevant regulatory authority in accordance with article 49 (1) CRR been provided for such holdings of own funds instruments not to be deducted.

Table 12: Simple risk weight for specialised lending and equities (EU CR10)

All figures in € million, unless otherwise stated

Regulatory categories	Remaining maturity	Specialised lending					
		On-balance-sheet amount	Off-balance-sheet amount	Risk weight	Regulatory exposure amounts (EAD)	Risk-weighted assets (RWA)	Expected losses (EL)
Category 1	Less than 2.5 years	-	-	50%	-	-	-
	Equal to or more than 2.5 years	-	-	70%	-	-	-
Category 2	Less than 2.5 years	-	-	70%	-	-	-
	Equal to or more than 2.5 years	-	-	90%	-	-	-
Category 3	Less than 2.5 years	-	-	115%	-	-	-
	Equal to or more than 2.5 years	-	-	115%	-	-	-
Category 4	Less than 2.5 years	-	-	250%	-	-	-
	Equal to or more than 2.5 years	-	-	250%	-	-	-

Disclosure Report as of 31 December 2019

All figures in € million, unless otherwise stated

Specialised lending							
Regulatory categories	Remaining maturity	On-balance-sheet amount	Off-balance-sheet amount	Risk weight	Regulatory exposure amounts (EAD)	Risk-weighted assets (RWA)	Expected losses (EL)
Category 5	Less than 2.5 years	-	-	-	-	-	-
	Equal to or more than 2.5 years	-	-	-	-	-	-
Total	Less than 2.5 years	0	0		0	0	0
	Equal to or more than 2.5 years	0	0		0	0	0

Equities under the simple risk-weighted approach							
Categories		On-balance-sheet amount	Off-balance-sheet amount	Risk weight	Regulatory exposure amounts (EAD)	Risk-weighted assets (RWA)	Minimum capital requirement
Private equity exposures in sufficiently diversified portfolios		-	-	190%	-	-	-
Exchange-traded equity exposures		-	-	290%	-	-	-
Other equity exposures		0.02	-	370%	0.02	0.1	0.01
Total		0.02	0		0.02	0.1	0.01

The main reason for the total increase of € 3,134 million in the risk-weighted assets (RWA) is a higher risk weighting in strategic sub-portfolios of commercial real estate financing, which follows the new requirements of the European Banking Authority (EBA) and which, in the opinion of pbb, is probably also consistent with the anticipated risk weightings of the future requirements under Basel IV of the Basel Committee on Banking Supervision (BCBS). At the same time, pbb thus addresses the expectation of the capital market of taking account of imminent regulatory changes at an early stage, and cushions cycle-induced fluctuations in RWA.

For calculating the RWA, banks use standardised approaches as well as internal IRBA models, whereby IRBA stands for internal rating-based approach. As part of the processes of reviewing the internal models in connection with the targeted review of internal models (TRIM), pbb transferred sub-portfolios to the standardised approach in the fourth quarter of 2019; this essentially affects loans to sovereigns and financial institutions. In parallel, pbb is revising the remaining IRBA models for the main portfolios in commercial real estate financing in line with the regulatory regulations, and in particular the EBA guidelines. This process of revising models is expected to be finalised in the course of 2020. The aim is to identify a new model landscape which considerably reduces the complexity. As of 31 December 2019, due consideration had been given to the intended new risk weightings in the core portfolio by way of a higher calibration of the LGDs (loss given default). This has resulted in an increase in the risk-weighted assets, which the pbb Group has dimensioned to an expected Basel IV-compliant level. As a result of the good capital backing situation, the capital ratios are still considerably higher than the regulatory requirements even after these changes.

A further factor behind the increase in RWA is the new business in commercial real estate financing carried out in the financial year 2019. This was opposed by repayments of loans and bonds which fell due as well as repayments, including the further reduction in the non-strategic portfolio in line with overall strategy. In addition, the decline in the volume of derivatives (counterparty credit risk) and the foreign currency exposures (market risks) had the effect of reducing the RWA.

The minimum own funds requirement for the risk-weighted assets of the pbb Group amounted to a total of € 1,418 million as of the reporting date (31 December 2018: € 1,167 million). In line with the business model of the pbb Group, which focusses on commercial real estate financing and also public investment financing, credit risks account for 94 % of the own funds requirement (incl. counterparty credit risks and CVA risks), market risks account for 1 % and operational risks account for 5 %.

Disclosure Report as of 31 December 2019

The total own funds requirement amounted to € 1,920 million (31 December 2018: € 1,468 million). The increase of € 452 million compared with the previous year is attributable not only to the increase in RWA and but also to the above-mentioned increase in the capital conservation buffer to 2.5 % as well as the slight increase in the institution-specific countercyclical capital buffer (ICCB), each in 2019.

In accordance with section 10c (1) KWG and section 10d (1) KWG, the capital requirement for the capital buffer must be maintained in common equity tier 1 (CET1) capital. After complying with the CET1 ratio of 4.5 % of the total risk amount, a total of € 2,014 million (31 December 2018: € 2,042 million) of common equity tier 1 (CET1) capital is available to the pbb Group for this purpose.

Surplus own resources

The surplus own resources (own funds less own funds requirement incl. capital buffer) – before deduction of the dividend originally proposed by the Management Board and Supervisory Board – amounted to € 1,813 million for the pbb Group as of 31 December 2019 (31 December 2018: € 2,171 million). After deduction of the originally proposed dividend, the surplus own resources would amount to € 1,692 million.

3.4 Capital ratios

The regulatory requirements of the Capital Requirements Regulation, CRR and the Capital Requirements Directive (CRD) have been applicable since 1 January 2014. These regulations form the basis for determining the regulatory capital and capital ratios. According to these provisions, the common equity tier 1 ratio (CET1 ratio: common equity tier 1 divided by the risk-weighted assets) must not fall below 4.5 %, the tier 1 ratio (T1 ratio: tier 1 divided by the risk-weighted assets) must not fall below 6.0 % and the own funds ratio (own funds divided by the risk-weighted assets) must not fall below 8.0 % in the financial year 2019.

pbb, as the parent company of the institutional group in accordance with section 10a KWG in conjunction with article 11 et seq. CRR, is responsible for ensuring compliance with the capital ratios on a summarised basis. The provisions regarding the regulatory capital ratios were complied with at all times in the financial year 2019.

Table 13: Capital ratios

All figures in %

	Common Equity Tier 1 ratio		Tier 1 capital ratio		Total capital ratio	
	31.12.2019 ¹⁾	31.12.2018 ²⁾	31.12.2019 ¹⁾	31.12.2018 ²⁾	31.12.2019 ¹⁾	31.12.2018 ²⁾
pbb Group	15.9	18.5	17.5	20.5	21.1	24.9

1) On 3 April 2020, the Management Board and Supervisory Board followed the recommendation of the ECB and the BaFin and decided initially not to distribute any dividends for the financial year 2019 but to reserve the right to adopt a further resolution in this respect after 1 October 2020. The regulatory capital ratios are calculated before deduction of the originally proposed dividend of € 0.90 per eligible share.

2) According to adopted annual financial statements 2018 and appropriation of profits.

After deduction of the originally proposed dividend, the regulatory capital ratios would be 15.2 % (CET1 ratio), 16.9 % (tier 1 ratio) and 20.4 % (own funds ratio).

SREP

This is also applicable for the requirements regarding the minimum capital of the Supervisory Review and Evaluation Process (SREP) of the European Central Bank (ECB) which exceed the existing regulatory requirements. These requirements were also complied with at all times by the pbb Group during 2019.

Disclosure Report as of 31 December 2019

The objective of the Supervisory Review and Evaluation Process is a comprehensive analysis of institutions supervised by the ECB – comprising an assessment of the business model, risk and corporate governance, risk situation, as well as capitalisation and liquidity status. Based on the results of the analysis as well as using benchmark comparisons, the ECB may impose minimum capitalisation or liquidity requirements, over and above existing regulatory requirements.

Minimum CET1 ratio

For 2019, and as a result of the SREP, pbb Group has since 1 March 2019 been required to maintain a minimum CET1 ratio of 9.5 % (excluding the countercyclical capital buffer, which varies according to country, and hence, for specific portfolios – as at 31 December 2018, it stood at 0.189 %). This capital requirement is based on the final Basel III requirements (excluding transitional rules) and comprises a Pillar 1 minimum capital requirement (4.5 %), a Pillar 2 capital requirement (Pillar 2 Requirement, P2R: 2.5 %) and the capital conservation buffer (Capital Conservation Buffer, CCB: 2.5 %).

Total capital requirement

Furthermore, pbb Group had to fulfil a total capital requirement of 13.0 % in 2019 (since 1 March 2019; excluding the countercyclical capital buffer, which varies according to country, and hence, for specific portfolios). It is based on the final Basel III requirements (excluding transitional rules) and comprises a Pillar 1 minimum requirement (8.0 %), a Pillar 2 capital requirement (2.5 %) and the capital conservation buffer (2.5 %).

New requirement for 2020

Towards the end of the year under review, the ECB notified pbb Group of the new minimum requirements for 2020 within the framework of the regular annual re-determination process. With effect from 1 January 2020, pbb Group has been required to continue to maintain a minimum CET1 ratio of 9.5 % (excluding the countercyclical capital buffer, which varies according to country, and hence, for specific portfolios – as at 31 December 2019, it stood at 0.336 %). This capital requirement is based on the final Basel III requirements (excluding transitional rules) and comprises a Pillar 1 minimum capital requirement (4.5 %), a Pillar 2 capital requirement (P2R: 2.5 %) and the capital conservation buffer (CCB: 2.5 %). The CET1 minimum capital requirement that applies for 2019 also represents the threshold for mandatory calculation of a so-called maximum distributable amount (MDA). This generally limits CET1 distributions, new performance-based remuneration, and interest payments on additional tier 1 capital (AT1 capital).

With effect from 1 January 2020, pbb Group has been required to continue maintaining a total capital requirement of 13.0 % (excluding the countercyclical capital buffer, which varies according to country, and hence, for specific portfolios – as at 31 December 2019, it stood at 0.336 %). It is based on the final Basel III requirements (excluding transitional rules) and comprises a Pillar 1 minimum own funds requirement (8.0 %), a Pillar 2 capital requirement (2.5 %) and the capital conservation buffer (2.5 %).

3.5 Leverage ratio

According to article 429 (2) CRR, the leverage ratio (a capital requirement which is not risk-based) is defined as the capital parameter of an institution divided by that institution's total exposure parameter, and is expressed as a percentage. This figure is not risk-sensitive, and complements the risk-based perspective of capital requirements and capital ratios. The aim is to limit the increase in leverage in the banking sector, to mitigate the risk of borrowings with a destabilising impact which can harm the financial system and the economy and to complement the risk-based requirements with a simple safety mechanism which is not risk-based.

The calculation of the ratio is based on the provisions of the Delegated Regulation (EU) 2015/62 of the European Commission for amending the Regulation (EU) No. 575/2013 of the European Parliament and Council with regard to the leverage ratio. According to these provisions, the calculation and disclosure of the regulatory leverage ratio is based on the carrying amount as the relevant measurement of assets. Specific regulatory measurements are applicable for derivatives and security financing transactions (security lending/repo transactions). Off-balance-sheet exposures are also taken into consideration in order to determine the overall risk of leverage.

The total exposure parameter of the leverage ratio for derivatives is calculated on the basis of regulatory mark-to-market method for derivatives, which comprises the current replacement costs plus a regulatory defined add-on for the potential future replacement value. If certain conditions are satisfied, variable additional cash payments (cash collateral) are deducted from the total exposure parameter: in the case of variable additional cash payments received from counterparties, they are deducted from the element which refers to the current replacement costs of derivatives and, in the case of variable additional cash payments made to counterparties, they are deducted from the total exposure parameter resulting from receivables which had been recognised as assets.

The total exposure parameter of the leverage ratio for security financing transactions (security lending/repo transactions) comprises the gross receivables from security financing transactions which are netted with liabilities from security financing transactions if certain conditions are met. In addition to the gross receivables from security financing transactions, an add-on for the counterparty credit risk of security financing transactions is included in the total exposure parameter.

The total exposure parameter of the leverage ratio for off-balance-sheet exposures takes account of the weighting factors (credit conversion factors, CCF) from the standardised approach for the credit risk of 0 %, 20 %, 50 % or 100 % depending on risk category, with a lower limit of 10 %.

The total exposure parameter of the leverage ratio for other balance sheet items (excl. derivatives and security financing transactions) comprises the balance sheet value of the respective positions (excl. derivatives and security financing transactions) as well as regulatory adjustments for positions which are deducted for calculating the regulatory tier 1 capital.

In accordance with article 451 CRR in conjunction with the Implementation Regulation (EU) 2016/200 regarding the disclosure of the leverage ratio, the following tables show the leverage ratio for the pbb Group. There has so far not been a binding maximum limit in the European Union for the leverage ratio. However, with the Amendment Regulation (EU) 2019/876 (CRR II), the article 92 (1) CRR was amended in such a way that institutions (starting 28 June 2021) must maintain a leverage ratio of at least 3 % at all times.

As was the case in the previous year, the leverage ratio for the pbb Group amounted to 5.6 % as of 31 December 2019, and is thus considerably higher than this minimum requirement.

Disclosure Report as of 31 December 2019

Table 14: Leverage ratio (EU LRSum)

All figures in € million

Summary reconciliation of accounting assets and leverage ratio exposures		Applicable amount
		31.12.2019
1	Total assets as per published financial statements	56,799
2	Adjustment for entities which are consolidated for accounting purposes but are outside the scope of regulatory consolidation	-
3	(Adjustment for fiduciary assets recognised on the balance sheet pursuant to the applicable accounting framework but excluded from the leverage ratio exposure measure in accordance with Article 429 (13) of Regulation (EU) No 575/2013)	-
4	Adjustments for derivative financial instruments	-2,451
5	Adjustments for securities financing transactions (SFTs)	-
6	Adjustment for off-balance sheet items (i.e. conversion to credit equivalent amounts of off-balance sheet exposures)	2,323
EU-6a	(Adjustment for intragroup exposures excluded from the leverage ratio exposure measure in accordance with Article 429 (7) of Regulation (EU) No 575/2013)	-
EU-6b	(Adjustment for exposures excluded from the leverage ratio exposure measure in accordance with Article 429 (14) of Regulation (EU) No 575/2013)	-105
7	Other adjustments ¹⁾	-1,543
8	Leverage ratio total exposure measure	55,023

1) The other adjustments mainly include cash collateral provided by pbb in the derivatives business.

Table 15: Leverage ratio (EU LRCom)

All figures in € million, unless otherwise stated

Leverage ratio common disclosure		CRR leverage ratio exposures
		31.12.2019
On-balance sheet exposures (excluding derivatives and SFTs)		
1	On-balance sheet items (excluding derivatives, SFTs and fiduciary assets, but including collateral)	53,979
2	(Asset amounts deducted in determining tier 1 capital)	-105
3	Total on-balance sheet exposures (excluding derivatives, SFTs and fiduciary assets) (sum of lines 1 and 2)	53,874
Derivative exposures		
4	Replacement cost associated with all derivatives transactions (i.e. net of eligible cash variation margin)	125
5	Add-on amounts for PFE associated with all derivatives transactions (mark-to-market method)	340
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	262
7	(Deductions of receivables assets for cash variation margin provided in derivatives transactions)	-1,901
8	(Exempted CCP leg of client-cleared trade exposures)	-
9	Adjusted effective notional amount of written credit derivatives	-
10	(Adjusted effective notional offsets and add-on deductions for written credit derivatives)	-
11	Total derivative exposures (sum of lines 4 to 10)	-1,174
Securities financing transaction exposures		
12	Gross SFT assets (with no recognition of netting), after adjusting for sales accounting transactions	-
13	(Netted amounts of cash payables and cash receivables of gross SFT assets)	-
14	Counterparty credit risk exposure for SFT assets	-
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)	0

Disclosure Report as of 31 December 2019

All figures in € million, unless otherwise stated

Leverage ratio common disclosure		CRR leverage ratio exposures
		31.12.2019
Other off-balance sheet exposures		
17	Off-balance sheet exposures at gross notional amount	4,366
18	(Adjustments for conversion to credit equivalent amounts)	-2,043
19	Other off-balance sheet exposures (sum of lines 17 to 18)	2,323
Exempted exposures in accordance with CRR Article 429 (7) and (14) (on and off balance sheet)		
EU-19a	(Exemption of intragroup exposures (solo basis) 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 exposures		
20	Tier 1 capital ¹⁾	3,109
21	Total leverage ratio exposures (sum of lines 3, 11, 16, 19, EU-19a and EU-19b)	55,023
Leverage ratio		
22	Leverage ratio	5,6%
Choice on transitional arrangements and amount of derecognised fiduciary items		
EU-23	Choice on transitional arrangements for the definition of the capital measure	-
EU-24	Amount of derecognised fiduciary items in accordance with Article 429(11) of Regulation (EU) NO 575/2013	-

1) On 3 April 2020, the Management Board and Supervisory Board followed the recommendation of the ECB and the BaFin and decided initially not to distribute any dividends for the financial year 2019 but to reserve the right to adopt a further resolution in this respect after 1 October 2020. The regulatory capital ratios are calculated before deduction of the originally proposed dividend of € 0.90 per eligible share.

Table 16: Leverage ratio (EU LRSpl)

All figures in € million

Split-up of on balance sheet exposures (excluding derivatives, SFTs and exempted exposures)		CRR leverage ratio exposures
		31.12.2019
EU-1	Total on-balance sheet exposures (excluding derivatives, SFTs, and exempted exposures), thereof:	52,235
EU-2	Trading book exposures	-
EU-3	Banking book exposures, thereof:	52,235
EU-4	Covered bonds	1,139
EU-5	Exposures treated as sovereigns	17,066
EU-6	Exposures to regional governments, multilateral development banks, international organisations and public sector entities not treated as sovereigns	3,061
EU-7	Institutions	1,149
EU-8	Secured by mortgages of immovable properties	26,183
EU-9	Retail exposures	-
EU-10	Corporate	2,794
EU-11	Exposures in default	455
EU-12	Other exposures (e.g. equity, securitisations, and other non-credit obligation assets)	388

Disclosure Report as of 31 December 2019

The leverage ratio is part of the capital and multi-year planning of the pbb Group. In line with the business and risk strategy and also in line with the restructuring plan which is a legal requirement, the leverage ratio is provided with an early warning threshold and a limit which form part of ongoing monitoring. The ratio is determined on a monthly basis and is integrated in the Group's risk management and risk controlling systems. The Management Board of pbb is informed of the leverage ratio on a regular basis (monthly) within the framework of the management report.

Compared with the end of 2018, the leverage ratio for the pbb Group – before deduction of the dividend originally proposed by the Management Board and Supervisory Board – was slightly improved at 5.6 % as of 31 December 2019 (31 December 2018: 5.3 %). After deduction of the originally proposed dividend, the leverage ratio would be 5.4 %. The reasons behind the slight increase in the leverage ratio are the increase of € 113 million in tier 1 capital and the decline of € 1,833 million in the total exposure parameter. The tier 1 capital (before deduction of the dividend originally proposed by the Management Board and Supervisory Board) amounted to € 3,109 million as of 31 December 2019 (31 December 2018: € 2,996 million), and the total exposure parameter amounted to € 55,023 million (31 December 2018: € 56,856 million).

3.6 Encumbered and unencumbered assets

In accordance with article 443 CRR in conjunction with the Delegated Regulation (EU) 2017/2295, the following chapter contains information concerning encumbered and unencumbered assets of the pbb Group.

The asset encumbrance of the pbb Group results mainly from its business model using Pfandbriefe as the most important refinancing instrument. The pbb Group specialises in commercial real estate and public investment finance. Most of the extended loans are refinanced on the Pfandbrief market. pbb issues mortgage Pfandbriefe which are backed with property charges and public Pfandbriefe which are backed by public-sector receivables. With an outstanding Pfandbrief volume of more than € 27 billion (nominal), pbb is one of the largest Pfandbrief issuers and is thus also a major issuer of covered bonds in Europe.

As of 31 December 2019, the assets of the pbb Group, based on the median of the quarterly data of the financial year, amounted to € 59.7 billion (31 December 2018: € 57.7 billion); of this figure, € 38.9 billion (65.1 %) are encumbered (31 December 2018: € 38.0 billion or 65.9 %). Within the pbb Group, this encumbrance relates exclusively to pbb, in which all strategic business activities of the pbb Group are pooled. The asset encumbrance of the pbb Group was essentially unchanged in the course of 2019.

As was the case in the previous year, Pfandbriefe represented the main source (85 %) of asset encumbrance for the pbb Group. In addition to the issue of mortgage Pfandbriefe and public Pfandbriefe leading to an encumbrance of loans and securities in the mortgage and public cover pools, derivative financial instruments in particular represent a further source (9 %) of asset encumbrance. The remaining percentages are accounted for by security financing transactions (security lending/repo transactions) and the participation of pbb in the ECB series of specific longer-term refinancing transactions II (GLRG-II) in 2019 (maturity until 2021).

There are no mismatches between the accounting framework applied by the pbb Group, the International Financial Reporting Standards (IFRS), assets which are deposited as collateral and transferred on the one hand and the assets which are considered to be encumbered for regulatory purposes on the other. The depositing or transfer of assets in accordance with the IFRS automatically involves the encumbrance of such assets. A distinction between the encumbered assets or collateral according to currencies other than the euro (the reporting currency) is not material for the pbb Group.

According to the EU Implementation Regulation 2015/79, Appendix III, point 1.7, an asset is considered to be encumbered if it has been deposited as collateral or if it is subject to any form of arrangement to secure, collateralise or credit enhance any transaction from which it cannot be freely withdrawn. An asset encumbrance results from the requirement to provide collateral, usually caused by a transaction on the liabilities side of the balance sheet (refinancing side).

Pfandbriefe

As a specialist bank for real estate and public investment finance, pbb issues mortgage Pfandbriefe as well as public Pfandbriefe. These are regularly issued on the international capital market in the benchmark format or as private placements. In line with its lending business on the assets side of the balance sheet, pbb offers its investors Pfandbriefe in various maturities and different currencies with a focus on the EUR, GBP, USD and SEK.

The issue of Pfandbriefe is subject to the stringent provisions of the German Pfandbrief Act (Pfandbriefgesetz, PfandBG), which places stringent requirements on investor protection. These stringent legal standards have meant that, in the past, Pfandbriefe have proved to be of above-average reliability. The guarantee mechanisms provided for by the German Pfandbrief Act work amongst other things through the so-called preferential right in insolvency granted to the Pfandbrief holders. In the event of an insolvency of a Pfandbrief bank, the cover pool used as backing for the Pfandbriefe is first of all available solely to the Pfandbrief holders for settling their claims; only when all claims of the Pfandbrief holders have been settled in full is any remainder of the cover pools available for settling the claims of the insolvency creditors.

Disclosure Report as of 31 December 2019

Pfandbrief banks are required to provide quarterly reports on the composition and structure of their cover pools. The publications in accordance with the German Pfandbrief Act can be found on the website of pbb under Investors / Mandatory Publications / Publications in accordance with section 28 German Pfandbrief Act.

Overcollateralisation of Pfandbriefe

The German Pfandbrief Act (PfandBG) provides for a net present overcollateralisation of 2.0 % for Pfandbriefe; i.e. the present value of the cover pool should always be at least 2.0 % higher than the present value of all Pfandbriefe issued for this cover pool. Nominal cover must also be assured. This means that the total nominal values of all cover pools must at least cover the total nominal values of the Pfandbriefe issued for this cover pool.

The rating agencies also require additional cover, depending on the quality of the cover pool and the desired Pfandbrief rating. The mortgage Pfandbriefe and public Pfandbriefe of pbb were rated as Aa1 by Moody's as of 31 December 2019. In order to maintain this rating, pbb must provide minimum net present value surplus cover of 4.0 % for mortgage Pfandbriefe and 6.0 % for public Pfandbriefe.

The surplus cover of the mortgage Pfandbriefe as of 31 December 2019 was actually 18.5 % (nominal) and 20.2 % (present value). For the public Pfandbriefe, pbb provided surplus cover of 32.7 % (nominal) and 29.7 % (present value) as of 31 December 2019. The overcollateralisation thus exceeded the requirements of the rating agencies and the legislative authorities.

The current surplus cover and the voluntary surplus cover required by Moody's is published by pbb on its website under Investors / Mandatory Publications / Publications according to section 28 German Pfandbrief Act or Investors / Ratings/ Moody's Reports.

In order to manage the liquidity position and to optimise the quality as well as the cash flows of the cover pools, pbb can also provide more surplus cover than required by law or desired by the rating agencies.

Derivatives and security financing transactions

The pbb Group uses derivatives mainly to hedge market risks resulting for instance from changes in interest rates or exchange rates. These hedging transactions are opposed by underlyings of asset or liability positions. The hedging of interest and exchange rate risks is intended to reduce and/or avoid market risks. The counterparties in derivative transactions are mainly OECD credit institutions or Eurex Clearing. The pbb Group also provides derivatives for real estate customers and public law entities, for instance to enable them to hedge market risks of commercial real estate financing.

The purpose of using security lending/repo transactions is to assure short-term liquidity management; this is also a key source of the secured refinancing of pbb. The main counterparties are OECD credit institutions or Eurex Clearing.

In connection with its derivative and security lending/repo transactions, pbb uses standard framework agreements including the related collateral agreements. For more detailed information, please refer to chapter 5.3 "Credit risk mitigation techniques", section "Eligible netting agreements".

In accordance with article 443 CRR in conjunction with the Delegated Regulation (EU) for the disclosure of encumbered and unencumbered assets, the following tables show the asset encumbrance of the pbb Group. The figures are based on median values of the quarterly data of the financial year 2019.

Disclosure Report as of 31 December 2019

The other assets shown in the table "Encumbered and unencumbered assets" (line 120) mainly comprise loans and advances (around 93 %) as well as derivatives (around 7 %), most of which are encumbered. It also shows unencumbered assets such as tax claims as well as other tangible assets (property, plant and equipment such as operating and business equipment and rights-of-use relating to leased buildings) and intangible assets (such as purchased software and software developed in-house), less than 1 % which are generally not available for encumbrance purposes.

Table 17: Encumbered and unencumbered assets

All figures in € million

Encumbered and unencumbered assets	Carrying amount of encumbered assets		Fair value of encumbered assets		Carrying amount of unencumbered assets		Fair value of unencumbered assets	
	010	thereof: notionally eligible EHQLA and HQLA ¹⁾ 030	040	thereof: notionally eligible EHQLA and HQLA ¹⁾ 050	060	thereof: EHQLA and HQLA ¹⁾ 080	090	thereof: EHQLA and HQLA ¹⁾ 100
10 Assets of the reporting institution	38,863	2,976			20,849	3,493		
30 Equity instruments	-	-			-	-		
40 Debt securities	5,863	2,976	5,863	2,976	3,726	3,493	3,729	3,493
50 thereof: covered bonds	1,148	-	1,148	-	1	-	1	-
60 thereof: asset-backed securities (ABS)	-	-	-	-	-	-	-	-
70 thereof: issued by general governments	3,790	2,530	3,790	2,530	2,688	2,499	2,627	2,499
80 thereof: issued by financial corporations	1,966	423	1,966	423	1,037	1,027	1,157	1,041
90 thereof: issued by non-financial corporations	-	-	-	-	-	-	-	-
120 Other assets ²⁾	33,350	-			16,875	-		
121 thereof: derivatives	2,981	-			267	-		
122 thereof: loans and advances ²⁾	30,150	-			16,332	-		

1) The disclosure of the asset quality indicators EHQLA and HQLA is required by the Delegated Regulation (EU) 2017/2295: Assets of extremely high liquidity and credit quality, "Level 1 assets" (Extremely High Quality Liquid Assets, EHQLA) and assets of high liquidity and credit quality, "Level 2 A/B assets" (High Quality Liquid Assets, HQLA).

2) In September 2020, the item „Other assets“ was extended to include loans and advances, and a new line 122 was accordingly inserted in the table. The original publication of the Disclosure Report as of 31 December 2019 of 16 April 2020 was accordingly replaced.

Disclosure Report as of 31 December 2019

Table 18: Collateral received

All figures in € million

Collateral received	Fair value of encumbered collateral received or own debt securities issued		Unencumbered Fair value of collateral received or own debt securities issued available for encumbrance	
		thereof: notionally eligible EHQLA and HQLA ¹⁾		thereof: EHQLA and HQLAA ¹⁾
	010	030	040	060
130 Collateral received by the reporting institution	0	0	0	0
140 Loans on demand	-	-	-	-
150 Equity instruments	-	-	-	-
160 Debt securities	-	-	-	-
170 thereof: covered bonds	-	-	-	-
180 thereof: asset-backed securities (ABS)	-	-	-	-
190 thereof: issued by general governments	-	-	-	-
200 thereof: issued by financial corporations	-	-	-	-
210 thereof: 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	0	0	0	0
241 Own covered bonds and asset-backed securities issued and not yet pledged			0	0
250 Total assets, collateral received and own debt securities issued	38,863	2,976		

1) Asset quality indicators EHQLA and HQLA according to the Delegated Regulation (EU) 2017/2295:
EHQLA: Assets of extremely high liquidity and credit quality, "Level 1 assets" (Extremely High Quality Liquid Assets).
HQLA: Assets of high liquidity and credit quality, "Level 2 A/B assets" (High Quality Liquid Assets).

Disclosure Report as of 31 December 2019

Table 19: Sources of encumbrances

All figures in € million

Sources of encumbrance	Matching liabilities, contingent liabilities or securities lent	Assets, collateral received and own debt securities issued other than covered bonds and asset-backed securities encumbered
	010	030
010 Carrying amount of selected financial liabilities	38,860	38,513
011 Derivatives	3,658	2,981
012 thereof: over the counter (OTC)	3,658	2,981
013 Deposits	2,154	2,253
014 thereof: repurchase agreements	2,154	2,253
015 thereof: collateralised deposits other than repurchase agreements	-	-
016 Debt securities issued	32,921	33,064
017 thereof: covered bonds issued	32,921	33,064
018 thereof: asset-backed securities (ABS) issued	-	-
019 Other sources of encumbrance	-	350
020 thereof: securities-lending transactions	-	350

4 Risk management and risk-oriented overall bank management

pbb Group has implemented a Group-wide risk management and risk control system, which provides for uniform risk identification, measurement and limitation in accordance with section 91 (2) of the German Stock Corporation Act (AktG) and section 25a of the German Banking Act (Kreditwesengesetz – “KWG”). pbb, at a single-entity level, applies an exemption according to section 2a (2) of the KWG. The exemption refers to the requirements concerning the risk control function pursuant to section 25a (1) sentence 3 nos. 1, 2, 3b and 3c of the KWG.

Declarations of the Management Board

The disclosure requirements in accordance with article 435 (1) letters a to f CRR in conjunction with EU OVA, EU CRA, EU CCRA and EU MRA of the guidelines EBA/GL/2016/11 as well as EU LIQA of the guidelines EBA/GL/2017/01 concerning the risk management strategy, the risk management processes and risk management policy are implemented in this Disclosure Report and in the risk and opportunity report in the annual report 2019 of the pbb Group. The annual report is published on the website of pbb under Investors / Financial Reports.

The Disclosure Report as well as the risk and opportunity report show the risks and opportunities identified for the various risk categories within the framework of the implemented risk management and risk controlling system. With regard to enterprise-wide and general company-specific risks and opportunities, please also refer to the information set out in the forecast report of the annual report 2019 of the pbb Group.

The Management Board of pbb considers that the existing risk management system in accordance with article 435 (1) letter e CRR in conjunction with EU LIQA of the EBA/GL/2016/11 is consistent with the risk profile and the risk strategy of the pbb Group. pbb is assuming that the methods, models and processes implemented in the pbb Group are suitable at all times for assuring a risk management and risk controlling system which is consistent with the business strategy and the risk profile.

The risk declaration of the Management Board in accordance with article 435 (1) letter f CRR in conjunction with EU LIQA of the EBA/GL/2016/11, regarding the general risk profile of the pbb Group associated with the business strategy as well as corresponding key indicators and figures, are set out in this Disclosure Report and also in the risk and opportunity report in the annual report 2019 of the pbb Group. The Management Board of pbb confirms that, to the best of its knowledge, the internal risk management procedures used in the pbb Group are suitable for constantly providing a comprehensive picture of the risk profile of the pbb Group and also for sustainably assuring the bank’s risk-bearing capacity.

The declarations were approved by the Central Management Board within the framework of the approval of this Disclosure Report. Please also refer to the “responsibility statement” in the annual report of the pbb Group.

4.1 General organisation and risk management principles

Organisational changes relating to the Chief Risk Officer function took effect as at 1 January 2019. The tasks that were performed temporarily by the Risk Management Projects unit are now once again the responsibility of CRM REF. With Mr Schulte joining the Management Board, a new area of responsibility was also created, bundling responsibility for Treasury, Portfolio Analysis and Property Analysis & Valuation (the latter having been the responsibility of the CRO up until that point). Furthermore, the CRM REF and CRM PIF units were merged in the year under review. Since 1 October 2019, the Compliance department – which was previously allocated to the CEO/CFO function – has been reporting to the CRO function.

Organisation and committees

Management Board

The Management Board of pbb is responsible for the risk management system, and decides on the strategies and material issues of risk management and risk organisation at pbb Group.

The principles, methods and processes of pbb Group's risk management system are specified centrally by pbb's Risk Management and Controlling, and are applied throughout pbb Group, subject to any special requirements at single-entity level. The risk management system comprises the plausible and systematic identification, analysis, valuation, management, documentation, monitoring and communication of all major risks.

The following are major components of the risk management system in the responsibility of the Management Board:

- Defining, updating and communicating business and risk strategies as the basis of business activities and risk acceptance within pbb Group
- Defining and improving organisation structures within pbb Group and in particular for risk management, which ensures that all major risks of pbb Group are managed and monitored
- Adopting credit competences as a decision-making framework along the credit processes within pbb Group
- Taking decisions regarding (portfolio) management measures outside the delegated competences.

The Management Board notifies the Supervisory Board with regard to significant changes in the business and risk strategies as well as the risk profile of pbb Group. The Risk Management and Liquidity Strategy Committee (RLA) of the Supervisory Board is mainly responsible for controlling the overall risk situation and for monitoring, establishing and improving an efficient risk management system, and is also responsible for the liquidity management and assurance of pbb Group and resolves upon necessary credit approvals for credit decisions. The Management Board notifies this committee of all increases to specific allowances and the creation of new specific allowances in excess of € 5 million and also notifies this committee at regular intervals of major exposures with higher levels of risk.

The committees detailed in the following have been set up at pbb Group level with the involvement of the respective decision-makers.

Risk Committee

The Risk Committee (RC), consists of the CRO (Chairman), the CEO/CFO (Deputy Chairperson), the Chief Credit Officer (CCO), the Head of Risk Management & Control (RMC) and one CRM department head. In general, the committee meets on a monthly basis and discusses the risk development, adopts guidelines/policies, methods for risk measurement, the related parameters as well as methods of monitoring for all risk types. The RC is responsible for the development of standard guidelines of risk management and risk controlling across the Group and also monitors the development of the risk-bearing capacity, economic capital, available financial resources as well as the credit portfolio and the compliance with limits. The Risk Committee discusses the

Disclosure Report as of 31 December 2019

portfolio developments of pbb Group. Additional sub-committees have been established below the Risk Committee, as outlined below.

Credit Committee

The Credit Committee is chaired by the CRO or the CCO (with delegation opportunities to a Senior Credit Executive). As a general rule, the committee meets at least once a week and takes credit decisions on new business, prolongations and material changes that fall within the scope of its authority. It also votes on all credit decisions which are in the responsibility of the Management Board or which have to be approved by the Risk Management and Liquidity Strategy Committee. It is in the responsibility of the relevant decision-makers to ensure that the credit decisions are consistent with the prevailing business and risk strategy.

Watchlist Committee

The Watchlist Committee is chaired by the CCO (who may delegate this task to a nominated representative with voting rights in the Credit Committee ('B' vote)) and meets every month. All exposures identified by the early warning system are discussed and, if appropriate, individual measures are decided there; these measures have to be subsequently implemented by the relevant departments. Where necessary, the committee takes decisions regarding the need to transfer exposures to CRM REF Workout, which then takes the necessary steps for restructuring or workout on the basis of an individual exposure strategy. It is the duty of responsible authorised persons to take all necessary credit decisions in accordance with the lending authority regulations, or to initiate a decision by the Credit Committee.

Risk Provisioning Committee

If there are indicators for an impairment of an exposure's credit rating (impairment stage 3) in accordance with IFRS 9, the result – after determining the extent of any such impairment – is presented to the Risk Provisioning Committee (RPC). It is chaired by the CRO. The RPC decides upon recognition, charge-off and reversals of loan loss provisions, within the scope of a pre-defined assignment of approval powers and in accordance with IFRS and the German Commercial Code (HGB); where the RPC cannot take a final decision, it issues a recommendation. Finally, the RPC decides upon any foreclosures which may be necessary. The recommendations made by the committee form the basis of decisions to be made in line with the relevant set of rules governing powers.

New Product Process Committee

The New Product Process Committee (NPPC) comprises representatives from the most important units responsible for infrastructure and controls. The representatives are determined by the RC. The NPPC convenes on an event-driven basis; it is responsible to ensure that, before business commences with new products or in new markets, the resulting risks as well as the related impact on processes, controls and infrastructure are systematically analysed and duly addressed. Only after approval of new product process committee business with new products or in new markets can be started.

Stress Test Committee

The Stress Test Committee is responsible for the methodology, performance and monitoring of the internal stress tests. It is chaired by the CRO. The Committee also contributes to the preparation of scenarios for the Recovery Plan which every bank is required by law to prepare.

Asset and Liability Committee / Legal and Regulatory Risk Committee / Outsourcing-Committee

Besides the Risk Committee, there are the Asset and Liability Committee (ALCO) as well as the Legal and Regulatory Risk Committee (LRRC). The tasks of the ALCO are: managing liquidity as well as pbb Group's balance sheet structure, defining long-term financing strategies, managing capital, regulatory capital ratios, as well as market risk exposure. The LRRC advises on legal and regulatory requirements, and may assign responsibility for implementation to business divisions, following consulta-

Disclosure Report as of 31 December 2019

tion. The Outsourcing Committee deals with the implementation of regulatory and statutory requirements as well as preparation of, and compliance with, internal guidelines. Moreover, it handles the overall management and monitoring of outsourced activities.

Figure 3: Risk management organisation

Risk Management and Liquidity Strategy Committee (RLA) of the Supervisory Board							
Management Board							
Risk Committee (RC)					Asset and Liability Committee (ALCO)	Legal and Regulatory Risk Committee ¹⁾ (LRRC)	Outsourcing Committee (OC)
Credit Committee	Watchlist Committee	Risk Provisioning Committee	New Product Process Committee	Stress Test Committee			

¹⁾ Reporting via Compliance.

Chief Risk Officer (CRO)

In addition to the above-mentioned committees, the following organisation units of the CRO, form an integral part of the risk management system of pbb Group:

Figure 4: Chief Risk Officer organisation

Chief Risk Officer (CRO)			
Risk Management & Control (RMC)	Credit Risk Management (CRM)	Operations	Compliance

The organisation of the CRO function comprises the following monitoring and back-office units at pbb Group level:

- The unit Risk Management & Control, which is amongst others responsible for monitoring market, credit, operational and liquidity risks as well as the risk-bearing capacity of pbb Group and which is also responsible for Group-wide uniform risk measuring methods and risk reports.
- The unit of the Chief Credit Officer of pbb Group, which is responsible for the analysis of new business and portfolio management. In addition, CRM REF also comprises the Workout (Real Estate) unit, which is responsible for the recovery and workout of all critical exposures, and the central unit Credit Processes, which is responsible in particular for the organisation of the Credit Committee and implementation of regulatory requirements in the credit processes. The CRM REF and CRM PIF units were merged in the year under review.
- The unit Operations, which is responsible for the global servicing and administration of the loan portfolio (including technical implementation of loan agreements), settlement of capital markets transactions, administration and processing of the Group's securities and derivatives portfolios, as well for handling domestic and international payments.
- The unit Compliance, has amongst others established checking and reporting processes with regard to money laundering, sanctions, embargos and other criminal acts, as well as for other Compliance topics. In addition, the Compliance function is responsible for counteracting any risks arising from non-compliance with legal rules and requirements. Compliance is also responsible for the central coordination of key controls within the framework of the Internal Control System. Compliance is also represented in various committees. Since 1 October 2019, the Compliance department – which was previously allocated to the CEO/CFO function – has been reporting to the CRO function.

In addition to the CRO function, the independent Property Analysis & Valuation (PAV) department and Group Internal Audit units complement the pbb Group's risk management system. PAV is responsible for the analysis and uniform valuation of properties serving as collateral, using market valuation and loan-to-value methods, observation (research) of the regional real estate markets as well as for the monitoring of financed developments. The area of responsibility of Group Internal Audit comprises risk-oriented regular as well as event-driven audits of processes, controls and systems. This also includes the revision of the risk management system.

Risk strategy and policies

Together with pbb's business strategy, the risk strategy forms the foundation for pbb Group's planning. The risk strategy has been defined on the basis of the Group-wide risk tolerance; it reflects pbb Group's strategic direction as a specialist for real estate finance and public investment finance with a focus on Pfandbrief funding. Moreover, the risk strategy defines the guidelines which form the basis of the risk culture for pbb Group. Subject to any special requirements at single-entity level, the risk strategy is applicable for pbb Group's operating segments and legal entities. It is reviewed and updated at least annually.

As part of the annual strategy development process, the risk strategy for 2019 was drawn up, adopted by the Management Board and approved by the Supervisory Board. Material changes compared to the previous year were made in the form of adjustments to the ICAAP management approach, and updates of individual risk types in accordance with the risk inventory. At the beginning of August 2019, the Risk Strategy was further updated on account of the IRRBB requirements to be implemented within market risk.

The risk strategy is enshrined in the operative business via risk policies for the individual operating segments, as well as frameworks, guidelines or instructions for all major risk types set out in the valid risk inventory. The individual policies are reviewed and updated regularly if necessary. They contain information on risk measurement, risk monitoring and risk management. The limit-setting process – as well as the escalation process if a limit is exceeded – are also described in the policies.

Risk reporting

Risk reporting reflects the structure of the operating segments. The Management Board of pbb receives regular risk reports which include an extensive overview as well as detailed information concerning the risk situation for each risk type as well as other management-relevant information. The supervisory bodies are also notified of risk-relevant issues at regular intervals. In addition, special reports are prepared on an ad hoc basis or at the request of the Management Board or Supervisory Board; such special reports consider specific and acute risk issues, for instance in relation to critical markets, products or counterparties.

Risk quantification, risk control and management

For the purposes of systematically identifying and analysing potential risks arising from the business model or pbb Group's external environment, the Group carries out a comprehensive risk inventory at least once a year. The objective of this risk inventory is to establish a full risk profile which identifies any and all risks, provides an assessment as to whether these risks are material for the capitalisation and liquidity status of pbb Group, and scans them for the existence of potential risk concentrations. Where possible, risks are quantified using applicable risk models or other methods.

Risks which cannot be quantified (or only in part) are monitored and managed using dedicated capital buffers or separate management tools, as well as by way of regular, detailed reports and clearly-defined requirements such as the Compliance and Corporate Governance guidelines.

pbb Group's approach to managing risk, capital and liquidity is based on the Internal Capital Adequacy Assessment Process (ICAAP) and the Internal Liquidity Adequacy Assessment Process (ILAAP), each of which is seen in a normative and an economic perspective. The normative perspective is geared towards ongoing fulfilment of all of the Bank's capital- and liquidity-related legal requirements and supervisory demands, as well as to the achievement of internal objectives. The economic per-

spective covers all material risks which might threaten pbb Group's economic viability, with a focus on the present-value analysis of risks.

Besides the measurement, limitation and monitoring of risks, all risk management approaches also comprise regular reporting as well as escalation processes; they are supplemented by scenario analyses and stress testing. Within the framework of these strategic management approaches, pbb Group defines its risk appetite, which sets out the scope within which pbb Group is prepared to assume risks. pbb Group uses this information to derive input for operative management, through limit systems, committee decisions, and other management decisions.

Limit and early warning systems have been implemented, in line with the risk appetite, for each type of risk as well as across risk types, at the level of capital management circuits. The strategy underlying the respective type of risk, together with the associated risk definition, risk calculation methods, and risk reporting systems are described in detail in the following chapters.

Internal Audit

The need for an Internal Audit function is based on specific legal provisions, such as section 25a (1) sentence 3 No. 3 KWG in conjunction with MaRisk (Minimum requirements for risk management according to BaFin; in particular AT 4.4.3 in conjunction with BT2) and section 91 (2) AktG.

For this purpose, the Internal Audit function is an integral part of the internal control system. The "Internal Control System" (ICS) comprises all types of control activities which are directly or indirectly integrated in the workflows to be monitored (= process-oriented control). The Internal Audit function also acts as an instrument of the Management Board for risk-based monitoring of operating and business procedures, risk management, risk controlling as well as the Internal Control System (= process-independent control).

The Management Board confers on the Internal Audit function the right of initiative including the authorisation to directly communicate with every employee so as to audit any activity or business unit and gain access to all documents, files or data of pbb, including management information and the minutes of all advisory and decision-making bodies whenever this appears to be relevant within the framework of their task. This also includes (physical) access to all premises as well as technical access to the IT systems.

In line with the Institutsvergütungsverordnung (Remuneration Ordinance for Institutions), the Internal Audit function is independently involved in monitoring the remuneration systems (in accordance with section 2 (9) in conjunction with section 3 (3) InstitutsVergV).

The Internal Audit function reports directly to the Management Board of pbb. The chairman of the Supervisory Board / Audit Committee may request information directly from the head of the Internal Audit function by involving the Management Board. In addition, the head of the Internal Audit function regularly reports audit results/planning to the Audit Committee.

The audit activities must cover all operating and business procedures, activities and processes based on a risk-oriented audit approach, taking account of the potential amount of loss and the probability of occurrence.

In particular, the following items are audited and assessed in accordance with MaRisk (Minimum requirements for risk management according to BaFin):

- The Internal Control System (ICS)
- The risk management and controlling processes
- The reporting and Information systems
- Finance and accounting
- Compliance with existing legal and regulatory requirements as well as other regulations

Disclosure Report as of 31 December 2019

- Compliance with operational guidelines, ordinances and regulations
- Security of the assets.

Audits also include outsourced functions. In addition, the tasks of the Internal Audit function also comprise special audits commissioned by the Management Board. The Internal Audit function also has to become involved in major projects, whilst maintaining its independence. It has to be informed in advance of all major projects so that it is able to define the nature and extent of project support in a timely manner.

The Internal Audit function has a complete and unlimited information right which must be guaranteed at all times. The requested information and documents must be promptly delivered to the Internal Audit function, and the Internal Audit function must be allowed to view the activities and processes as well as the IT systems.

In addition, all organisational units must automatically inform the Internal Audit function when serious defects are identified or considerable loss has occurred in their area of competence or in the event of an initial suspicion.

In particular, any significant risk-related information must also be immediately forwarded to the head of the Internal Audit function as well as to the management team and the responsible staff.

4.2 Risk types

pbb Group distinguishes the following major risk types for its business activities:

- Credit risk
- Market risk
- Liquidity and Funding risk
- Operational risk
- Business and strategic risk
- Property risk
- Pension risk.

In addition to the general principles of risk management described in chapter 4.1, further information is set out in chapters 5.1, 6.1, 7.1 and 8.1 of the Disclosure Report (in accordance with article 435 (1) CRR in conjunction with EU OVA, EU CRA, EU CCRA and EU MRA of the guidelines EBA/GL/2016/11 as well as EU LIQA of the guidelines EBA/GL/2017/01) regarding the risk management objectives and policy for the risk types credit risk (incl. counterparty credit risk), market risk, liquidity risk (incl. funding risk) as well as operational risk.

The risk types business and strategic risk, real estate risk and pension risk are defined as follows:

Business and strategic risk

Within pbb Group, business and strategic risk is defined as the risk of negative deviations of income and expenses from the planned figures – as a result of strategic decisions, false assumptions or unexpected changes in the external framework conditions, to the extent that such deviations are not covered by other risk types, such as market risk, credit risk or operational risk. Please refer to the chapter 4.3 „Economic capital and risk bearing capacity“ (ICAAP) for further details on the quantification as well as the calculation results of the economic capital of business and strategic risk.

Real estate risk

Property risk is defined as potential negative changes in the value of the Company's own property portfolio, due to a deterioration of the general real estate situation or a negative change of the specific characteristics of the individual property – caused by the property being vacant, changed usage options, building damages, investment requirements, changes to the legal framework or economic environment as well as other factors.

As at 31 December 2019, pbb did not hold any own properties.

Pension risk

Pension risk is defined as the risk of incurring additional expenses due to insufficient capitalisation of pension obligations from defined benefit plans. It is considered within the scope of ICAAP. For details, please refer to the chapter 4.3 „Economic capital and risk bearing capacity“ (ICAAP).

4.3 Economic capital and risk-bearing capacity

Internal Capital Adequacy Assessment Process (ICAAP)

Pursuant to section 91 (2) of the German Public Limited Companies Act (Aktiengesetz – “AktG”) and section 25a (1) of the German Banking Act (Kreditwesengesetz – “KWG”), pbb Group is obliged to establish appropriate and effective internal procedures in order to ensure the Bank’s risk-bearing capacity at all times. The Internal Capital Adequacy Assessment Process (ICAAP) is subject to regulatory review (within the framework of the Supervisory Review and Evaluation Process (SREP)); it complements the regulatory procedures under Pillar 1 of the Basel III framework, as laid down in the Capital Requirements Regulation (CRR) and the Fourth Capital Requirements Directive (CRD IV).

Pursuant to the “Multi-year plan on SSM Guides on ICAAP and ILAAP”, published by the European Central Bank in February 2017, and to the „ECB Guide to the internal capital adequacy assessment process (ICAAP)“, published in November 2018, regulatory authorities expect banks to apply two supplementary ICAAP perspectives: a normative and an economic perspective. Whilst the normative perspective is aimed at the fulfilment of all capital-related legal requirements, supervisory demands and internal objectives in the medium term, on an ongoing basis, the economic perspective covers all material risks which might threaten the institution’s economic viability.

Both perspectives are designed to safeguard the financial institution’s ability to survive: they are based on internal assessments of the capital required to safeguard the institution’s continued existence. Both perspectives have been implemented by pbb Group since 2018.

Within the normative perspective, capital-related regulatory and legal requirements comprise the CET1 ratio, tier 1 ratio, own funds ratio, Leverage Ratio, as well as rules concerning MREL (Minimum Requirements on Own Funds and Eligible Liabilities) and large loan exposure limits. Furthermore, pbb Group maintains transitionally the going-concern approach as an additional part of the normative perspective, since this is also geared towards protecting minimum regulatory capital ratios.

The economic perspective is an additional, parallel management approach on an equal footing that is monitored on an ongoing basis, with reports submitted on a monthly basis. It aims to safeguard the economic viability of the institution, and is therefore geared towards maintaining the institution’s net asset value. For this purpose, all material economic risks are viewed from a present value perspective, quantified as far as possible using models, and aggregated to economic capital. A confidence level of 99.9 % is used in the economic perspective.

pbb Group has implemented a risk-bearing capacity analysis for both perspectives which, in addition to determining key regulatory indicators, also applies the concept of economic capital for risk quantification in both the going-concern approach and the economic perspective. Economic capital is defined as the capital required to cover the financial risks with a predefined probability (the confidence interval) over a one-year horizon. It is calculated for all relevant types of risk, and aggregated to form total economic capital (after diversification effects). The capital available to cover total risk is calculated in both approaches, and compared to economic capital.

The risks identified in the risk inventory as higher-level risks having an impact on capital and income – i. e. market risk, credit risk, business and strategic risk, operational risk and real estate risk – are included in the ICAAP, using models or other methods to quantify the economic capital of these risk types. Within these types of risk, there are additional sub-risks on a granular level which were taken into account in the ICAAP during the period under review. Certain material types of risk, such as extension risk, settlement risk, realisation risk for defaulted loans, or pension risk, are integrated into the ICAAP in the form of buffers which are validated on a regular basis. Funding risk is included in business and strategic risk.

Over and above the risk-bearing capacity analysis, the ICAAP comprises additional management tools, including a system of limits and early-warning thresholds, as well as a comprehensive monthly monitoring and reporting process. Moreover, key indicators selected within the scope of base and stress scenarios are projected over a period of up to three years, with limits and early-warning thresholds also assigned to these figures. Limit compliance, in combination with an effective escalation process, supports the continuous safeguarding of an appropriate capitalisation for pbb Group.

The results of the ICAAP and of the stress tests are regularly presented to the Management Board and the Risk Committee. The content of the risk-bearing capacity analysis are discussed there – if necessary, management measures are defined.

The methods of calculating economic capital for the individual risk types, as well as risk indicators as at the reporting date, are described in greater detail in the following sections “Quantification of economic capital for individual risk types” and „Result of risk-bearing capacity analysis“.

Quantification of economic capital for individual risk types

For internal assessment of the Internal Capital Adequacy Assessment Process in line with the economic perspective, and the going-concern approach of the normative perspective, economic capital for quantifiable risks is determined using models or scenario analyses, and aggregated into overall bank risk using a mathematical/statistical approach, taking specific correlations between market and counterparty credit risks into account. Thereby risks are calculated for a one-year period, using a confidence level of 99.9 % for the economic perspective and 95 % for the going-concern approach.

The methods of calculating economic capital for the individual material risk types for 2019 are explained below.

Economic capital for credit risk

For calculating the credit risk at the portfolio level, pbb Group uses a credit portfolio model which is based on the approach of a so-called asset value model. The fundamental concept used involves the repeated simulation of correlated rating migrations for borrowers, whereby the associated portfolio revaluation is used to derive a statistical distribution of losses – which is in turn used to derive economic capital in terms of unexpected losses. Economic capital quantifies the maximum unexpected loss, given a pre-defined confidence level, which may be incurred due to rating migrations (including defaults) in the lending business within a single year. Besides the loss distribution of the credit portfolio, as a significant result of this process, credit risk capital can be assigned to individual borrower units in line with the risks involved, using the so-called expected shortfall principle. This ensures a risk-adequate allocation to borrowers, and thus constitutes a major cornerstone in the risk-oriented management of the credit portfolio. During the observation period, correlations between borrowers, borrower groups and regions were reviewed during the course of the regular validation process; updated correlations were applied during the fourth quarter of 2019.

Credit risk reported comprises default and migration risk, transfer and conversion risk, as well as concentration risk. Certain elements of credit risk, such as the realisation risk for defaulted clients, settlement risk, and extension risk are not reported directly as part of credit risk, but are instead taken into account as deductions in the available financial resources. The credit portfolio model is used to examine the appropriateness of these deductions on a regular basis. Furthermore, tenant risk is backed by capital using a buffer for risks which can only be partially quantified, or which cannot be quantified at all.

Economic capital for market risk (including pension risk)

The purpose of calculating economic capital for market risk is to identify potential financial losses resulting from price changes affecting all positions. In this process, the potential non-systematic losses are derived from an analysis of historical time series of specific influencing factors (risk factors), including interest rates, exchange rates and credit spreads, over the preceding ten years. The historical observation period for risk factors underlying market risk calculations still comprises ten years, to ensure that adverse economic phases for the Bank are adequately taken into account, and captured by the model. Ultimately, using a simulation procedure and applying sensitivities of financial instruments to risk factors, the annual loss distribution of portfolio market value is determined, which allows to determine economic capital at the set confidence level.

Besides the risk types described in the “Market Risk” chapter, the ICAAP also encompasses pension risk, which is not disclosed directly in economic capital for market risk; instead, it is deducted from available financial resources in the form of a buffer, which is validated on a regular basis.

Economic capital for operational risk

Within the framework of the ICAAP, operational risk is quantified using the so-called loss distribution approach (LDA), whereby distributions for damage amounts and frequency are determined individually, using internal loss data from the loss database. External and scenario-based data is also included in the modelling approach. The full loss distribution is generated using Monte Carlo simulation techniques; diversification effects between the various sub-types of risk and modelling categories are not being considered. Furthermore, it is ensured that the economic capital figure calculated does not fall short of a specific floor. This floor is in line with the adjusted regulatory capital determined in accordance with the standardised approach pursuant to the EU Capital Requirements Regulation (575/2013 (EU) – "CRR"). Sub-types of operational risk which can only be partially quantified, or which cannot be quantified at all, such as for instance model risk, are covered by way of a capital buffer.

Economic capital for business and strategic risk

The quantification of business and strategic risk in the ICAAP is based on a mixed approach, consisting of a Monte Carlo simulation of net interest income and a scenario analysis for other items in the income statement. When deriving available financial resources, pbb Group does not consider any planned profits. This way, a buffer at least equivalent to the amount of positive projected results is reserved for business and strategic risk, since this type of risk is defined as the risk of potential negative deviations from planned income and expenses. In case higher than planned gains are calculated within the scope of quantifying business and strategic risk, the value of business and strategic risk exceeding the planned annual profit of pbb Group is reported as a risk amount.

Liquidity risk in the ICAAP

Capital backing of liquidity risk in the narrower sense is not possible. Liquidity risk in the broader sense – i.e. the risk of higher funding costs for unexpected potential funding requirements, is mapped in economic capital for business and strategic risk.

Result of risk-bearing capacity analysis

Normative perspective

For a detailed description of the regulatory indicators measured as at the reporting date (CET1 ratio, tier 1 ratio, own funds ratio, MREL and Leverage Ratio), please refer to the chapter 3 "Own funds and assets". The readings for these indicators were non-critical at the reporting date. The future-oriented medium-term analysis of key capital ratios – as required by regulators – did not show any critical values according to the limit system, neither in the base scenario nor in the stress scenarios.

The internal goal of the normative perspective is to provide evidence of the Bank's risk-bearing capacity in accordance with the going-concern approach, whereby the economic capital is calculated using a confidence level of 95 %. This management approach, which also aims to safeguard the minimum regulatory capital ratios, showed the following results:

Table 20: Risk-bearing capacity based on a going-concern approach

All figures in € million, unless otherwise stated

Risk types	Going-concern		
	31.12.2019	31.12.2018	Change
Credit risk	170	189	-19
Market risk	203	133	70
Operational risk	25	24	1
Business and strategic risk	-	-	-
Total before diversification effects	398	346	52
Total after diversification effects	366	320	46
Available financial resources (free capital)	1,372	1,419	-47
Excess capital	1,006	1,099	-93
Capital Adequacy Ratio	27%	23%	4%

The main reason for the increase of the aggregate risk in 2019 was economic capital for market risk, which rose primarily due to the changed consideration of contractual floors for lending transactions in risk measurement, in line with the regulatory requirements stipulated by the EBA. Economic capital for credit risk declined slightly during the reporting period – above all, due to the decline in the Value Portfolio (VP) segment which was largely driven by the sale of a Portuguese bond, and also by rating changes. Economic capital for operational risk is determined at least annually and has seen a minor increase, resulting from an improvement as well as an update of data used in the model. In total, these developments during the period under review led to an increase in aggregate risk after diversification effects.

Available financial resources (known as 'free capital') are compared to aggregate risk (after diversification effects). Available financial resources decreased during the reporting period, primarily due to an increase of the CET1 capital tied up for regulatory purposes which was mainly attributable to the increase of risk-weighted assets. Accordingly, the Bank had less CET1 capital available for covering economic risk at the reporting date compared to year-end 2018.

The increase of economic capital after diversification effects and the decline in available financial resources overall resulted in a decrease of excess capital and an increase in the risk-bearing capacity ratio (defined as the ratio of diversified economic capital to available financial resources). Overall, the Bank's risk-bearing capacity at the reporting date was evidenced under the going-concern approach.

Economic perspective

In the economic perspective, aggregate risk after diversification effects declined slightly during the period under review. Overall, economic capital for credit risk declined, primarily in Value Portfolio (VP), Public Investment Finance (PIF) und Consolidation & Adjustments (C&A), due to the regular parameter adjustments in the credit portfolio model and due to maturity effects. The increase in Real Estate Finance (REF), which was largely driven by new business, higher loss given default, and parameter adjustments, partially offset the decline in credit risk. Market risk remained generally stable during the reporting period. A reduction could be observed that mainly resulted from credit spread risks, and which was primarily driven by roll-down effects. However, this movement was partially offset by the increase in the changed consideration of contractual floors for lending transactions in risk measurement, in line with EBA regulatory requirements. Economic capital for operational risk is determined at least annually, and has increased, resulting from an improvement as well as an update of data used in the model. In total, these developments during the period under review led to a decrease in aggregate risk after diversification effects.

Disclosure Report as of 31 December 2019

Table 21: Risk-bearing capacity economic perspective

All figures in € million, unless otherwise stated

Risk types	Economic perspective		
	31.12.2019	31.12.2018	Change
Credit risk	1,183	1,245	-62
Market risk	640	658	-18
Operational risk	97	85	12
Business and strategic risk	1	-	1
Total before diversification effects	1,921	1,988	-67
Total after diversification effects	1,747	1,814	-67
Available financial resources before net hidden losses	2,886	2,909	-23
Net hidden losses	-	-8	8
Available financial resources	2,886	2,901	-15
Excess capital	1,139	1,087	52
Capital Adequacy Ratio	61%	63%	-2%

This is contrasted by the available financial resources that changed only slightly in the reporting period and decreased slightly. Compared to the year-end 2018, excess capital rose slightly, whilst the risk-bearing capacity ratio (defined as the ratio of diversified economic capital to available financial resources), decreased slightly. Overall, the Bank's risk-bearing capacity at the reporting date was evidenced for the economic perspective as well.

Should credit spreads widen or credit ratings of European public debtors worsen, owing to economic or political developments, both a corresponding increase in credit risk and a reduction in available financial resources (given an increase in net hidden losses and lower equity) are to be expected, notwithstanding any countermeasures taken.

Opportunities and risks

Additional economic catalysts would further narrow credit spreads and generally improve ratings, strengthening available financial resources again and hence, excess coverage in the ICAAP.

The spread of the new corona virus which is now evident throughout the world means that the global economy is having to face enormous challenges, the extent of which is unparalleled in recent times. The public health measures taken to contain the virus are having a severe economic impact, particularly also on the core markets which are relevant for our business model. It is therefore possible that there might be an increase particularly in the credit and market risks in the remainder of the year and that the risk cover funds will be reduced by the increase in hidden losses or also by an increase in risk provisioning.

Stress testing

Stress tests play a major role, both from a supervisory perspective and for the Bank's internal management. All activities, developments and decisions relating to stress tests are coordinated and brought together within the Stress Test Committee, which reports directly to the Risk Committee.

As part of an integrated approach, the impact of macroeconomic stress scenarios on the material metrics of the normative and economic perspectives was calculated for a horizon of several years during the period under review. These scenarios focus on the impact of trade barriers, as well as on an unfavourable development on the real estate markets.

Furthermore, stress tests relating to economic capital and available financial resources are used to obtain a deeper understanding of the sensitivity of risk-bearing capacity to adverse changes in economic factors. In addition, inverse stress tests are con-

Disclosure Report as of 31 December 2019

ducted regularly. The results of these tests describe specific constellations of parameters under which the risk-bearing capacity would be at risk.

5 Credit risk

5.1 Management of credit risk (including counterparty credit risk)

Definition

The credit risk in general is defined as the risk due to an unexpected default or decline in the market value of a receivable (loan or bond) or a derivative (alternatively of an entire portfolio of claims/derivatives). The reason for this can be either a deterioration in a country's or counterparty's creditworthiness or by a deterioration in collateralization.

The credit risk comprises the default risk, migration risk, realization risk of defaulted positions, transfer and conversion risk, tenant risk, settlement risk, extension risk as well as concentration risk which are defined as follow in pbb Group's risk strategy:

Default risk

Default risk denotes the risk of a default occurring on receivables. This includes defaults of loans or other credit products (lending risk), or bonds and other securities (issuer risk), as well as the risk of default on receivables under derivatives contracts (counterparty risk/replacement risk) or money market transactions (repayment risk). The possible default of sovereign or regional governments is included as a special case (sovereign default risk).

Migration risk

Migration risk is the risk of a loss in value of a receivable caused by rating migration. This includes both the risk of rating migrations of traditional borrowers as well as rating migration of bonds and other securities and receivables from derivatives and money market transactions. The impact of a rating migration concerning sovereign or regional governments as a special case is included, too.

Realisation risk

Realisation risk related to defaulted clients is the risk that the risk provisioning recognised changes over the analysis period, or the risk of actual amounts realised differing from the risk provisioning.

Transfer risk

Transfer risk is the risk that a government or central bank restricts the use of the currency to their own country. This includes the conversion risk, which is the risk that a government or central bank declares its own currency as non-convertible. Together with the sovereign risk, the transfer and the conversion risk form the country risk.

Tenant risk

Tenant risk describes the risk that losses in rental income for properties will negatively influence the respective borrowers' debt service capacity. In addition, it includes the secondary concentration risk (tenant cluster risk), which arises when one and the same tenant is involved in multiple properties funded by the bank.

Fulfilment risk

Fulfilment risk is defined as the risk that the Bank makes a payment or delivers an asset which has been sold to a counterparty but does not receive a payment or the purchased asset.

Extension risk

Extension risk is the risk of an unexpected extension of the holding period of a credit risk related asset.

Concentration risk

Concentration risk is defined as the risk of cluster formation in relation to a risk factor or counterparty, or a strongly correlated group of risk factors or counterparties.

Risk strategy and principles

pbb Group has broken down the overall credit portfolio into the segments Real Estate Finance (REF), Public Investment Finance (PIF), Value Portfolio (VP) and "Consolidation & Adjustments" (C&A). The strategic business is attributable to commercial Real Estate Finance (REF) and Public Investment Finance (PIF). The risk strategy of pbb Group also reflects this structure.

Please refer to the information in the chapter 2.1 "Organisational and legal structure" for a description of the business focus with regard to strategic portfolios, and for statements outlining the strategy adopted for the run-down portfolio.

Risk reporting

The credit risk reports of pbb Group provide information about the following main components:

Group Risk Report

The pbb Group Risk Report contains the development in volumes as well as relevant credit risk management indicators such as the development of the expected loss as well as the unexpected loss via value at risk (VaR). The report shows the credit risk at the level of pbb Group in the context of the overall bank risk and the risk-bearing capacity, it reports limit utilisations and violations of existing limits, and also identifies risk concentrations. Key indicators, such as the development of the exposure at default (EaD), the expected loss (EL), the credit value at risk (Credit VaR) as well as problem loans are integrated in this report and are discussed by the Management Board; the report is also submitted to the RLA of the Supervisory Board to be noted and dealt with by the RLA regularly in its meetings.

New business

For decisions to be made regarding new business, or regarding material changes to the credit quality of existing financings (such as a maturity extension), key financial indicators, content and analysis are presented to, and discussed by the Credit Committee.

Active business

In the active business, further regular reports support operational management with regard to the management and timely recognition of risks at the sub-portfolio level.

Unusual developments

Unusual developments which might result in a major deterioration in the risk position of an individual exposure are ad-hoc reported to a wider group up to the CRO by way of so-called "Credit Issue Notes".

Risk quantification via economic capital and risk-weighted assets according to CRR

Credit portfolio model

For calculating the economic capital for credit risk pbb Group uses a credit portfolio model. For details concerning this model and economic credit risk quantification, please refer to the chapter 4.3 “Economic capital and risk-bearing capacity” (ICAAP).

Stress testing

The stress tests for economic capital in credit risk are described in greater detail in the chapter 4.3 “Economic capital and risk-bearing capacity” (ICAAP).

In addition to the stress tests for economic capital, there are also RWA reverse stress tests. These are designed to examine the extent to which a certain risk parameter (e.g. rating, loss given default (LGD), currency) may change before a minimum ratio (Tier 1 ratio, Common Equity Tier 1 (CET1) ratio or own funds ratio) is no longer met. The minimum ratios are based on the bank-specific SREP ratios. Tolerance change levels have been defined for all tested risk parameters; these levels must not be violated if the test of pbb Group is to be successfully completed.

Risk quantification according to CRR

The Basel III Framework Agreement of the Basel Committee was implemented in the European context by means of the Capital Requirements Regulation (“CRR”). pbb Group applies the so-called Advanced Internal Rating-Based Approach (Advanced IRBA) and the Standardised Approach (CRSA).

Risk management and monitoring

Risk management

At the portfolio level, the intended portfolio structure is defined in the risk strategy by means of structure components. The limits are also based on the available financial resources, and include for pbb Group for example:

- Limiting of country risks
- Definition of strategic risk parameters (e.g. regions, financing duration).

The following reports and measures are key elements for monitoring compliance with the defined limits and the intended risk and return parameters at the portfolio level and also at the level of individual transactions:

- Analysis of portfolio developments in the Risk Committee
- Determining the credit-VaR at the portfolio level by way of a credit portfolio model and partly limiting at the segment level; analysis of concentration risks and various stress tests
- Central Group-wide monitoring of risk concentrations by way of special, regular and ad hoc evaluations, such as regional or product-specific evaluations
- Continuous analysis of the portfolio and the relevant markets by the local Credit Risk Management units
- Regular evaluation of the collateral
- Special reports for exposures which are potentially at risk (e. g. “credit issue notes”)
- Calculation of a risk-adjusted margin using the economic return after tax.

Depending upon the counterparty group, Expected Loss class or exposure size at GCC (Group of Connected Clients) level, the lending authority regulations determine the approval powers for new as well as existing exposures. Approval powers are assigned to individual employees in line with their individual experience and qualification.

Risk management and monitoring

At the level of individual transactions, the credit process guidelines define the necessary steps of assessing risk for new business as well as for substantial changes as prolongations or increase of credit limit and the procedures for transferring exposures to the watchlist or workout.

Core processes of credit risk management and monitoring as well as the relevant areas of the CRO function which are involved are described in the following:

The CRM entities carry out the initial risk analysis for new business and annual risk analysis for existing business. Probability of default (PD) and loss given default (LGD) rating tools, which are developed in the unit RMC and annually validated and calibrated, are used for valuation purposes and for preparing the credit decision in new and prolongation business. Property Analysis & Valuation (PAV) provides support for analysing and valuing collateralised properties.

The Legal department, where appropriate together with external lawyers/lawyers' offices, is responsible for the contract and collateral organisation.

Defined early warning indicators are constantly monitored by CRM. If essential problems are identified, an exceptional test is performed on the credit default risk (including a review of the value of collateral) and appropriate alternative actions are identified. Such cases are also included in a monthly, at least quarterly monitoring cycle and presented in the Watchlist Committee.

If there are indicators for a deterioration of credit quality, the level of the stage 3 impairment is calculated in accordance with IFRS or, in the case of specific allowances, in accordance with the HGB. In the Risk Provisioning Committee, the results are discussed and, where necessary, decisions are taken with regard to creating or reversing stage 3 impairments/specific allowances.

Where an individual decision is taken as to whether a critical exposure – in the form of a stage 3 impairment (IFRS) or a specific allowance (HGB) – is to be restructured or liquidated, scenario analyses outlining the potential development of the borrower, of collateral and/or the relevant market, are taken into account. These analyses are presented to the Credit Committee, which approves them or issues a recommendation for approval to holders of higher lending authority.

Critical exposures (watchlist) as well as restructuring and workout cases (non-performing loans) are reported on an aggregate basis monthly in the Group Risk Report and in the Risk Committee and also, upon request, in special analyses to the Management Board and Supervisory Board.

Risk hedging and risk mitigation

Real Estate Finance

In the REF segment, financing arrangements are normally backed by property charges. On the occasion of the regular credit reports for existing financing arrangements or as part of the decision-making process in the case of new financing, the LTVs (loan-to-value) as well as the property (amongst others micro and macro location, rental situation, condition of property) and market circumstances are discussed and are also taken into consideration as part of the assessment process for individual loans.

In addition to the property charge, the financing security in the REF segment also generally comprises amongst others rent assignment as well as the assignment of insurance claims, accompanied by extensive notification and consultation obligations of the borrowers. Apart from the property charges, only a few more selected securities are considered to be of value in the credit assessment process or in the calculation of LGD, and in particular this is applicable for cash security, furthermore under certain circumstances bank guarantees, other credit protections as well as guarantees of public-sector institutions. Corresponding risk

buffers are considered in relation to foreign currency collateral, that means in a currency differing from the loan currency, in order to take account of potential exchange rate risks.

Properties in the REF business are valued using strict quality criteria. Property collateral values are determined when the loan is initially granted, and reviewed on an annual basis. With Property Analysis & Valuation (PAV), pbb maintains an independent real estate analysis unit which reports to the Management Board member responsible for Treasury: All staff members in the PAV department who are involved in real estate analysis are certified in accordance with ISO 17024 (HypZert standard), and have usually gained additional qualifications (such as RICS membership). This department is always involved in the initial valuation (when a new loan is granted) or regular revaluations, as well as in the valuation reviews which are carried out at least once a year. Depending on the type and location of the property involved, market developments and other risk indicators, valuation reviews may also be carried out, in some cases, by credit department staff (CRM), based on defined parameters and processes.

For development financings, regular monitoring comprises the monitoring of planning progress, budget, procurements, construction schedule, sales/letting progress and construction stage. As a rule, for complex developments, monitoring is carried out by external project monitors on the Bank's behalf, on a monthly to quarterly basis, coordinated and supervised by PAV. For less complex developments, construction progress is monitored at least every three months, by experienced and specialised internal property analysts. CRM monitors costs, thus facilitating a current overview of actual costs, as well as a cost projection for the project, which is reconciled against the results of internal monitoring (as well as external monitoring, if applicable). This allows for recognition of any divergence from project planning (and hence, project risks during construction) as early as possible.

Public Sector Finance

In the PIF segment, guarantees are often accepted as collateral (including contractual guarantees from public-sector authorities, export credit guarantees). Moreover, Public Investment Finance exposures often involve a specific legal framework, such as the maintenance obligation (the so called Anstaltslast) of public-sector entities in Germany, or other (direct and indirect) cover mechanisms which allow for recourse to a public-sector institution in the case of borrowers organised under public law. For some exposures in PIF, guarantees and indemnities or the legal framework are supplemented by additional loan collateral, as well as borrowers' disclosure or consultation duties. However, such additional loan collateral is generally not considered as valuable in assessing the exposure, or for the purposes of calculating LGD.

Treasury

In Treasury, mainly cash contributions and securities are made available or accepted as collateral when trading with other banks. The collateralisation is based on standard agreements, which can be amended in individual cases if required or which can be subjected to individual review by the legal department.

Opportunities

The parameters for the risk dimensions for the credit risk are defined using statistical methods on the basis of numerous historical observations. The risk measures also depend on assumptions relating to future developments of macro-economic factors as well as developments on the credit markets. These economic conditions may turn out to be more positive than anticipated; in which case, potential losses from counterparty credit risk may theoretically be lower than quantified by the risk measures. Such potentially positive developments then represent opportunities for the pbb Group which can be utilised for reducing risk.

In specific terms, there are opportunities if fewer loans in future are affected by a default in performance than is assumed as part of the risk quantification process.

There are also opportunities if there are in future fewer migrations to less positive rating categories than assumed.

There are also opportunities if the loss ratios of non-performing loans in future are lower than was assumed as part of the risk quantification process. Lower loss ratios may be triggered by various positive developments. Firstly, it is possible that the process of disposing of collateral might generate higher proceeds than was originally assumed in the risk quantification process.

Disclosure Report as of 31 December 2019

Secondly, it is possible that a higher percentage of non-performing loans subsequently become performing loans again without any losses than had been the case in the past.

Besides positive developments in default rates or loss ratios, opportunities may arise in connection with counterparty credit risk – theoretically, and regardless of other corporate objectives – in the event of declining portfolio exposure. For instance, this may occur if borrowers redeem or repay their loans faster than anticipated, given contractual agreements or historical data. Exposure values in the derivatives portfolio may decline where the market values of positions associated with replacement risk decrease, due to changes in certain market parameters such as interest rates or exchange rates.

5.2 General information concerning the credit risk

In accordance with article 442 CRR in conjunction with the guidelines EBA/GL/2016/11, the following sections contain information concerning the credit risk, for exposures for which the pbb Group calculates the risk-weighted receivables using the standardised approach (CRSA) or the advanced IRB approach (IRBA) based on the bank's internal rating procedures.

This is not applicable for exposures for which the value of the receivable is calculated in accordance with part 3, title II, chapter 6 "Counterparty credit risk" or part 3, title II, chapter 5 "Securitisation" of the CRR. These derivative transactions and securitisations are described in the chapters 5.6 "Counterparty credit risk" and 5.8 "Securitisations".

Credit portfolio

The net value of the on-balance-sheet and off-balance-sheet exposures amounted to a total of € 56,441 million as of 31 December 2019 (31 December 2018: € 58,528 million); of this figure, € 29,510 million (52 %) is attributable to the IRB approach and € 26,931 million (48 %) is attributable to the standardised approach. The net value of an exposure is defined as the gross carrying amount after deduction of impairments on financial assets (stage 1 to 3) and provisions in lending business as well as after depreciation, but before the application of credit risk mitigation techniques and before credit conversion factors (CCF) for off-balance-sheet receivables.

The first table in accordance with article 442 letter c CRR in conjunction with EU CRB-B of the EBA/GL/2016/11 shows the net value of exposures as well as the average amount of the exposures in the course of the reporting period, broken down in each case according to the IRB approach and the standardised approach and also broken down according to IRBA and CRSA exposure categories.

The following three tables in accordance with article 442 letters d, e and f CRR in conjunction with EU CRB-C, EU CRB-D and EU CRB-E of the EBA/GL/2016/11 show the net value of the exposures according to major geographical regions, economic sectors (NACE code) as well as remaining maturities, also broken down according to IRBA and CRSA exposure categories.

Disclosure Report as of 31 December 2019

Table 22: Total and average amount of exposures (EU CRB-B)

All figures in € million

Exposure classes IRB approach and standardised approach	Net value of exposures ¹⁾ 31.12.2019	Average net exposures ²⁾ over the period 01.01. to 31.12.2019
	a	b
1 Central governments and central banks	-	13,521
2 Institutions	-	4,801
3 Corporates	29,438	32,175
4 thereof: specialised lending	25,476	26,268
5 thereof: small and medium-sized enterprises (SME)	2,087	1,996
6 Retail	-	-
14 Equity	0.02	0.02
14a Other non credit-obligation assets	72	55
15 Total IRB approach	29,510	50,553
16 Central governments or central banks	10,462	2,615
17 Regional governments or local authorities	6,946	1,778
18 Public sector entities	2235.0	559
19 Multilateral development banks	830	839
20 International organisations	133	33
21 Institutions	1,151	306
22 Corporates	3,004	1,628
23 thereof: small and medium-sized enterprises (SME)	239	144
24 Retail	-	-
25 thereof: small and medium-sized enterprises (SME)	-	-
26 Secured by mortgages on immovable property	641	235
27 thereof: small and medium-sized enterprises (SME)	209	57
28 Exposures in default	99	27
29 Exposures associated with particularly high risk	199	50
30 Covered bonds	1,139	285
31 Exposures to institutions and corporates with short-term credit assessment	-	-
32 Exposures in the form of units or shares in collective investment undertakings (CIUs)	3	3
33 Equity exposures	-	-
34 Other items	90	46
35 Total standardised approach	26,931	8,404
36 Total	56,441	58,957

1) Net value of the exposure: Gross carrying value after deduction of credit losses allowances on financial assets and provisions in the lending business as well as write-offs, but before considering any credit risk mitigation (CRM) techniques and before credit conversion factors (CCF).

2) The average is based on a quarterly determination of the net exposure values, calculated at the end of each quarter during the reporting period.

Disclosure Report as of 31 December 2019

Table 23: Exposures by geographical area (EU CRB-C)

All figures in € million

Significant geographical areas ¹⁾	Net value of exposures ²⁾																	
	Euro area countries							Other EU countries			Rest of Europe	Africa	America	Asia	Oceania	Other areas ³⁾	Total	
	thereof:	Germany	France	Austria	Luxem- burg	Spain	Italy	thereof:	Poland	United Kingdom			thereof:	USA				
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	
1 Central governments and central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2 Institutions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3 Corporates	20,982	10,440	3,304	467	4,607	303	86	3,922	1,302	1,191	1,314	79	3,141	2,818	-	-	-	29,438
3a thereof: specialised lending	17,191	6,856	3,103	467	4,601	303	86	3,802	1,302	1,072	1,307	79	3,096	2,773	-	-	-	25,476
3b thereof: SMEs	1,923	1,715	201	-	7	-	-	119	-	119	-	-	45	45	-	-	-	2,087
4 Retail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5 Equity	0.02	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02
5a Other non credit-obligation assets	72	72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72.00
6 Total IRB approach	21,054	10,511	3,304	467	4,607	303	86	3,922	1,302	1,191	1,314	79	3,141	2,818	0	0	0	29,510
7 Central governments or central banks	9,791	1,490	893	5,178	-	228	1,491	395	267	2	-	48	-	-	227	-	-	10,462
8 Regional governments or local authorities	6,594	3,341	1,878	-	-	881	461	237	-	196	-	-	22	-	92.0	-	-	6,946
9 Public sector entities	2,235	551	1,303	-	-	72	-	-	-	-	-	-	-	-	-	-	-	2,235
10 Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	830	830
11 International organisations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	133	133
12 Institutions	1,129	788	4	299	1	-	-	15	-	13	1	-	5	5	-	-	-	1,151
13 Corporates	2,438	586	675	679	24	-	-	-	-	-	109	82	247	-	129.0	-	-	3,004
14 Retail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 Secured by mortgages on immovable property	490	384	-	-	106	-	-	66	-	-	-	-	85	85	-	-	-	641

Disclosure Report as of 31 December 2019

All figures in € million

Significant geographical areas ¹⁾	Net value of exposures ²⁾																		
	Euro area countries							Other EU countries			Rest of Europe	Africa	America		Asia	Oceania	Other areas ³⁾	Total	
	thereof:	Germany	France	Austria	Luxemburg	Spain	Italy	thereof:	Poland	United Kingdom			thereof:	USA					
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	
16	Exposures in default	2	1	-	-	-	-	-	-	-	-	-	97	97	-	-	-	99	
17	Exposures associated with particularly high risk	199	199	-	-	-	-	-	-	-	-	-	-	-	-	-	-	199	
18	Covered bonds	1,139	-	-	-	890	-	-	-	-	-	-	-	-	-	-	-	1,139	
19	Exposures to institutions and corporates with short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	Exposures in the form of units or shares in collective investment undertakings (CIUs)	3	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	3	
21	Equity exposures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
22	Other items	90.00	90.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	90.00	
23	Total standardised approach	24,110	7,432	4,752	6,157	134	2,071	1,952	714	267	211	110	130	457	187	447	0	963	26,931
24	Total	45,164	17,944	8,056	6,624	4,742	2,374	2,038	4,635	1,569	1,402	1,424	209	3,598	3,005	447	0	963	56,441

1) The regional allocation depends on the country of residence of the immediate borrower, counterparty or issuer and corresponds to the "Nomenclature of countries" of the German Central Bank.

2) Net value of the exposure: Gross carrying value after deduction of credit losses allowances on financial assets and provisions in the lending business as well as write-offs, but before considering any credit risk mitigation (CRM) techniques and before credit conversion factors (CCF).

3) Includes supranational organisations, which, according to EBA/GL/2016/11, are not to be assigned to the country where the Institute has its headquarters, but under "Other (geographical) areas".

Disclosure Report as of 31 December 2019

Table 24: Exposures by industry (EU CRB-D)

All figures in € million

Significant industries according to NACE Code ²⁾	Net value of exposures ¹⁾																				
	Agriculture, forestry and fishing	Mining and quarrying	Manufacturing	Electricity, gas, steam and air conditioning supply	Water supply	Construction	Wholesale and retail trade	Transport and storage	Accommodation and food service activities	Information and communication	Financial and insurance activities	Real estate activities	Professional, scientific and technical activities	Administrative and support service activities	Public administration and defence, compulsory social security	Education	Human health services and social work activities	Arts, entertainment and recreation	Other services	Activities of households as employers	Total
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u
1 Central governments and central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2 Institutions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3 Corporates	-	-	-	-	-	476	4	-	-	-	846	27,986	104	7	-	-	-	-	-	15	29,438
3a thereof: specialised lending	-	-	-	-	-	443	-	-	-	-	811	24,122	99	1	-	-	-	-	-	-	25,476
3b thereof: SMEs	-	-	-	-	-	25	-	-	-	-	31	2,017	4	5	-	-	-	-	-	4	2,087
4 Retail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5 Equity	-	-	-	-	-	-	-	-	-	-	0.02	-	-	-	-	-	-	-	-	-	0.02
5a Other non credit-obligation assets	-	-	-	-	-	-	-	-	-	-	72	-	-	-	-	-	-	-	-	-	72
6 Total IRB approach	0	0	0	0	0	476	4	0	0	0	917	27,986	104	7	0	0	0	0	0	15	29,510
7 Central governments or central banks	-	-	-	-	-	-	-	-	-	-	1,141	-	-	-	9,320	-	-	-	-	-	10,462
8 Regional governments or local authorities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6,946	-	-	-	-	-	6,946
9 Public sector entities	-	-	-	-	184	-	-	75	4	-	320	191	-	-	710	80	671	-	-	-	2,235
10 Multilateral development banks	-	-	-	-	-	-	-	-	-	-	830	-	-	-	-	-	-	-	-	-	830
11 International organisations	-	-	-	-	-	-	-	-	-	-	121	-	-	-	12	-	-	-	-	-	133
12 Institutions	-	-	-	-	-	-	-	-	-	-	1,151	-	-	-	-	-	-	-	-	-	1,151
13 Corporates	-	-	58	82	3	65	-	110	73	28	362	793	158	156	974	-	6	134	-	2	3,004
14 Retail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 Secured by mortgages on immovable property	-	-	-	-	-	16	-	-	5	-	16	544	45	4	-	-	-	-	-	10	641

Disclosure Report as of 31 December 2019

All figures in € million

Significant industries according to NACE Code ²⁾	Net value of exposures ¹⁾																					
	Agriculture, forestry and fishing	Mining and quarrying	Manufacturing	Electricity, gas, steam and air conditioning supply	Water supply	Construction	Wholesale and retail trade	Transport and storage	Accommodation and food service activities	Information and communication	Financial and insurance activities	Real estate activities	Professional, scientific and technical activities	Administrative and support service activities	Public administration and defence, compulsory social security	Education	Human health services and social work activities	Arts, entertainment and recreation	Other services	Activities of households as employers	Total	
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	
16 Exposures in default	-	-	-	-	-	-	-	-	-	-	98	-	-	-	-	-	-	-	-	-	1	99
17 Exposures associated with particularly high risk	-	-	-	-	-	131	-	-	-	-	-	69	-	-	-	-	-	-	-	-	-	199
18 Covered bonds	-	-	-	-	-	-	-	-	-	-	1,139	-	-	-	-	-	-	-	-	-	-	1,139
19 Exposures to institutions and corporates with short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20 Exposures in the form of units or shares in collective investment undertakings (CIUs)	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	3
21 Equity exposures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22 Other items	-	-	-	-	-	-	-	-	-	-	90	-	-	-	-	-	-	-	-	-	-	90
23 Total standardised approach	0	0	0	0	187	211	0	185	82	28	5,269	1,597	204	160	17,962	80	678	134	0	13	26,931	
24 Total	0	0	0	0	187	687	4	185	82	28	6,186	29,583	308	167	17,963	80	678	135	0.0	28	56,441	

1) Net value of the exposure: Gross carrying value after deduction of credit losses allowances on financial assets and provisions in the lending business as well as write-offs, but before considering any credit risk mitigation (CRM) techniques and before credit conversion factors (CCF).

2) NACE Regulation; Statistical classification of economic activities in the European Community. The allocation depends on the basis of the principal activity of the immediate counterparty.

Disclosure Report as of 31 December 2019

Table 25: Exposures by residual maturity (EU CRB-E)

All figures in € million

Residual maturity	Net value of exposures ¹⁾					Total
	On demand	≤ 1 year	> 1 year to ≤ 5 years	> 5 years	No stated maturity	
	a	b	c	d	e	
1 Central governments and central banks	-	-	-	-	-	-
2 Institutions	-	-	-	-	-	-
3 Corporates	5	3,196	18,834	7,404	-	29,438
3a thereof: specialised lending	4	3,008	17,695	4,769	-	25,476
3b thereof: SMEs	-	73	575	1,439	-	2,087
4 Retail	-	-	-	-	-	-
5 Equity	-	-	-	-	-	-
5a Other non credit-obligation assets	-	72	-	-	-	72
6 Total IRB approach	5	3,267	18,834	7,404	0	29,510
7 Central governments or central banks	-	1,350	1,411	7,700	-	10,462
8 Regional governments or local authorities	-	767	968	5,211	-	6,946
9 Public sector entities	-	75	349	1,810	-	2,235
10 Multilateral development banks	-	-	410	420	-	830
11 International organisations	-	-	133	-	-	133
12 Institutions	-	42	37	1,072	-	1,151
13 Corporates	-	177	940	1,886	-	3,004
14 Retail	-	-	-	-	-	-
15 Secured by mortgages on immovable property	1	18	463	159	-	641
16 Exposures in default	-	-	57	42	-	99
17 Exposures associated with particularly high risk	-	69	131	-	-	199
18 Covered bonds	-	-	720	419	-	1,139
19 Exposures to institutions and corporates with short-term credit assessment	-	-	-	-	-	-
20 Exposures in the form of units or shares in collective investment undertakings (CIUs)	-	3	-	-	-	3
21 Equity exposures	-	-	-	-	-	-
22 Other items	-	-	-	-	90	90
23 Total standardised approach	1	2,501	5,618	18,720	90	26,931
24 Total	6	5,769	24,452	26,124	90	56,441

1) Net value of the exposure: Gross carrying value after deduction of credit losses allowances on financial assets and provisions in the lending business as well as write-offs, but before considering any credit risk mitigation (CRM) techniques and before credit conversion factors (CCF).

The net value of the on-balance-sheet and off-balance-sheet exposures for credit risks (excl. counterparty credit risks) of the pbb Group as of 31 December 2019 declined by € 2,087 million compared with the end of 2018, by approximately 4 % to a total of € 56,441 million. This decline is mainly attributable to repayments of loans and bonds which fell due as well as redemptions, including the further reduction in the non-strategic portfolio in line with overall strategy. This was opposed mainly by the new business in commercial real estate financing (real estate finance, REF) which was carried out in the financial year 2019. The strongest portfolio growth for this business was reported for Germany and the USA.

The regional focus of the exposures of the pbb Group continues to be in Europe and the USA (unchanged). The main core markets are Germany, France, the United Kingdom, the Nordic countries, some Central- and Eastern-European countries, Spain, Benelux as well as the USA. With approx. € 17.9 billion, Germany continues to account for the main percentage of exposures (32 %). The other countries of the European Monetary Union (excl. Germany) account for € 27.2 billion (48 %), and other EU countries account for € 4.6 billion (8 %). In the USA, the net value of the exposures increased to approx. € 3.0 billion compared with the previous year (5 %).

As was the case in the previous year, the main focus of the sectors using the NACE codes (based on the main business activity of the counterparty) continues to comprise the sectors "Real estate and renting" with a volume of € 29.6 billion (52 %), "Public

administration, defence, compulsory social security" with € 18.0 billion (32 %) and "Rendering of financial and insurance services" with € 6.2 billion (11 %). The other economic sectors in accordance with the NACE code together account for approximately 5 %; when considered individually, they generally account up to 1 % of the exposures.

Credit quality

The following tables in accordance with article 442 letters g and h CRR in conjunction with EU CR1-A, EU CR1-B, EU CR1-C, and CRB-A of the EBA/GL/2016/11 contain information regarding the credit quality of the on-balance-sheet and off-balance-sheet exposures, including the defaulted and non-defaulted exposures as well as the associated credit risk adjustments and impairments in the course of the reporting period. These tables also show a break-down according to exposure categories, based on major geographical regions or economic sectors (NACE code), past-due ranges or the type of the exposure.

pbb has applied the guidelines EBA/GL/2018/10 concerning the disclosure of non-performing and forborne exposures for the first time as of 31 December 2019. As was the case at the end of the previous year, the pbb Group at the end of 2019 reports a gross NPL ratio (gross carrying amount of the non-performing loans divided by the gross carrying amount of the non-performing and performing loans) of considerably less than 5 %, and therefore discloses the tables EU NPL1, EU NPL3, EU NPL4 and EU NPL9. As provided for in the guidelines EBA/GL/2018/10, these NPL tables are drawn up in line with the regulations of the notification of regulatory financial information in accordance with IFRS (FINREP notification). Accordingly, these are not comparable with the tables based on the COREP notification of own funds and own funds requirements (such as EU CR1-A to EU CR1-C). In accordance with note 15 of the EBA guidelines, the pbb Group regularly assesses whether further disclosure obligations have to be recognised as a result of the threshold of 5 % for the NPL ratio being exceeded.

In accordance with point 17 of the guidelines EBA/GL/2018/10, the new NPL tables replace the tables, published in the previous year, EU CR1-D "Maturity structure of past-due exposures" and EU CR1-E "Non-performing and forborne exposures" in accordance with the guidelines EBA/GL/2016/11. The new NPL tables also show the credit quality of non-performing and forborne exposures as well as the associated credit risk adjustments and securities/guarantees which have been received. The table EU NPL9 provides an overview of the salvage acquisitions carried out by the institution which result from non-performing exposures and which were acquired by way of seizure. As of 31 December 2019, the table is not relevant for the pbb Group. The pbb Group had not carried out any salvage acquisitions as of the reporting date.

Disclosure Report as of 31 December 2019

Table 26: Credit quality of exposures by exposure classes and instruments (EU CR1-A)

All figures in € million

Exposure classes and instruments	Gross carrying values of						Net values ²⁾ (a + b - c - d)
	Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs in the year 2019	Credit risk adjustment charges in the year 2019 ¹⁾	
	a	b	c	d	e	f	
1 Central governments and central banks	-	-	-	-	-	-	-
2 Institutions	-	-	-	-	-	-	-
3 Corporates	411	29,131	103	-	36	37	29,438
4 thereof: specialised lending	400	25,173	97	-	34	35	25,476
5 thereof: SMEs	8	2,083	4	-	1	2	2,087
6 Retail	-	-	-	-	-	-	-
14 Equity	-	0.02	-	-	-	-	0.02
14a Other non credit-obligation assets	-	72	-	-	-	-	72
15 Total IRB approach	411	29,203	103	0	36	37	29,510
16 Central governments or central banks	-	10,464	2	-	-	1	10,462
17 Regional governments or local authorities	-	6,946	1	-	-	0.3	6,946
18 Public sector entities	-	2,236	1	-	-	0.3	2,235
19 Multilateral development banks	-	830	-	-	-	-	830
20 International organisations	-	133	-	-	-	-	133
21 Institutions	-	1,151	-	-	-	-	1,151
22 Corporates	98	3,032	28	-	-	10	3,102
23 thereof: small and medium-sized enterprises (SME)	-	240	0.4	-	-	0.1	239
24 Retail	1	0.2	0.02	-	-	-	1
25 thereof: small and medium-sized enterprises (SME)	-	-	-	-	-	-	-
26 Secured by mortgages on immovable property	-	641	-	-	-	-	641
27 thereof: small and medium-sized enterprises (SME)	-	209	-	-	-	-	209
28 Exposures in default ³⁾	99	-	0.02	-	-	-	99
29 Exposures associated with particularly high risk	-	200	0.3	-	-	0.1	199
30 Covered bonds	-	1,139	0.3	-	-	0.1	1,139
31 Exposures to institutions and corporates with short-term credit assessment	-	-	-	-	-	-	-
32 Exposures in the form of units or shares in collective investment undertakings (CIUs)	-	3	-	-	-	-	3
33 Equity exposures	-	-	-	-	-	-	-
34 Other items	-	90	-	-	-	-	90
35 Total standardised approach	99	26,864	32	0	0	12	26,931
36 Total	510	56,067	135	0	36	49	56,441
37 thereof: loans	509	42,406	124	-	36	51	42,791
38 thereof: debt securities	-	9,135	3	-	-	-3	9,132
39 thereof: off-balance-sheet exposures	0.4	4,366	8.00	-	-	1	4,358

1) Additions less reversals of credit losses allowances on financial assets and provisions in the lending business and less income from recoveries from written-off financial assets.

2) Net value of the exposure: Gross carrying value after deduction of credit losses allowances on financial assets and provisions in the lending business as well as write-offs, but before considering any credit risk mitigation (CRM) techniques and before credit conversion factors (CCF).

3) According to EBA-Q&A 2017-3481, the defaulted exposures as of the reporting date (column a) are shown in the CRSA exposure category "Defaulted exposures" (line 28) and also in the original exposure category (lines 16 - 27 and 29 - 34). However, in line 35 (total amount in CRSA), these are included only once in order to avoid being recognised twice.

Disclosure Report as of 31 December 2019

Table 27: Credit quality of exposures by industry (EU CR1-B)

All figures in € million

Significant industries ¹⁾	Gross carrying values of						Net values ³⁾ (a + b - c - d)
	Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs in the year 2019	Credit risk adjustment charges in the year 2019 ²⁾	
	a	b	c	d	e	f	
1 Agriculture, forestry and fishing	-	-	-	-	-	-	-
2 Mining and quarrying	-	-	-	-	-	-	-
3 Manufacturing	-	58	-	-	-	-	58
4 Electricity, gas, steam and air conditioning supply	-	82	-	-	-	-	82
5 Water supply	-	187	-	-	-	-	187
6 Construction	0.1	689	1	-	-	1	687
7 Wholesale and retail trade	-	4	-	-	2	-	4
8 Transport and storage	-	185	0.1	-	-	-	185
9 Accommodation and food service activities	-	82	-	-	-	-	82
10 Information and communication	-	28	-	-	-	-	28
10a Financial and insurance activities	97	6,090	1	-	-	0.4	6,186
11 Real estate activities	410	29,276	103	-	34	37	29,583
12 Professional, scientific and technical activities	-	308	0.1	-	-	-	308
13 Administrative and support service activities	0.4	167	1	-	-	0.3	167
14 Public administration and defence, compulsory social security	-	17,991	29	-	-	10	17,963
15 Education	-	80	-	-	-	-	80
16 Human health services and social work activities	-	679	1	-	-	-	678
17 Arts, entertainment and recreation	-	135	0.03	-	-	-	135
18 Other services	-	0.3	-	-	-	-	0.3
18a Activities of households as employers	2	26	0.2	-	-	-	28
19 Total	510	56,067	135	0	36	49	56,441

1) According to NACE Regulation; Statistical classification of economic activities in the European Community. The allocation depends on the basis of the principal activity of the immediate counterparty.

2) Additions less reversals of credit losses allowances on financial assets and provisions in the lending business and less income from recoveries from written-off financial assets.

3) Net value of the exposure: Gross carrying value after deduction of credit losses allowances on financial assets and provisions in the lending business as well as write-offs, but before considering any credit risk mitigation (CRM) techniques and before credit conversion factors (CCF).

Disclosure Report as of 31 December 2019

Table 28: Credit quality of exposures by geographical areas (EU CR1-C)

All figures in € million

Significant geographical areas ¹⁾	Gross carrying values of						Net values ³⁾ (a + b - c - d)
	Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs in the year 2019	Credit risk adjustment charges in the year 2019 ²⁾	
	a	b	c	d	e	f	
1 Euro area countries	122	45,127	84	-	3	30	45,164
2 thereof: Germany	11	17,948	15	-	3	6	17,944
3 thereof: France	-	8,065	9	-	-	3	8,056
4 thereof: Austria	-	6,624	0.1	-	-	-	6,624
5 thereof: Luxembourg	97	4,663	18	-	-	7	4,742
6 thereof: Spain	0.4	2,374	1	-	-	0.4	2,374
7 thereof: Italy	14	2,036	12	-	0.1	4	2,038
8 Other EU countries	205	4,457	26	-	33	9	4,635
9 thereof: Poland	-	1,575	5.8	-	-	2	1,569
10 thereof: United Kingdom	186	1,232	17	-	-	6	1,402
11 Rest of Europe	86	1,358	20	-	-	7	1,424
12 Africa	-	210	0.5	-	-	0.2	209
13 America	97	3,505	4	-	-	2	3,598
14 thereof: United States of America	97	2,911	4	-	-	2	3,005
15 Asia	-	447	-	-	-	-	447
16 Oceania	-	-	-	-	-	-	-
17 Other geographical areas ⁴⁾	-	963	-	-	-	-	963
18 Total	510	56,067	135	0	36	49	56,441

1) The regional allocation depends on the country of residence of the immediate borrower, counterparty or issuer and corresponds to the "Nomenclature of countries" of the German Central Bank.

2) Additions less reversals of credit losses allowances on financial assets and provisions in the lending business and less income from recoveries from written-off financial assets.

3) Net value of the exposure: Gross carrying value after deduction of credit losses allowances on financial assets and provisions in the lending business as well as write-offs, but before considering any credit risk mitigation (CRM) techniques and before credit conversion factors (CCF).

4) Includes supranational organisations, which, according to EBA/GL/2016/11, are not to be assigned to the country where the Institute has its headquarters, but under "Other geographical areas".

Disclosure Report as of 31 December 2019

Table 29: Credit quality of forborne exposures (EU NPL1)

All figures in € million

Counterparties ¹⁾ and instruments	Gross carrying amount / nominal amount ²⁾ of exposures with forbearance measures				Accumulated impairment, provisions and negative changes in fair value due to credit risk		Collateral received and financial guarantees received ³⁾ on forborne exposures	
	Performing, forborne	Non-performing, forborne		thereof impaired	on performing forborne exposures	on non-performing forborne exposures	g	thereof collateral and financial guarantees received on non-performing exposures with forbearance measures
		thereof defaulted	c					
	a	b	c	d	e	f	g	h
1 Loans and advances	-	323	323	297	-	40	284	284
2 Central banks	-	-	-	-	-	-	-	-
3 General governments	-	-	-	-	-	-	-	-
4 Credit institutions	-	-	-	-	-	-	-	-
5 Other financial corporations	-	97	97	97	-	-	97	97
6 Non-financial corporations	-	226	226	200	-	40	187	187
7 Households	-	-	-	-	-	-	-	-
8 Debt securities	-	-	-	-	-	-	-	-
9 Loan commitments given	-	-	-	-	-	-	-	-
10 Total	0	323	323	297	0	40	284	284

1) The classification of the counterparties (counterparty sector) is based on the type of direct counterparty.

2) Gross carrying amount (nominal value of off-balance-sheet exposures) before deduction of impairments in relation to financial assets and provisions in lending, but after write-downs.

Unlike the situation under EU CR1-A/B/C and EU CR2-B, cumulative negative changes in the fair value as a result of the credit risk (€ 9 million) are also taken into consideration. An impairment in fair value is implied for financial assets measured at fair value through profit/loss.

3) The value of the disclosed securities/guarantees is limited to the carrying amount of the secured/guaranteed exposures.

Disclosure Report as of 31 December 2019

Table 30: Credit quality of performing and non-performing exposures according to days past due (EU NPL3)

All figures in € million

Counterparties ¹⁾ and instruments	Gross carrying amount / nominal amount of exposures ²⁾³⁾												
	Performing exposures			Non-performing exposures									Of which defaulted
	Not past due or past due ≤ 30 days	Past due > 30 days and ≤ 90 days		Unlikely to pay, that are not past due or are past due ≤ 90 days	Past due > 90 days to ≤ 180 days	Past due > 180 days to ≤ 1 year	Past due > 1 year to ≤ 2 years	Past due > 2 years to ≤ 5 years	Past due > 5 years to ≤ 7 years	Past due > 7 years			
a	b	c	d	e	f	g	h	i	j	k	l		
1 Loans and advances	41,182	41,151	31	518	501	0.1	1	0.3	16	0.2	1	518	
2 Central banks	-	-	-	-	-	-	-	-	-	-	-	-	
3 General governments	11,380	11,380	-	-	-	-	-	-	-	-	-	-	
4 Credit institutions	563	563	-	-	-	-	-	-	-	-	-	-	
5 Other financial corporations	1,194	1,194	-	97	97	-	-	-	-	-	-	97	
6 Non-financial corporations	28,022	27,991	31	419	403	-	0.3	-	15	-	-	419	
7 thereof: SMEs	9,301	9,301	-	95	93	-	0.3	-	2	-	-	95	
8 Households	22	22	-	2	0.2	0.1	0.2	0.3	0.1	0.2	1	2	
9 Debt securities	9,138	9,138	-	-	-	-	-	-	-	-	-	-	
10 Central banks	-	-	-	-	-	-	-	-	-	-	-	-	
11 General governments	6,311	6,311	-	-	-	-	-	-	-	-	-	-	
12 Credit institutions	2,765	2,765	-	-	-	-	-	-	-	-	-	-	
13 Other financial corporations	61	61	-	-	-	-	-	-	-	-	-	-	
14 Non-financial corporations	-	-	-	-	-	-	-	-	-	-	-	-	

Disclosure Report as of 31 December 2019

All figures in € million

Counterparties ¹⁾ and instruments	Gross carrying amount / nominal amount of exposures ^{2) 3)}												
	Performing exposures			Non-performing exposures									Of which defaulted
		Not past due or past due ≤ 30 days	Past due > 30 days and ≤ 90 days	Unlikely to pay, that are not past due or are past due ≤ 90 days	Past due > 90 days to ≤ 180 days	Past due > 180 days to ≤ 1 year	Past due > 1 year to ≤ 2 years	Past due > 2 years to ≤ 5 years	Past due > 5 years to ≤ 7 years	Past due > 7 years			
a	b	c	d	e	f	g	h	i	j	k	l		
15 Off-balance-sheet exposures	4,391			0.4								0.4	
16 Central banks	-			-								-	
17 General governments	422			-								-	
18 Credit institutions	-			-								-	
19 Other financial corporations	70			-								-	
20 Non-financial corporations	3,899			0.4								0.4	
21 Households	-			-								-	
22 Total	54,711	50,289	31	519	501	0.1	1	0.3	16	0.2	1	519	

1) The classification of the counterparties (counterparty sector) is based on the type of direct counterparty.

2) Gross carrying amount (nominal value of off-balance-sheet exposures) before deduction of impairments in relation to financial assets and provisions in lending, but after write-downs.

Unlike the situation under EU CR1-A/B/C and EU CR2-B, cumulative negative changes in the fair value as a result of the credit risk (€ 9 million) are also taken into consideration. An impairment in fair value is implied for financial assets measured at fair value through profit/loss.

3) In accordance with point 13 of the guidelines EBA/GL/2018/10, the NPL/NPE ratio is calculated without taking account of held-for-sale loans, without cash held at central banks and without other sight deposits.

Disclosure Report as of 31 December 2019

Table 31: Performing and non-performing exposures and associated provisions (EU NPL4)

All figures in € million

Counterparties ¹⁾ and instruments	Gross carrying amount / nominal amount of exposures ²⁾						Accumulated impairment, provisions and negative changes in fair value due to credit risk						Accumulated write-offs in the year 2019	Collateral and financial guarantees received ³⁾	
	Performing exposures			Non-performing exposures			Performing exposures			Non-performing exposures				on performing exposures	on non- performing exposures
	thereof Stage 1	thereof Stage 2	thereof Stage 2	thereof Stage 2	thereof Stage 3	thereof Stage 1	thereof Stage 2	thereof Stage 2	thereof Stage 3						
	a	b	c	d	e	f	g	h	i	j	k	l		m	n
1 Loans and advances	41,182	37,652	3,092	518	-	492	69	24	45	64	-	55	36	30,518	454
2 Central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3 General governments	11,380	10,953	149	-	-	-	26	0.2	26	-	-	-	-	896	-
4 Credit institutions	563	563	-	-	-	-	-	-	-	-	-	-	-	563	-
5 Other financial corporations	1,194	1,125	69	97	-	97	0.5	0.5	-	-	-	-	-	1,139	97
6 Non-financial corporations	28,022	24,989	2,873	419	-	393	43	23	19	64	-	55	36	27,899	355
7 thereof: SMEs	9,301	8,358	838	95	-	95	14	8	6	20	-	20	-	9,287	76
8 Households	22	22	1	2	-	2	0.02	0.02	0.01	0.2	-	0.2	0.03	21	2
9 Debt securities	9,138	9,004	-	-	-	-	3	3	-	-	-	-	-	2,177	-
10 Central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11 General governments	6,311	6,224	-	-	-	-	3	3	-	-	-	-	-	1,275	-
12 Credit institutions	2,765	2,722	-	-	-	-	0.3	0.3	-	-	-	-	-	843	-
13 Other financial corporations	61	58	-	-	-	-	-	-	-	-	-	-	-	58	-
14 Non-financial corporations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Disclosure Report as of 31 December 2019

All figures in € million

Counterparties ¹⁾ and instruments	Gross carrying amount / nominal amount of exposures ²⁾						Accumulated impairment, provisions and negative changes in fair value due to credit risk						Accumulated write-offs in the year 2019	Collateral and financial guarantees received ³⁾	
	Performing exposures			Non-performing exposures			Performing exposures			Non-performing exposures				on performing exposures	on non- performing exposures
	thereof Stage 1	thereof Stage 2	thereof Stage 2	thereof Stage 2	thereof Stage 3	thereof Stage 1	thereof Stage 2	thereof Stage 2	thereof Stage 2	thereof Stage 3	thereof Stage 2	thereof Stage 3			
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	
15 Off-balance-sheet exposures	4,391	4,239	127	0.4	-	0.4	8	6	1	-	-	-		3,964	0.4
16 Central banks	-	-	-	-	-	-	-	-	-	-	-	-		-	-
17 General governments	422	397	-	-	-	-	-	-	-	-	-	-		140	-
18 Credit institutions	-	-	-	-	-	-	-	-	-	-	-	-		-	-
19 Other financial corporations	70	70	-	-	-	-	0.2	0.2	-	-	-	-		70	-
20 Non-financial corporations	3,899	3,772	127	0.4	-	0.4	8	6	1	-	-	-		3,754	0.4
21 Households	-	-	-	-	-	-	-	-	-	-	-	-		-	-
22 Total	54,711	50,895	3,218	519	0	492	64	21	44	64	0	55	36	36,660	455

1) The classification of the counterparties (counterparty sector) is based on the type of direct counterparty.

2) Gross carrying amount (nominal value of off-balance-sheet exposures) before deduction of impairments in relation to financial assets and provisions in lending, but after write-downs.

Unlike the situation under EU CR1-A/B/C and EU CR2-B, cumulative negative changes in the fair value as a result of the credit risk (€ 9 million) are also taken into consideration. An impairment in fair value is implied for financial assets measured at fair value through profit/loss.

3) The value of the disclosed securities/guarantees is limited to the carrying amount of the secured/guaranteed exposures.

Defaulted and non-defaulted exposures

The non-defaulted exposures amounted to € 56.1 billion and 99.1 % respectively as of the reporting date (31 December 2018: € 58.4 billion or 99.6 % respectively) on the basis of gross carrying amount in accordance with the COREP notification.

The gross value of the defaulted exposures amounted to a total of € 510 million as of 31 December 2019 (31 December 2018: € 221 million); of this figure, € 411 million is attributable to the IRB approach and € 99 million is attributable to the standardised approach. A stage 3 impairment of € 55 million was created in relation to the defaulted exposures.

An exposure in the IRB approach and in the standardised approach is considered to be “defaulted” if there is a default as defined in article 178 CRR or if another contractual or regulatory trigger is applicable. The pbb Group assumes a default if for instance a borrower is more than 90 days past due with significant arrears/overdrawn facilities or if it is not likely that the borrower will fully meet his payment obligations. The exposures of a borrower which satisfy one or more default criteria are given a PD category to which a probability of default (PD) of 100 % is allocated. The default definition used under IFRS 9 is the same as that used for regulatory purposes.

Non-defaulted exposures are receivables which, in accordance with article 178 CRR, are not considered to be defaulted; i.e. for which none of the default events specified at that point has occurred.

Non-performing exposure

All exposures for which a default is considered to exist in accordance with article 178 CRR are also considered to be “non-performing” by the pbb Group. Accordingly, the defaulted receivables of € 510 million specified above are also considered to be “non-performing” exposures.

The Implementing Regulation (EU) 2015/227 considers an exposure to be “non-performing” if one of the following criteria is satisfied: It is a major exposure which is more than 90 days past due, or it is an exposure for which it is unlikely that the obligor will settle his liabilities in full without using collateral, irrespective of whether payments are already past due and irrespective of the number of days of any delay in payment.

An exposure is classified as “non-performing” irrespective of whether the exposure is classified as “defaulted” for regulatory purposes in accordance with article 178 CRR or is classified as impaired for accounting purposes in accordance with the relevant IFRS accounting regulations.

For the pbb Group, the NPE (non-performing exposure in accordance with FINREP) ratio amounted to 0.9 % as of the reporting date (31 December 2018: 0.6 %); the NPL (non-performing loan in accordance with FINREP) ratio, which recognises only non-performing receivables (loans and exposures), but does not recognise any bonds and off-balance-sheet exposures (such as loan commitments) amounted 1.2 % (31 December 2018: 0.8 %). In accordance with point 13 of the guidelines EBA/GL/2018/10, the NPL or the NPE ratio has to be calculated without recognising held-for-sale loans, without cash at central banks and without other sight deposits.

Impaired exposures

An exposure is considered to be “impaired” if an individual stage 3 impairment has been created in accordance with the International Financial Reporting Standards (IFRS) - the accounting regulations applied by the pbb Group. The volume of stage 3 impairments amounted to € 55 million as of 31 December 2019 (31 December 2018: € 56 million) and the gross carrying amount of the impaired exposures was € 492 million (31 December 2018: € 316 million). The criteria for stage 3 impairments according to IFRS 9 do not differ significantly from the objective criteria according to IAS 39 which resulted in the creation of an individual allowance. The rules and methods regarding impairment in accordance with IFRS 9 are explained in greater detail in the following section “Credit risk adjustments”.

Disclosure Report as of 31 December 2019

All exposures for which a stage 3 impairment has been identified in accordance with the IFRS accounting regulations are also considered by the pbb Group to be “non-performing” in accordance with the Implementing Regulation (EU) 2015/227 specified above.

Past-due exposures

An exposure is classified as “past due” (for accounting and also for regulatory purposes), for past-due receivables if the obligor has failed to meet his contractually agreed payments of interest or principal on time. The gross carrying amount of the partially or entirely past-due exposures was € 550 million as of the reporting date (31 December 2018: € 166 million).

Forborne (restructured) exposures

Receivables at risk of default are restructured by the pbb Group if the financial position of the borrower has deteriorated but if there is still a positive going-concern forecast for the respective loan exposure. This is achieved by modifying the terms and conditions or ancillary agreements by means of a unilateral or mutual declaration(s) of intent. Restructuring agreements should maximise the opportunities for the pbb Group to realise its outstanding receivables or at least minimise the risk of default of the loan exposure. These generally include standstill agreements, lifetime extensions, changed interest payment/repayment terms, interest/repayment reductions or the suspension of contractual agreements (for instance financial covenants) so that the borrower is again able to meet his contractual payment obligations. The credit risk associated with restructured loans is the responsibility of the credit risk management units of the Group.

The gross carrying amount of the rescheduled (loans) and off-balance-sheet (loan commitments) receivables was stated as € 323 million as of the reporting date (31 December 2018: € 184 million); these mostly consist of standstill agreements and the suspension of contractual agreements. An impairment of € 40 million was created in relation to the rescheduled exposures. The rescheduled receivables accounted for approx. 0.6 % of the total gross carrying amounts (31 December 2018: 0.3 %).

Credit risk adjustments

Impairments

The regulations regarding impairments in accordance with IFRS 9 are relevant for assets measured either at “amortised cost” or at “fair value through other comprehensive income” as well as for off-balance sheet obligations, such as loan commitments and financial guarantees. The rules do not have to be applied for equity instruments. An impairment is implied for financial assets measured at fair value through profit or loss at subsequent measurement. For derivatives measured at fair value through profit or loss the maximum risk of default is reflected in the nominal value, whereas for non-derivative financial instruments measured at fair value through profit or loss it is reflected in the book value.

IFRS 9 contains a model according to which provisions for credit losses may be created upon initial recognition of the financial asset (or on the date when the Group becomes a contracting party of the loan commitment or financial guarantee) on the basis of credit losses expected at that time. According to IFRS 9 this is an unbiased and probability-weighted amount that is determined by evaluation of a range of possible outcomes and scenarios. IFRS 9 clarifies that this is a probability weighted average and thus not necessarily the most probable amount.

Impairments and provisions in the lending business

Upon initial recognition, the impairments in lending business are based on expected credit losses within the following twelve months (so-called stage 1). The 12-months expected credit loss is part of the lifetime expected credit losses and corresponds to the expected credit losses from defaults that may occur for the financial instrument within twelve months after balance sheet date. In case of a significant increase in the financial asset's credit risk within the context of subsequent measurement (stage 2) or in case of a credit impairment (stage 3), the impairment has to reflect the lifetime expected credit losses. pbb Group does not apply the simplified approach for loans from lease agreements but also differentiates these into the impairment stage 1 and 2.

Disclosure Report as of 31 December 2019

The same definition of default is used for IFRS 9 as for regulatory purposes. For this a default is defined if

- it is unlikely that the borrower can fully fulfil its payment obligations, or
- the borrower has material past dues of more than 90 days.

pbb Group determines the expected credit losses on an individual basis.

pbb Group developed check criteria for the allocation to the three impairment stages of IFRS 9 which is very closely linked to the methods and instruments for credit and risk monitoring. In addition, the practice of credit risk management leads to an intensification of supervision with increasing impairment stage. Each financial asset which does not have to be measured at fair value through profit or loss has to be allocated to stage 1 at initial recognition if it is not credit-impaired. A financial asset moves to stage 2 if the credit risk has increased significantly but is not credit-impaired. This is the case if

- as rebuttable presumption there is a past due of more than 30 days; or
- the financial asset is non-investment grade and the multi-year probability of default at balance sheet date exceeds the multi-year probability of default at initial recognition of the financial asset by a factor of at least 2.5.

The criterion of 30 days past due can be rebutted for example in the case of so called technical past dues. This can be the case if the borrower transfers the amount owed to a wrong account and corrects this at short notice.

Counterparties of loans and securities which credit has deteriorated compared with the date of initial recognition but which still have an investment grade rating and which do not have a payment past due of more than 30 days are assessed as very low-risk in the allocation to the impairment stages.

If the credit risk of a financial assets with a significantly increased credit risk has not significantly increased any further at balance sheet date compared to the date of initial recognition the financial asset will move back to stage 1.

A financial asset will have to be moved to stage 3 if it is credit-impaired. A deal will be credit-impaired if one or more events that have detrimental impact on the estimated future cash flows of that financial asset have occurred. Evidence that a financial asset is credit-impaired include observable data about the following events:

- significant financial difficulty of the issuer or the borrower;
- a breach of contract, such as a default or past due event;
- pbb Group, for economic reasons or contractual reasons relating to the borrower's financial difficulty, having granted to the borrower concessions that pbb Group would not otherwise consider;
- it is becoming probable that the borrower will enter bankruptcy or other financial reorganization;
- the disappearance of an active market for that financial asset because of financial difficulties;
- the purchase or origination of a financial asset at a deep discount that reflects the incurred credit losses.

For purchased or originated credit-impaired financial assets (POCI) only the cumulative changes in lifetime expected credit losses since initial recognition have to be recognised as a loss allowance at balance sheet date. For such financial assets expected credit losses shall be discounted using the credit-adjusted effective interest rate determined at initial recognition. The credit-adjusted effective interest rate has to be applied to the amortised cost from initial recognition. The recognition of interest income will have to be determined this way for the entire maturity also if the borrower recovers. The interest income is attributed to the POCI-asset, received repayments have to be recognised as repayments. pbb Group did not purchase or originate credit-impaired financial assets as of 31 December 2019 and as of 31 December 2018.

Expected credit loss

pbb Group principally uses a model-based approach for determining the amount of expected credit losses. Regulatory risk parameters (probability of default/PD, loss given default/LGD) and contract information, for example the contractually agreed cash flows, are used as a basis for determining the amount of credit losses of the stage 1 and stage 2 financial instruments. The exposure size results from the comparison of the contractually agreed cash flows and the expected cash flows. The risk parameters listed above are linked to the exposure size to determine the expected losses. In addition expectations about prepayments (so called prepayment rates), expected prolongations of loans (so called prolongation rates) and expected drawings of undrawn parts of a commitment (so called credit conversion factor/CCF) are considered in the expected cash flows. The risk parameter PD is determined for each borrower with the aid of customer specific rating methods. Several customer specific risk factor for example the debt ratio, return indicators and similar quantitative indicators are input factors of the rating methods. The risk parameter LGD is determined with the aid of specific LGD models in which especially expected recovery ratios from the disposal of collaterals or other parts of the asset, the transaction specific ratio of current collaterals and the current book value of the loan as well as the expected time till receipt of payments are material input factors. These PD rating methods and LGD models are also methods which pbb Group uses as a standard approach for risk assessment and risk controlling. The regulatory risk parameters are transformed adequately so that the requirements of IFRS 9 are fulfilled. These include the deduction of conservative adjustments which are used for regulatory purposes, the consideration of macro-economic factors for the purpose of the so called point in time transformation and the transition from the regulatory discount rate to the effective interest rate required by IFRS 9. Particularly the transformations ensure that the risk parameters are unbiased. Historic data about rating migration together with forecasts of macro-economic developments (for example the economic growth per country and – for real estate financings – the development of collateral market values differentiated by object types and regions) are used for the determination of multi-year probabilities of default. For this information according to the type of customer are used. pbb Group forecasts relevant indicators for example market value developments or the economic growth on the basis of internal analyses and externally available data. Possible non-linearity effects are considered in the determination of the expected credit loss. The interest income is calculated by applying the effective interest rate to the gross book value (book value before risk provision) of the financial asset.

pbb Group uses forecasts of the gross domestic product (GDP) of the International Monetary Fund (IMF) for the determination of point in time probabilities of default. For deals of the impairment stage 1 only the GDP for the year 2020 is used. The IMF forecasts until the year 2024 are used for deals of the impairment stage 2. Starting from the year 2025 a convergence to the long-term GDP average is modelled.

The expected credit losses of impairment stage 3 are determined on the basis of individual cash flows with several probability-weighted scenarios. The amount of risk provision equals the difference between the carrying amount of the asset and the present value of the expected future cash flows. The latter is calculated on the basis of the initial effective interest rate. The expected future cash flows take into account the marketability of collaterals for example charges on the land/mortgages. The interest income is calculated by applying the effective interest rate to the amortised cost of the financial asset.

Write offs

A financial asset has to be written-off by using the existing booked impairment if a recovery is not feasible based on adequate judgement. This is generally the case if in the process of a realization of the collateral a residual claim remains and if it is foreseeable that no further amounts are expected from the borrower (for example due to insolvency/lack of funds). pbb groups attempts to collect the remaining claim completely or at least partly by enforcement activities for written-off loans in justified exceptions.

Balance sheet disclosure

Impairments on financial assets of the measurement category amortised cost are disclosed in the statement of financial position under "credit loss allowances on financial assets at amortised cost" instead of a deduction of the book value of the asset. The

Disclosure Report as of 31 December 2019

holdings of financial assets are shown before and after recognition of risk provisioning. In the income statement, the impairments of all three categories according to IFRS 9 in relation to these holdings are shown in the result of risk provisioning.

Impairments on financial assets measured at fair value through other comprehensive income (or the changes in fair value within a period) are shown in the equity position "Cumulative other comprehensive income" (position "thereof: impairments on financial assets measured at fair value through other comprehensive income"). In the income statement, the impairments of all three categories according to IFRS 9 in relation to these holdings are shown in the result of risk provisioning.

The provisions for off-balance-sheet lending business, such as irrevocable loan commitments and financial guarantees, are created on the basis the impairment test of IFRS 9, and are shown on the liabilities side of the balance sheet, under the "Provisions".

In accordance with article 442 letter i CRR in conjunction with EU CR2-A and EU CR2-B of the EBA/GL/2016/11, the following tables contain information concerning the credit risk adjustments for the on-balance-sheet and off-balance-sheet exposures. They also show a reconciliation for the specific credit risk adjustments (general credit risk adjustments are not relevant for the pbb Group) as well as, additionally, a reconciliation of the defaulted exposures.

Disclosure Report as of 31 December 2019

Table 32: Changes in the stock of credit risk adjustments (EU CR2-A)

All figures in € million

Loan loss provision ¹⁾ (IFRS 9)	Accumulated specific credit risk adjustment ²⁾	Accumulated general credit risk adjustment
	a	b
1 Opening balance 01.01.2019	120	0
1a thereof: stage 1	14	-
1b thereof: stage 2	43	-
1c thereof: stage 3	56	-
1d thereof: provisions in the lending business (off-balance sheet business)	7	-
2 Increases due to new business and acquisition	16	-
3 Decreases due to repayments and disposals	-6	-
4 Changes due to changed credit risk (net, additions less reversals)	39	-
5 Changes due to adjustments without derecognition (net, modification of contractual cash flows)	-	-
6 Changes due to model or methodological changes or their calibration	-	-
7 Decreases due to write-offs (consumption/utilisation of value adjustments)	-36	-
8 Transfers between credit risk adjustments	-	-
9 Impact of exchange rate differences	-	-
10 Business combinations, including acquisitions and disposals of subsidiaries	-	-
11 Other adjustments (e.g. Unwinding)	2	-
12 Closing balance 31.12.2019	135	0
12a thereof: stage 1	26	-
12b thereof: stage 2	46	-
12c thereof: stage 3	55	-
12d thereof: provisions in the lending business (off-balance sheet business)	8	-
13 Recoveries on credit risk adjustments recorded directly to the statement of profit or loss	1	-
14 Specific credit risk adjustments directly recorded to the statement of profit or loss	-	-

1) The regulations regarding the creation of impairments under IFRS 9 have been changed compared with IAS 39, and new lines have accordingly been inserted in the table EU CR2-A. In this connection, the numbering of lines specified in accordance with EBA/GL/2016/11 has been changed - in order to achieve improved transparency.

2) Credit losses allowances on financial assets (both loans and advances and securities) measured at amortised cost or at fair value through other comprehensive income as well as provisions in the lending business for (off-balance) loan commitments and financial guarantees.

Table 33: Changes in the stock of defaulted and impaired exposures (EU CR2-B)

All figures in € million

Defaulted loans and debt securities	Gross carrying value defaulted exposures ¹⁾
	a
1 Opening balance 01.01.2019 ²⁾	221
2 Loans and debt securities that have defaulted or impaired since the last reporting period ³⁾	205
3 Returned to non-defaulted status	-
4 Amounts written off	-36
5 Other changes ⁴⁾	120
6 Closing balance 31.12.2019	510

1) Gross carrying value before deduction of credit losses allowances on financial assets and provisions in the lending business, but after write-offs.

2) The formerly defaulted individual loan of the underlying credit portfolio of the synthetic securitisation transaction Estate UK-3 in the amount of € 127 million has not been recognised in this respect, as this was not considered to be an exposure for regulatory purposes in view of the synthetic backing by the securitisation transaction. The real estate loan was derecognised in the second half of 2019 (see chapter 5.8 "Securitisations").

3) Gross carrying amount on the reporting date of the loans and bonds which defaulted in the reporting period.

4) Adjustment item for transfers to restructuring management in the reporting period less workouts/restructurings as well as repayments/redemptions.

In the financial year 2019, net payments of € 49 million (additions less reversals) were made to the impairments for financial assets (receivables and securities), measured at amortised cost or fair value, and to the provisions for off-balance-sheet credit business (such as irrevocable loan commitments) (2018: € 14 million net additions). The included additions to the provisions in lending business (or irrevocable loan commitments) amounted to € 1 million (2018: net additions of € 5 million). The write-downs or consumptions of impairments amounted to € 36 million in 2019 (2018: € 1 million). An incoming payment of € 1 million to be recognised through profit or loss was recorded in relation to financial assets which had previously been written down (2018: € 1 million).

The risk provisioning of € 49 million consists of net additions of stage 3 impairments (€ 33 million) and net additions of stage 1 and stage 2 impairments (a total of € 16 million). The additions of stage 3 impairments mainly related to real estate finance for shopping malls in the United Kingdom, whereas there were minor reversals of rating-impaired financing in other regions. The additions of stage 1 and stage 2 impairments were mainly attributable to non-rating-impaired financial instruments for which the impairments are calculated on the basis of models. The increase was attributable to two changes in accounting estimates. On the one hand, for the purpose of determining the expected loss of impairment stages 1 and 2, the pbb Group weighted the scenario of an economic downturn and falling real estate market values compared with the previous year with a higher probability of occurrence in view of the deterioration in the forecast for the overall economy and specific sectors and also in view of the increasing global risks; this resulted in an increase in the impairments. On the other hand, the stage 1 and stage 2 impairments increased as a result of various factors resulting from an expansion of the loss database, including the changed regulatory default definition, also involving the recognition of a longer time history. The additional data have resulted in a range of factors, including an adjustment (recalibration) of the models for determining the probability of default (PD) and the loss given default (LGD). After adjustment for complying with the IFRS 9 requirement, these regulatory parameters influence the expected credit loss. Apart from the accounting estimate changes, there have been reversals of impairments for non-rating-impaired financial assets due to lower probabilities of default and loss given defaults particularly for certain Southern-European counterparties, repayments of loans ahead of schedule and lower remaining maturities.

Total impairments recognised in relation to financial assets amounted to a total of € 135 million as of 31 December 2019 (1 January 2019: € 120 million); of this figure, stage 3 impairments account for € 55 million (1 January 2019: € 56 million) and stage 1 and stage 2 impairments account for € 72 million (1 January 2019: € 57 million). The volume of provisions for off-balance-sheet lending amounted to € 8 million (1 January 2019: € 7 million).

Total defaulted exposures (on the basis of gross carrying amounts) increased by € 289 million as of 31 December 2019 compared with the end of the previous year, namely to € 510 million (31 December 2018: € 221 million). The increase is mainly attributable to three commercial real estate finance arrangements (REF) for shopping malls in the United Kingdom, which in 2019 were transferred to restructuring management of non-performing loans. This is opposed by successful workouts/restructurings or repayments/redemptions of other non-performing loans in real estate finance. In public investment finance (PIF), there was a new addition to the non-performing loans in 2019; however, the claims against the debtor are fully covered by an export credit guarantee (Federal Republic of Germany). The percentage of defaulted exposures as of the reporting date was stated as 0.9 % (31 December 2018: 0.4 %) of the credit portfolio on the basis of gross carrying amounts.

Early warning system

The early warning system of the pbb Group has defined criteria respectively threshold values (triggers) for including loans in the watchlist and for being classified as restructuring or workout loans (e.g. past due payments, failure to meet financial ratios – e. g. loan-to-value [LTV], interest service coverage [ISC]). The system constantly monitors whether a trigger has been set off. In the event of any problems being identified, the credit exposure is analysed and, where appropriate, promptly transferred to watchlist or restructuring and workout loans. In this context an assessment is made to determine whether there is an objective indication of an impairment.

Watchlist and non-performing loans (restructuring and workout loans) are defined as follows:

Watchlist Loans

Payments past due by more than 60 days or another defined early warning signal is triggered (for instance insolvency of a main tenant in the REF segment).

Restructuring Loans

A default has occurred (for example, due to payments past due by more than 90 days, or the borrower's insolvency), or another contractual or regulatory trigger is applicable. The focus with restructuring is on active implementation of a restructuring concept – with the objective of either returning the exposure to regular coverage, or realising collateral on the market, without enforcement measures. Credit quality is consistently tested for deterioration, and stage 3 impairments (in accordance with IFRS) or specific allowances (in accordance with the HGB) are recognized if necessary.

Workout Loans

There are no indications that the loan can be restructured. Enforcement measures have been/will be introduced. Stage 3 impairments (in accordance with IFRS) or specific allowances (in accordance with the HGB) were recognised if necessary.

CRM REF Workout is also responsible for carrying out an impairment test in line with the relevant accounting regulations (HGB and IFRS).

5.3 Credit risk mitigation techniques

In accordance with article 453 CRR in conjunction with the guidelines EBA/GL/2016/11, the information in this chapter shows the credit risk mitigation techniques employed in the pbb Group.

The strategic business units of the pbb Group are Commercial Real Estate Finance (REF) and also Public Investment Finance (PIF); the focus is on Pfandbrief-eligible business. Within the framework of credit risk mitigation, the pbb Group accepts the following collateral:

- Real estate (property charges)
- Warranties and guarantees
- Financial collateral.

In this context, property charges (real estate) are particularly important for real estate financing operations. The pbb Group also accepts warranties and guarantees as well as financial collateral (mainly cash collateral and securities in certain cases) as collateral. The pbb Group uses financial securities as collateral within the framework of netting agreements in the context of derivative or security lending/repo transactions. The main counterparties are OECD credit institutions or Eurex Clearing. The main guarantors are financial institutions and public-sector customers. The guarantors and the credit derivative counterparties have a very good credit rating. The main guarantors are addressed in the pbb Group's risk reporting on a regular basis.

Non-cash collateral is taken into consideration with the effect of reducing credit risk for the purpose of estimating the loss given default (LGD). For the purpose of calculating the EAD (of the exposure values), financial collateral is taken into consideration with the effect of reducing credit risk. Warranties and guarantees are taken into consideration for mitigating credit risk by way of regular PD substitution. This ensures that the lower risk weighting of the guarantor is attributed to the secured portion of an exposure.

In real estate financing, the financing collateral generally comprises not only the property charges but also rental concessions and the assignment of insurance payments, which however are not recognised as mitigating credit risk in accordance with CRR.

In the pbb Group, the procedures for accepting collateral are governed in internal processing guidelines for every type of collateral. In order to enable legal enforceability, standard contracts are generally used; these are constantly monitored in view of changing legal environments. For this purpose, a group-wide process has been implemented to ensure that the enforceability of all CRR-relevant collateral is constantly subjected to legal monitoring. The calculation and fixing of the collateral values is documented transparently. Expert opinions used to estimate a liquidation value contain information regarding the marketability of the collateral.

In accordance with article 453 letter f and g CRR in conjunction with EU CR3 of the EBA/GL/2016/11, the following table shows the receivables secured by means of eligible collateral, separately for each exposure category of the approaches used by the pbb Group for determining the own funds requirements for the credit risk, the advanced IRB approach based on internal rating procedures of the bank and the standardised approach.

Disclosure Report as of 31 December 2019

Table 34: Credit risk mitigation techniques – Overview (EU CR3)

All figures in € million

Exposure classes and instruments	Net value of exposures ¹⁾				
	Exposures unsecured	Exposures secured ²⁾	Exposures secured by collateral ³⁾	Exposures secured by financial guarantees	Exposures secured by credit derivatives
	a	b	c	d	e
1 Total loans	13,593	29,190	26,564	2,093	-
1a Total off-balance-sheet	838	3,492	3,181	38	-
2 Total debt securities	7,572	1,559	-	1,559	-
3 Total exposures	22,003	34,242	29,745	3,690	0
4 thereof: defaulted	0.4	454	351	97	-
5 Central governments and central banks	-	-	-	-	-
6 Institutions	-	-	-	-	-
7 Corporates	202	29,236	29,103	133	-
8 thereof: specialised lending	153	25,322	25,305	18	-
9 thereof: small and medium-sized enterprises (SME)	18	2,070	2,042	21	-
10 Retail	-	-	-	-	-
18 Equity	0.02	-	-	-	-
18a Other non credit-obligation assets	72	-	-	-	-
19 Total IRB approach	274	29,236	29,103	133	0
20 Central governments or central banks	10,413	48	-	46	-
21 Regional governments or local authorities	6,936	10	-	10	-
22 Public sector entities	1,967	268	-	248	-
23 Multilateral development banks	782	48	-	48	-
24 International organisations	133	-	-	-	-
25 Institutions	79	1,072	-	1,072	-
26 Corporates	368	2,636	-	2,036	-
27 thereof: small and medium-sized enterprises (SME)	29	210.7	-	0.8	-
28 Retail	-	0.2	-	-	-
29 thereof: small and medium-sized enterprises (SME)	-	-	-	-	-
30 Secured by mortgages on immovable property	-	641	641	-	-
31 thereof: small and medium-sized enterprises (SME)	-	209	209	-	-
32 Exposures in default	0.4	99	1	97	-
33 Exposures associated with particularly high risk	16	184	-	-	-
34 Covered bonds	1,139	-	-	-	-
35 Exposures to institutions and corporates with short-term credit assessment	-	-	-	-	-
36 Exposures in the form of units or shares in collective investment undertakings (CIUs)	3	-	-	-	-
37 Equity exposures	-	-	-	-	-
38 Other items	90	-	-	-	-
39 Total standardised approach	21,926	5,005	642	3,557	0
40 Total	22,200	34,242	29,745	3,690	0

1) Net value of the exposure: Gross carrying value after deduction of credit losses allowances on financial assets and provisions in the lending business as well as write-offs, but before considering any credit risk mitigation (CRM) techniques and before credit conversion factors (CCF).

2) Contains only risk positions secured by eligible credit collateral. This means collaterals which pursuant to Part Three, Title II, Chapter 4 of the CRR can be used to reduce the capital requirement under Pillar 1. In addition to physical collaterals / guarantees, assignments of rental claims or of insurance benefits are generally used. But these are not taken into account in order to mitigate the credit risk pursuant to CRR and are therefore not shown in the table.

3) Risk positions secured by eligible credit collateral on real estate property/mortgages.

Valuation and administration of collateral

Depending on the type of collateral, the pbb Group uses different valuation, control and verification methods. These procedures are a major component of the above-mentioned ad-hoc and annual loan exposure review or the procedure for approving new loans.

For the valuation of the various types of collateral, the pbb Group has established processing principles. The recoverability of collateral which is provided is reviewed within the framework of the credit approval process or the regular annual review of borrowers or in the event of material changes. Collateral which is subject to special risks is monitored in line with regulatory requirements and also more intensively in relation to the risks involved.

The measurement of property charges is based on a written valuation appraisal and is documented in writing. Fluctuations in value are monitored constantly by the pbb Group on the basis of defined parameters (e.g. loan to value).

Real estate

Each property used as collateral is subject to a written market and loan-to-value opinion prepared by an independent property valuer. The loan-to-value is required primarily for real estate collateral intended for the Pfandbrief cover pool (for refinancing using Pfandbrief issues). Third-party opinions are subject to a plausibility check carried out by internal staff (real estate analyst).

The regular monitoring and review of real estate collateral (monitoring and revaluation) is based on the market value of the property:

- The aim of monitoring in stage 1 is to identify properties and/or markets (or combinations of types of properties and markets) which might be affected by a potential loss in value on the basis of documentary and general information. For this purpose, a rough analysis is sufficient of individual properties.
- In stage 2, monitoring of the properties identified in stage 1 is reviewed in greater detail by the real estate analysts; this is performed annually for the properties which are subject to a higher risk.
- Revaluation ("revaluation or stage 3 monitoring) applies to properties which have seen a market price decline of over 10 % or other severe deteriorations in the underlying valuation assumptions as well as for properties which, in accordance with article 208 (3) letter b CRR, are subject to a mandatory revaluation at least every three years. In these cases, the current market value is determined by an independent property valuer.
- If there are any indications that the loan-to-value has been negatively affected, stage 4 of the monitoring process also reviews the figure which has been calculated and also carries out a revaluation process if necessary.

For more information concerning quality aspects in connection with the valuation of real estate in the pbb Group, please refer to the previous section "Risk hedging and risk mitigation" of chapter 5.1 "Management of credit risk".

Warranties/guarantees

The pbb Group accepts warranties and guarantees as collateral for the purpose of risk management as well as for risk mitigation in accordance with article 213 to 215 CRR. In order to be recognised for credit risk mitigation purposes, the warranties/guarantees as well as the guarantors must comply with the regulatory requirements. Warranties and guarantees are recognised for credit risk mitigation purposes by way of regular PD substitution.

Financial collateral

The pbb Group uses financial collateral (mainly cash collateral and securities in certain cases) within the framework of netting agreements in the context of derivative or security lending/repo transactions. For further information regarding the use of netting within the framework of credit risk mitigation, the netting regulations and financial collateral used by the pbb Group, please refer to the following section “Eligible netting agreements” and also the chapter 5.6 “Counterparty credit risk”.

Eligible netting agreements

Within the framework of credit risk mitigation, the pbb Group uses the regulatory regulations of off-balance-sheet netting for derivative financial instruments as well as for security lending/repo transactions if the contractual agreements meet the requirements for being recognised for risk mitigation purposes in accordance with article 296 CRR or article 206 CRR. As of 31 December 2019, the pbb Group had utilised derivative contractual netting agreements to the extent of € 1.5 billion (31 December 2018: € 1.7 billion) and had utilised securities lending/repo transactions to the extent of € 23 million (31 December 2018: € 0 million).

For balance sheet purposes, derivatives are not permitted to be netted as they are subject to different conditions (for instance different maturities or currency underlyings). The collateral agreements also cannot be netted with the derivatives on the balance sheet. Derivatives cleared via Eurex Clearing form an exception in this respect. Within the framework of the European Market Infrastructure Regulation (EMIR), there is a clearing obligation for standard Over-The-Counter (OTC) derivatives. Eurex Clearing is the central counterparty (CCP) used by pbb for the clearing of OTC derivatives. On-balance-sheet netting is applied in the cases of derivatives concluded with Eurex Clearing if the criteria for on-balance-sheet netting (IFRS) are satisfied. On-balance-sheet netting is carried out for each currency and comprises not only the carrying amounts of derivatives but also the margins which are calculated and paid or received by Eurex Clearing in this connection. As of 31 December 2019, there was a reduction totalling € 2.4 billion in the balance sheet total for these derivatives (31 December 2018: € 1.7 billion). For further information concerning on-balance-sheet netting, please refer to the notes of the annual report 2019, note 75 “Netting of financial instruments”.

For documentation of its derivative and security lending/repo transactions, the pbb Group uses the standard framework agreements (e.g. German Framework Agreement for Financial Futures (DRV), ISDA Master Agreement or Global Master Repurchase Agreement (GMRA)) incl. the respective collateral agreements (e.g. German Collateral Annex for the DRV or ISDA Credit Support Annex). The framework agreements which are used for derivatives and also for security lending/repo transactions contain a netting agreement according to which, e.g. in the event of insolvency, a netting arrangement of all transactions concluded under the terms of the framework agreement is used to establish a uniform receivable (in the event of the default of the contractual partner) so that pbb is only entitled to the balance of the positive and negative market values of the recognised individual transactions or is obliged to make a corresponding payment (so-called “close-out netting”). This reduces the credit risk in relation to the respective contractual partner. One of the criteria applicable for recognition for risk mitigation purposes is that a review has to be carried out regarding the validity and enforceability of the contractual netting agreement in the respective legal system. This is carried out on a regular basis and also on an ad-hoc basis, using legal appraisals which are obtained.

Financial collateral, mainly cash collateral and securities in certain cases, is received as collateral within the framework of these transactions. This is performed on the basis of standard collateral agreements (e.g. Collateral Appendix to the DRV). The collateral is provided by way of the transfer of full ownership; in the case of securities, collateral is also provided by way of pledging. pbb provides or receives cash collateral, usually in euros. If derivatives are cleared by a central counterparty, collateral is provided either by way of pledging securities or by way of transferring cash collateral. Whereas cash collateral is usually provided for bilateral repo transactions, collateral in the form of securities is generally exchanged for repo transactions cleared via a central counterparty. The collateral which is provided must meet the regulatory requirements if it is to be recognised for the purpose of credit risk mitigation purposes in accordance with CRR. The validity and enforceability of the collateral must also be assessed on the basis of legal appraisals.

Transactions are valued on a daily basis. Collateral agreements normally do not provide for an allowance threshold; there are only so-called minimum transfer amounts.

Risk concentrations which are taken on

Within the eligible collateral instruments which are used, there may be major risk concentrations in terms of the real estate property charges due to the natural correlation between such collateral and the general development in the real estate market of a particular country. The break-down of the loan portfolio according to regions and according to loan and property types is shown in the risk and opportunity report of the annual report 2019. The pbb Group limits risk concentrations of this type by means of country limit management.

Maximum limits in certain rating ranges are allocated to each individual country or group of countries (depending on the results of the internal rating procedure); these limit the business activities of the pbb Group. All country ratings and country limits are reviewed by credit risk management at least once every year.

5.4 Standardised approach

The following chapter in accordance with article 444 CRR in conjunction with the guidelines EBA/GL/2016/11 (incl. EU CRD) contains information concerning default exposures for which the pbb Group calculates the risk-weighted receivable amounts using the standardised approach (CRSA). This does not include exposures for which the value of the receivable is calculated in accordance with part 3, title II, chapter 6 "Counterparty credit risk" or part 3, title II, chapter 5 "Securitisation" of the CRR. These derivative transactions and securitisations are described in the chapters 5.6 "Counterparty credit risk" and 5.8 "Securitisations".

The net value of the on-balance-sheet and off-balance-sheet exposures amounted to a total of € 56,441 million as of 31 December 2019 (31 December 2018: € 58,528 million); of this figure, the standardised approach accounts for € 26,931 million or 48 % (31 December 2018: € 2,294 million or 4 %). The considerable increase in the CRSA exposures is mainly due to the fact that the application submitted by pbb for applying the so-called permanent partial use (PPU) in accordance with article 150 CRR for the models from public investment finance (mainly in relation to loans extended to sovereigns and financial institutions) was approved by the ECB and the affected portfolios were returned to the standardised approach in the second half of 2019.

Application of partial use in accordance with article 150 CRR

For determining the own funds requirements for credit risks, the pbb Group uses the advanced IRB approach based on internal rating methods (IRBA) as well as the standardised approach (CRSA). The following sub-portfolios in particular are subject to the CRSA:

- Exposures to central governments and central banks, regional governments, local authorities, administrative bodies and public-sector entities in accordance with article 150 (1) letters a and d CRR
- Exposures to institutions in accordance with article 150 (1) letter b CRR
- Exposures to companies which generate most of their revenues outside the real-estate sector
- Exposures to private individuals
- Default exposures which belong to an area which is being phased out in accordance with article 150 (1) letter c CRR in conjunction with section 14 SolvV (e.g. small-volume retail loans, credit standing assessed by means of retail scoring)

Disclosure Report as of 31 December 2019

- Receivables due from central counterparties (Eurex Clearing)
- Other default exposures which are not subject to any rating procedure according to the IRB approach approved by the German banking regulator.

Impact of credit risk mitigation

The following tables in accordance with article 453 letters f and g CRR as well as article 444 letter e CRR in conjunction with EU CR4 and EU CR5 of the guidelines EBA/GL/2016/11 show the impact of eligible collateral for these exposures which are treated under the standardised approach (CRSA). Table EU CR4 shows, for each CRSA exposure category, the receivables before and after the application of credit risk mitigation techniques and credit conversion factors CCF, and also contains information concerning the risk-weighted receivables (RWA) and the RWA density. Table EU CR5 shows the break-down of the CRSA receivables (before and after credit risk mitigation; each according to CCF) according to individual rating categories (risk weightings) for each CRSA exposure category.

Table 35: CRSA exposures and credit risk mitigation effects (EU CR4)

All figures in € million, unless otherwise stated

Exposure classes Standardised approach	Exposures before CCF and CRM ¹⁾		Exposures post CCF and CRM ²⁾		RWAs and RWA density	
	On-balance- sheet amount	Off-balance- sheet amount	On-balance- sheet amount	Off-balance- sheet amount	Risk-weighted assets (RWA)	RWA-density ³⁾ in %
	a	b	c	d	e	f
1 Central governments or central banks	10,462	0	12,851	7	158	1%
2 Regional governments or local authorities	6,561	385	7,758	204	569	7%
3 Public sector entities	2,142	93	1,918	35	154	8%
4 Multilateral development banks	830	-	782	-	-	-
5 International organisations	133	-	133	-	-	-
6 Institutions	1,151	-	79	-	18	22%
7 Corporates	2,599	405	587	208	722	91%
8 Retail	0.2	-	0.2	-	0.2	75%
9 Secured by mortgages on immovable property	526	115	526	59	230	39%
10 Exposures in default	99	0.4	1	0.4	2	112%
11 Exposures associated with particularly high risk	126	73	126	45	256	150%
12 Covered bonds	1,139	-	1,139	-	139	12%
13 Exposures to institutions and corporates with short-term credit assessment	-	-	-	-	-	-
14 Exposures in the form of units or shares in collective investment undertakings (CIUs)	3	-	3	-	3	100%
15 Equity exposures	-	-	-	-	-	-
16 Other items	90	-	90	-	209	233%
17 Total	25,860	1,072	25,993	557	2,461	9%

1) Exposure value after deduction of allowances/impairments, provisions and write-offs, but before considering any credit risk mitigation (CRM) techniques and credit conversion factors (CCF).

2) Exposure value after deduction of allowances/impairments, provisions and write-offs as well as after considering any credit risk mitigation (CRM) techniques and credit conversion factors (CCF).

3) Risk-weighted assets (RWA) divided by the exposure after considering any credit risk mitigation (CRM) techniques and credit conversion factors (CCF).

Disclosure Report as of 31 December 2019

Table 36a: CRSA exposures before credit risk mitigation (EU CR5)

All figures in € million, unless otherwise stated

Exposure classes Standardised approach	Risk weight																Total ¹⁾	Of which unrated ²⁾	
	0%	2%	4%	10%	20%	35%	50%	70%	75%	100%	150%	250%	370%	1.250%	Others	Deducted			
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p			q
1 Central governments or central banks	9,805	-	-	-	494	-	114	-	-	48	-	-	-	-	-	-	-	10,462	1,139
2 Regional governments or local authorities	4,278	-	-	-	2,438	-	22	-	-	16	-	-	-	-	-	-	-	6,753	1,849
3 Public sector entities	1,314	-	-	-	673	-	136	-	-	66	-	-	-	-	-	-	-	2,188	1,461
4 Multilateral development banks	782	-	-	-	-	-	48	-	-	-	-	-	-	-	-	-	-	830	-
5 International organisations	133	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	133	-
6 Institutions	-	-	-	-	73	-	1,078	-	-	-	-	-	-	-	-	-	-	1,151	0.1
7 Corporates	13	-	-	-	269	-	-	-	-	2,531	-	-	-	-	-	-	-	2,814	2,531
8 Retail	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	0.2	0.2
9 Secured by mortgages on immovable property	-	-	-	-	-	413	172	-	-	-	-	-	-	-	-	-	-	585	585
10 Exposures in default	-	-	-	-	-	-	-	-	-	1	98	-	-	-	-	-	-	99	99
11 Exposures associated with particularly high risk	-	-	-	-	-	-	-	-	-	-	171	-	-	-	-	-	-	171	171
12 Covered bonds	-	-	-	890	249	-	-	-	-	-	-	-	-	-	-	-	-	1,139	-
13 Exposures to institutions and corporates with short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14 Exposures in the form of units or shares in collective investment undertakings (CIUs)	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	3	3
15 Equity exposures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16 Other items	6	-	-	-	-	-	-	-	-	-	-	84	-	-	-	-	-	90	-
17 Total	16,331	0	0	890	4,196	413	1,570	0	0.2	2,665	268	84	0	0	0	0	0	26,417	7,838

1) Exposure value after deduction of allowances/impairments, provisions and write-offs, but before considering any credit risk mitigation (CRM) techniques and after credit conversion factors (CCF).

2) A credit assessment by a nominated ECAI (External Credit Assessment Institution) is not available.

Disclosure Report as of 31 December 2019

Table 36b: CRSA exposures after credit risk mitigation (EU CR5)

All figures in € million, unless otherwise stated

Exposure classes Standardised approach	Risk weight																Total ¹⁾	Of which unrated ²⁾	
	0%	2%	4%	10%	20%	35%	50%	70%	75%	100%	150%	250%	370%	1.250%	Others	Deducted			
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p			q
1 Central governments or central banks	12,247	-	-	-	494	-	114	-	-	-	-	-	-	-	-	-	-	12,858	1,139
2 Regional governments or local authorities	5,211	-	-	-	2,713	-	22	-	-	16	-	-	-	-	-	-	-	7,962	2,147
3 Public sector entities	1,314	-	-	-	550	-	88	-	-	-	-	-	-	-	-	-	-	1,952	1,273
4 Multilateral development banks	782	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	782	-
5 International organisations	133	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	133	-
6 Institutions	-	-	-	-	73	-	6	-	-	-	-	-	-	-	-	-	-	79	0.1
7 Corporates	23	-	-	-	62	-	-	-	-	710	-	-	-	-	-	-	-	795	710
8 Retail	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	0.2	0.2
9 Secured by mortgages on immovable property	-	-	-	-	-	413	172	-	-	-	-	-	-	-	-	-	-	585	585
10 Exposures in default	-	-	-	-	-	-	-	-	-	1	0.4	-	-	-	-	-	-	2	2
11 Exposures associated with particularly high risk	-	-	-	-	-	-	-	-	-	-	171	-	-	-	-	-	-	171	171
12 Covered bonds	-	-	-	890	249	-	-	-	-	-	-	-	-	-	-	-	-	1,139	-
13 Exposures to institutions and corporates with short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14 Exposures in the form of units or shares in collective investment undertakings (CIUs)	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	3	3
15 Equity exposures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16 Other items	6	-	-	-	-	-	-	-	-	-	-	84	-	-	-	-	-	90	-
17 Total	19,717	0	0	890	4,141	413	403	0	0.2	732	171	84	0	0	0	0	0	26,550	6,029

1) Exposure value after deduction of allowances/impairments, provisions and write-offs as well as after considering any credit risk mitigation (CRM) techniques and after credit conversion factors (CCF).

2) A credit assessment by a nominated ECAI (External Credit Assessment Institution) is not available.

The increase of € 133 million (in total) in the exposures after credit risk mitigation is mainly due to the netting of warranties/guarantees (substitution approach). The guarantors are mainly financial institutions and public-sector customers. The substitution effects resulting from warranties/guarantees mean that the secured portion of an IRBA receivable (e.g. of a company) is shown with the lower risk weighting of the guarantor (for instance a public body) in the standardised approach or, that guaranteed CRSA receivables are assigned to the lower risk weighting of the guarantor. In the pbb Group, default exposures with regard to public clients and financial institutions are treated in the standardised approach.

Use of rating agencies

External rating agencies

For assessing credit ratings using the standardised approach, the pbb Group only uses external ratings provided by Standard & Poor's and Moody's. These rating agencies are nominated for all CRSA receivable categories.

Transfer of credit ratings

Issue ratings are not transferred to comparable receivables of equal or higher rank.

Assignment of external credit ratings

For assigning the external ratings of the rating agencies to the rating categories of the standardised approach, the pbb Group uses the method provided by the European Banking Authority (EBA) in accordance with CRR.

5.5 IRB approach

In accordance with the articles 452 and 453 CRR in conjunction with the guidelines EBA/GL/2016/11 (incl. EU CRE), the following chapter contains information concerning default exposures for which the pbb Group calculates the risk-weighted receivables amounts using the advanced IRB approach based on internal rating methods (IRBA). This is not applicable for exposures for which the value of the receivable is calculated in accordance with part 3, title II, chapter 6 "Counterparty credit risk" or part 3, title II, chapter 5 "Securitisation" of the CRR. These derivative transactions and securitisations are described in the chapters 5.6 "Counterparty credit risk" and 5.8 "Securitisations". However, the following descriptions for the IRBA rating systems and the IRBA parameters which are used are applicable for the entire loan portfolio.

The net value of the on-balance-sheet and off-balance-sheet exposures amounts to a total of € 56,441 million (31 December 2018: € 58,528 million); of this figure, the IRB approach accounts for € 29,510 million or 52 % (31 December 2018: € 56,234 million or 96 %). As explained in the preceding chapters, the decline in the IRBA exposures is mainly due to the fact that the application submitted by pbb for applying the so-called permanent partial use (PPU) in accordance with article 150 CRR for the models in public investment finance (mainly applicable for loans to sovereigns and financial institutions) was approved by the ECB and the affected portfolios were returned to the standardised approach in the second half of 2019.

Approved IRB approaches

The pbb Group has received approval for applying the advanced IRB approach for the rating systems set out in the following. The rating systems have been accepted by the regulator.

With these IRBA rating systems, and as of 31 December 2019, the pbb Group achieves coverage of 77 % with regard to the exposure values (exposure at default, EAD) and 85 % regarding the risk-weighted assets (RWA).

Within the framework of the ongoing programme "Regulatory review of the IRB approach" of the European Banking Authority (EBA) for revising the IRBA models, the pbb Group aims to extend the IRBA coverage to the sub-portfolios "Developers who prepare balance sheets" as well as "Partnerships constituted under civil law" in the exposure class "Corporates". Apart from the above, there are currently no plans to extend the IRBA coverage to new exposure classes in the form of an implementation plan.

Figure 5: Rating systems in the IRB approach (EU CRE)

No.	Parameter	Model	Exposure classes	Scope ¹⁾	Modelling approach ²⁾
PD rating systems					
1	PD	SPV developer	Corporates/ Specialised financing	The obligor is an SPV (special-purpose vehicle), whereby the financed property/property portfolio is the sole business purpose and asset of the SPV and the liability is limited to the SPV (non-recourse financing)	Based on statistical default models
2	PD	SPV investors	Corporates/ Specialised financing		
3	PD	Housing associations	Corporates	Real estate customers whose main business comprises management of their own housing stock and whose credit standing is essentially related to this aspect	
4	PD	Investors who prepare balance sheets	Corporates	Customers who prepare balance sheets and whose main income is derived from real estate assets	
5	PD	Investors who do not prepare balance sheets	Corporates	Customers who do not prepare balance sheets, whose main income is derived from real estate assets	

Disclosure Report as of 31 December 2019

No.	Parameter	Model	Exposure classes	Scope ¹⁾	Modelling approach ²⁾
LGD rating systems					
6	LGD	International real estate financing (defaulted and non-defaulted obligors)	Corporates incl. specialised lending	Secured property financing, with main emphasis outside Germany	Stochastic simulation methods
7	LGD	National real estate financing (defaulted and non-defaulted obligors)	Corporates incl. specialised lending	Secured property financing, with main emphasis within Germany	Structure model
CCF rating system					
8	CCF	Credit conversion factor	Corporates incl. specialised lending	Mortgage loans	Historical mean

1) Simplified presentation of the scopes of the rating methods. The precise scopes are defined in the relevant work instructions.

2) Method underlying the rating procedure.

Internal rating systems must meet the minimum requirements regarding the use of the IRB approach in accordance with the articles 143 and 144 CRR. In addition to requirements regarding methods and process organisation, the rating systems must have demonstrated their suitability for risk classification for existing business as well as new business. In accordance with article 142 CRR, rating or appraisal systems are considered to be the totality of all methods, procedures, controls, data collation and IT systems which are used for assessing credit risks, for allocating exposures to rating classes or categories as well as for quantifying default and loss assessments for a certain exposure type.

PD, LGD and CCF rating systems

In the pbb Group, the defined application scopes of the rating systems are used for allocating a debtor of an IRBA default exposure to the PD, LGD and CCF rating systems. Compliance with the scopes of application is assessed in the rating process or is assured by technical means in the system.

The PD, LGD and CCF rating systems of the pbb Group essentially follow a through-the-cycle philosophy, whereby the form of this philosophy can distinguish between the various models due to various factors, including the risk factors recognised in the model. Current default rates, loss rates and CCF ratios may thus differ from the through-the-cycle forecasts depending on the current position in the economic cycle.

PD rating systems

The PD rating systems for commercial real estate financing are based on logistic regression models which have been developed and calibrated on the basis of historical internal obligor data (default information and qualitative as well as quantitative risk factors) as well as expert assessments. The calibration is based on data for a period of min. seven years. The risk factors are weighted and aggregated to form a score which is transformed to an individual probability of default. This is subsequently translated to a PD category with the aid of a uniform PD master scale. The PD rating systems for commercial real estate financing take account of traditional parameters such as the ratio between the amount of the loan and the market value of a property or the capital service coverage but also, in general, information concerning the property or property portfolio of the obligor (for instance quality of the location, vacancy rate, regional information) as well as information concerning the obligor himself (e.g. commercial/technical skills, information concerning the client/bank relationship).

In addition to quantitative and qualitative risk factors, the PD rating systems of the pbb Group also take account of varying degrees of warning signals. Warning signals generally identify rare events; for instance, a negative feature which has a negative impact on the rating but which, if it occurs, has a significant influence on the rating of the obligor. In addition, the PD rating systems of the pbb Group ensure that the PD of an obligor cannot be better than the PD of the country which is relevant for the obligor. This so-called sovereign ceiling takes account of state-related additional risks, for instance transfer risks, for creating a rating for a customer.

The pbb Group uses a uniform PD master scale of 27 PD categories for obligors who have not yet defaulted; this is identical for all rating systems and across all exposure classes, meaning that the rating classification is equivalent for all default exposures. Unique probabilities of default as PD estimates as well as upper and lower limits of probabilities of default are allocated to the 27 PD categories of the PD master scale.

LGD rating systems

The LGD rating systems of the pbb Group result in estimated loss percentages relating to the exposure at default (EAD).

The LGD rating system for international commercial real estate financing is based on a stochastic simulation method which, in addition to future macro-economic developments, also simulates future developments which are specific to the real estate market and which calculates the impact on the cash flows and the real estate market value of the specific financing arrangement. Historical defaults since 2008 have been taken into consideration for calibrating the model.

The LGD rating system for real estate financing in Germany is based on a structural approach, in which the market value of the real estate collateral plays a key role in the LGD estimate. Individual parameters of the model (for instance revenue ratios, processing durations) are determined for differentiated segments (incl. property types) on the basis of historical data of the pbb Group as well as the data pooling initiative of the Verband deutscher Pfandbriefbanken (VdP). Data at least since 2008 are generally used for this purpose.

For the individual LGD rating systems, downturn analyses and statistical significance tests ensure that the models are suitable for forecasting downturn LGDs.

CCF rating system

In the pbb Group, there is a model for predicting a credit conversion factor (CCF) for mortgage loans. This is based on the observed drawing pattern of historical internal defaults since 2008 in the period of twelve months before the actual default. A CCF of 100 % is used for all other products (for instance guarantees).

Further use of internal estimates

The internal estimations of probability of default (PD) and loss given default (LGD) are important parameters for risk management and credit decisions. Within the framework of the lending decision-making process, the risk and capital costs, which form the basis for risk-adjusted pricing and the lending decision, are determined with due consideration being given to these risk parameters.

The PD and LGD risk parameters are used to derive expected loss (EL) categories which form the basis for the allocation of competences in the pbb Group within the framework of loan approvals and loan processing.

The results of the internal rating systems are also included in the internal capital adequacy assessment process (ICAAP), and are taken into consideration for determining on-balance-sheet risk provisioning.

Recognition of credit risk mitigation techniques

Within the framework of credit risk mitigation, the pbb Group recognises the following as collateral:

- Real estate (property charges)
- Financial collateral
- Warranties and guarantees.

The main types of physical collateral used for the purpose of mitigating credit risk in the LGD models for estimating loss given default are property charges (real estate) for commercial real estate mortgages. Financial collateral (mainly cash collateral and in certain cases securities), such as is used mainly for derivative default exposures by means of collateral agreements with the counterparties, are recognised in EAD as a credit risk mitigating factor. In addition to the above-mentioned collateral, warranties and guarantees are also taken into consideration as a risk-mitigating factor.

The value of collateral is verified on an ad-hoc basis and also within the framework of the regular annual credit rating assessment of borrowers by the loan officers; external or internal appraisals are also used in the case of real estate collateral. For further information regarding the allowable collateral, the corresponding valuation and administration, please refer to chapter 5.3 "Credit risk mitigation techniques".

Implemented control mechanisms for rating systems

The Group Risk Committee (GRC) is responsible for developing and validating the rating systems in the pbb Group. The GRC is a sub-committee of the Management Board, and is the decision-making committee with regard to issues relating to the risk method, the definition of risk parameters or risk monitoring and relevant related guidelines.

The GRC commissions work on developing new models or extending existing models, drawing up validation concepts and carrying out validations in Risk Management & Control (RMC). The RMC function is independent of areas which are responsible for initiating and concluding transactions. The credit risk monitoring unit in this particular area has group-wide responsibility for the development, introduction, maintenance, monitoring and further development of all rating systems. The resultant results are presented to the GRC and must be approved by the GRC.

All PD and LGD rating systems are subject to an annual validation process. The calibration, selectivity and stability of the procedures, the data quality as well as the model design are assessed on the basis of statistical and qualitative analyses as well as on the basis of user feedback.

For the German real estate financing LGD rating system, the pbb Group is additionally part of the pool validation by the association of German Pfandbrief banks (VdP).

Technical control mechanisms have been implemented for the purpose of checking the completeness and validating the input data for the rating systems; these include a release process based on a dual control principle.

The Internal Audit function acts as a process-independent organisation and is responsible for regularly checking whether the internal rating systems are appropriate and comply with the minimum requirements for rating systems as well as implemented process changes.

Types of receivables per IRBA exposure category

The pbb Group attributes obligors to the PD and LGD rating systems based on the defined scope of application; this has to be assessed in the rating process.

Exposures to central governments and central banks

The IRBA exposure category Central Governments and Central Banks does not exist in the pbb Group.

Exposures to institutions

The IRBA exposure category Institutions does not exist in the pbb Group.

Exposures to corporates

Rating systems which consist of statistical model cores and which have been extended to include expert model components in risk classification are used for the exposure category Corporates (incl. specialised lending). With all rating systems which are used, the initial rating is followed by a subsequent rating at least once every year. In the event of information with a major impact on the credit rating, a re-rating process is carried out in the course of the year.

For the purpose of data processing, all relevant input values and the rating results are stored in order to ensure a complete rating history for every obligor and every guarantor as well as every transaction which is prone to credit risks.

Obligors are allocated to PD categories on the basis of probabilities of default in accordance with a 27-stage PD master scale or by means of tables which map letter ratings to PD categories depending on the particular segment.

Retail exposures

The IRBA exposure category Retail Business does not exist in the pbb Group.

Equity exposures

As was the case in the previous year, the pbb Group has been using the simple IRBA risk weight for its equity exposures in accordance with article 155 (2) CRR.

Definition of default

The definition of a default used in the pbb Group is set out in article 178 CRR.

IRBA parameters

The exposure at default (EAD) is the relevant regulatory parameter used for determining the risk-weighted assets (RWA) and for calculating the own funds requirements.

The EAD for IRBA positions in line with CRR shows the outstanding receivable in the event of a default. For most products, this is the IFRS carrying amount shown in the balance sheet, incl. cumulative interest. In the event of a committed credit line, this is multiplied by the product-specific credit conversion factor (CCF) and forms a further part of the EAD. The credit conversion factor (CCF) expresses the expected utilisation (in percent) of an existing undrawn credit line within one year until the event of a default. The CCF is currently 50 % to 100 % for mortgage loans and 100 % for all other products (e.g. guarantee loans and public investment finance).

Derivatives and security financing transactions (security lending/repo transactions) form an exception in this respect; for these transactions, the EAD does not correspond to the carrying amount, and instead has to be established with a different method in accordance with CRR (e.g. for derivatives in accordance with the mark-to-market method: market value plus regulatory add-on for potential future increases in market value, taking account of any effects of netting and collateral which is provided).

The EAD is established for all receivables, irrespective of whether or not a default has occurred.

Disclosure Report as of 31 December 2019

The following table in accordance with article 452 letters d to f CRR in conjunction with EU CR6 of the guidelines EBA/GL/2016/11 shows (broken down according to PD areas and IRBA exposure categories) the (on-balance-sheet and off-balance-sheet) original receivable amounts as well as the corresponding IRBA exposure amounts (EAD) as well as the risk-weighted receivable amounts (RWA) together with the RWA density, in conjunction with the main parameters which are used for calculating the own funds requirements with the rating systems described above: These include the weighted average IRBA parameters probability of default (PD), loss given default (LGD), product-specific credit conversion factor (CCF) and maturity (in years) as well as the amounts of the expected loss (EL) and the impairments/provisions which have been created.

In accordance with article 452 letter j (i) CRR, the information is shown altogether and additionally for the region of the credit exposures (i.e. the accounting office of the transaction). Accordingly, for credit exposures in Germany where pbb is authorised as well as in the countries in which the pbb Group carries out its transactions by way of a branch or subsidiary. pbb has branches in London, Madrid, Paris and Stockholm. The IRBA exposures (EAD) totalling € 28,509 million are spread over the corresponding countries as follows:

• Germany	€ 27,015 million	or	95 %
• United Kingdom	€ 860 million	or	63 %
• France	€ 634 million	or	2 %
• Sweden	€ 0.3 million	or	<0.01 %
• Spain	€ 0.02 million	or	<0.01 %

Due to considerations of materiality, the pbb Group does not disclose the transactions recorded in Sweden and Spain in the tables; the percentage of these transactions in relation to the credit risk exposures is less than 0.01 % in each case.

Since the year 2016, pbb has been recording its new domestic and international business only in Germany.

Disclosure Report as of 31 December 2019

Table 37a: IRBA exposures and PD ranges (EU CR6) – Total

All figures in € million, unless otherwise stated

Exposure classes according to PD ranges in %	Original on-balance-sheet gross exposures ¹⁾	Off-balance-sheet exposures pre-CCF ²⁾	Average CCF ³⁾ in %	Exposure at default (EAD) post CRM and post CCF ⁴⁾	Average PD ⁵⁾ in %	Number of obligors	Average LGD ⁶⁾ in %	Average maturity in years	Risk-weighted assets (RWA)	RWA density ⁷⁾ in %	Expected loss (EL)	Value adjustments (allowances) and provisions
IRB approach	a	b	c	d	e	f	g	h	i	j	k	l
1 Central governments and central banks	-	-	-	-	-	-	-	-	-	-	-	-
11 Institutions	-	-	-	-	-	-	-	-	-	-	-	-
21 Corporates												
22 0,00 to < 0,15	1,324	-	-	1,218	0.09%	67	6%	4	59	5%	0.1	_____
23 0,15 to < 0,25	2,407	53	86%	2,443	0.20%	107	15%	4	403	16%	0.7	_____
24 0,25 to < 0,50	8,112	320	73%	8,298	0.39%	270	22%	3	2,722	33%	7	_____
25 0,50 to < 0,75	-	-	-	-	-	-	-	-	-	-	-	_____
26 0,75 to < 2,50	10,304	928	71%	10,889	1.33%	224	25%	4	6,405	59%	36	_____
27 2,50 to < 10,00	3,541	1,948	83%	4,990	3.69%	104	23%	4	3,508	70%	43	_____
28 10,00 to < 100,00	185	9	50%	189	10.06%	5	39%	2	298	157%	7	_____
29 100,00 (Default)	411	-	-	411	100%	13	21%	1	257	62%	67	_____
30 Subtotal	26,284	3,258	79%	28,438	2.80%	790	22%	4	13,652	48%	161	103
31 thereof: specialised lending												
32 0,00 to < 0,15	187	-	-	187	0.09%	12	24%	3	23	12%	0.04	_____
33 0,15 to < 0,25	1,845	15	50%	1,853	0.20%	41	17%	4	346	19%	0.6	_____
34 0,25 to < 0,50	6,925	175	52%	6,997	0.38%	151	24%	3	2,466	35%	7	_____
35 0,50 to < 0,75	-	-	-	-	-	-	-	-	-	-	-	_____
36 0,75 to < 2,50	9,659	853	72%	10,207	1.35%	168	26%	3	6,279	62%	36	_____
37 2,50 to < 10,00	3,530	1,840	81%	4,871	3.69%	89	23%	4	3,466	71%	42	_____
38 10,00 to < 100,00	135	9	50%	140	10.04%	2	45%	1	259	186%	6	_____
39 100,00 (Default)	400	-	-	400	100%	7	21%	1	250	62%	64	_____
40 Subtotal	22,680	2,893	77%	24,653	3.09%	470	24%	3	13,089	53%	156	97

Disclosure Report as of 31 December 2019

All figures in € million, unless otherwise stated

Exposure classes according to PD ranges in %	Original on-balance-sheet gross exposures ¹⁾	Off-balance-sheet exposures pre-CCF ²⁾	Average CCF ³⁾ in %	Exposure at default (EAD) post CRM and post CCF ⁴⁾	Average PD ⁵⁾ in %	Number of obligors	Average LGD ⁶⁾ in %	Average maturity in years	Risk-weighted assets (RWA)	RWA density ⁷⁾ in %	Expected loss (EL)	Value adjustments (allowances) and provisions
IRB approach	a	b	c	d	e	f	g	h	i	j	k	l
41 thereof: SMEs												
42 0,00 to < 0,15	78	-	-	62	0.09%	29	3%	5	2	3%	0.002	_____
43 0,15 to < 0,25	81	-	-	80	0.20%	46	5%	4	5	6%	0.01	_____
44 0,25 to < 0,50	1,003	141	88%	1,113	0.42%	88	13%	5	251	23%	1	_____
45 0,50 to < 0,75	-	-	-	-	-	-	-	-	-	-	-	_____
46 0,75 to < 2,50	539	75	50%	576	1.12%	42	9%	5	117	20%	1	_____
47 2,50 to < 10,00	9	108	100%	117	3.93%	10	12%	5	41	35%	1	_____
48 10,00 to < 100,00	49	-	-	49	10.00%	1	22%	3	38	78%	1	_____
49 100,00 (Default)	8	-	-	8	100%	4	27%	5	5	62%	2	_____
50 Subtotal	1,768	324	87%	2,006	1.46%	220	11%	5	459	23%	5	4
51 thereof: purchased receivables	-	-	-	-	-	-	-	-	-	-	-	-
61 Retail	-	-	-	-	-	-	-	-	-	-	-	-
62 Equity	0.02	-	-	0.02	-	2	-	-	0.1	370%	-	_____
63 thereof: internal model approach (IMA)	-	-	-	-	-	-	-	-	-	-	-	_____
64 thereof: PD-/LGD approach	-	-	-	-	-	-	-	-	-	-	-	_____
65 thereof: simple risk-weighting approach	0.02	-	-	0.02	-	2	-	-	0.1	370%	-	_____
66 Other non credit-obligation assets	72	-	-	72	-	1	-	-	72	1	-	-
67 Total IRB approach	26,355	3,258	79%	28,509	2.80%	793	22%	4	13,723	48%	161	103

1) Gross carrying value before deduction of allowances (but after write-offs) as well as before considering any credit risk mitigation (CRM) techniques.

2) Nominal value before deduction of provisions as well as before considering any credit risk mitigation (CRM) techniques and before credit conversion factors (CCF).

3) Relationship between column (d) and column (b) for off-balance-sheet exposures.

4) IRBA regulatory exposure value (exposure at default, EAD), i.e. after considering any credit risk mitigation (CRM) techniques and credit conversion factors (CCF), but before credit risk adjustment (allowances and provisions).

5) Average probability of default (PD) weighted by the EAD.

6) Average loss given default (LGD) weighted by the EAD.

7) Relationship between column (i) and column (d).

Disclosure Report as of 31 December 2019

Table 37b: IRBA exposures and PD ranges (EU CR6) – Germany

All figures in € million, unless otherwise stated

Exposure classes according to PD ranges in % IRB approach	Original on-balance-sheet gross exposures ¹⁾	Off-balance-sheet exposures pre-CCF ²⁾	Average CCF ³⁾ in %	Exposure at default (EAD) post CRM and post CCF ⁴⁾	Average PD ⁵⁾ in %	Number of obligors	Average LGD ⁶⁾ in %	Average maturity in years	Risk-weighted assets (RWA)	RWA density ⁷⁾ in %	Expected loss (EL)	Value adjustments (allowances) and provisions
	a	b	c	d	e	f	g	h	i	j	k	l
1 Central governments and central banks	-	-	-	-	-	-	-	-	-	-	-	-
11 Institutions	-	-	-	-	-	-	-	-	-	-	-	-
21 Corporates												
22 0,00 to < 0,15	1,324	-	-	1,218	0.09%	67	6%	4	59	5%	0.1	_____
23 0,15 to < 0,25	2,267	53	86%	2,303	0.20%	105	13%	4	344	15%	1	_____
24 0,25 to < 0,50	7,659	320	73%	7,846	0.39%	260	21%	3	2,531	32%	7	_____
25 0,50 to < 0,75	-	-	-	-	-	-	-	-	-	-	-	_____
26 0,75 to < 2,50	9,931	925	71%	10,514	1.32%	215	25%	4	6,138	58%	34	_____
27 2,50 to < 10,00	3,450	1,948	83%	4,898	3.65%	102	23%	4	3,412	70%	41	_____
28 10,00 to < 100,00	50	5	50%	52	10.23%	4	23%	3	42	81%	1	_____
29 100,00 (Default)	121	-	-	121	100%	9	22%	2	76	62.5%	20	_____
30 Subtotal	24,802	3,250	79%	26,952	1.78%	762	22%	4	12,602	47%	104	59
31 thereof: specialised lending												
32 0,00 to < 0,15	187	-	-	187	0.09%	12	24%	3	23	12%	0.04	_____
33 0,15 to < 0,25	1,705	15	50%	1,713	0.20%	39	15%	4	287	17%	1	_____
34 0,25 to < 0,50	6,472	175	52%	6,544	0.39%	141	23%	3	2,274	35%	6	_____
35 0,50 to < 0,75	-	-	-	-	-	-	-	-	-	-	-	_____
36 0,75 to < 2,50	9,286	850	72%	9,832	1.33%	159	26%	4	6,012	61%	33	_____
37 2,50 to < 10,00	3,438	1,840	81%	4,779	3.64%	87	23%	4	3,370	71%	40	_____
38 10,00 to < 100,00	-	5	50%	2	12.50%	1	45%	1	4	160%	0.1	_____
39 100,00 (Default)	110	-	-	110	100%	3	21%	1	69	62%	18	_____
40 Subtotal	21,198	2,885	77%	23,167	1.92%	442	24%	3	12,039	52%	98	54

Disclosure Report as of 31 December 2019

All figures in € million, unless otherwise stated

Exposure classes according to PD ranges in %	Original on-balance-sheet gross exposures ¹⁾	Off-balance-sheet exposures pre-CCF ²⁾	Average CCF ³⁾ in %	Exposure at default (EAD) post CRM and post CCF ⁴⁾	Average PD ⁵⁾ in %	Number of obligors	Average LGD ⁶⁾ in %	Average maturity in years	Risk-weighted assets (RWA)	RWA density ⁷⁾ in %	Expected loss (EL)	Value adjustments (allowances) and provisions
IRB approach	a	b	c	d	e	f	g	h	i	j	k	l
41 thereof: SMEs												
42 0,00 to < 0,15	78	-	-	62	0.09%	29	3%	5	2	3%	0.002	_____
43 0,15 to < 0,25	81	-	-	80	0.20%	46	5%	4	5	6%	0.01	_____
44 0,25 to < 0,50	1,003	141	88%	1,113	0.42%	88	13%	5	251	23%	1	_____
45 0,50 to < 0,75	-	-	-	-	-	-	-	-	-	-	-	_____
46 0,75 to < 2,50	539	75	50%	576	1.12%	42	9%	5	117	20%	1	_____
47 2,50 to < 10,00	9	108	100%	117	3.93%	10	12%	5	41	35%	1	_____
48 10,00 to < 100,00	49	-	-	49	10.00%	1	22%	3	38	78%	1	_____
49 100,00 (Default)	8	-	-	8	100%	4	27%	5	5	62%	2	_____
50 Subtotal	1,768	324	87%	2,006	1.46%	220	11%	5	459	23%	5	4
51 thereof: purchased receivables	-	-	-	-	-	-	-	-	-	-	-	-
61 Retail	-	-	-	-	-	-	-	-	-	-	-	-
62 Equity	0.02	-	-	0.02	-	2	-	-	0.1	370%	-	_____
63 thereof: internal model approach (IMA)	-	-	-	-	-	-	-	-	-	-	-	_____
64 thereof: PD-/LGD approach	-	-	-	-	-	-	-	-	-	-	-	_____
65 thereof: simple risk-weighting approach	0.02	-	-	0.02	-	2	-	-	0.1	370%	-	_____
66 Other non credit-obligation assets	63	-	-	63	-	1	-	-	63	1	-	-
67 Total IRB approach	24,865	3,250	79%	27,015	1.78%	765	22%	4	12,665	47%	104	59

1) Gross carrying value before deduction of allowances (but after write-offs) as well as before considering any credit risk mitigation (CRM) techniques.

2) Nominal value before deduction of provisions as well as before considering any credit risk mitigation (CRM) techniques and before credit conversion factors (CCF).

3) Relationship between column (d) and column (b) for off-balance-sheet exposures.

4) IRBA regulatory exposure value (exposure at default, EAD), i.e. after considering any credit risk mitigation (CRM) techniques and credit conversion factors (CCF), but before credit risk adjustment (allowances and provisions).

5) Average probability of default (PD) weighted by the EAD.

6) Average loss given default (LGD) weighted by the EAD.

7) Relationship between column (i) and column (d).

Disclosure Report as of 31 December 2019

Table 37c: IRBA exposures and PD ranges (EU CR6) – United Kingdom

All figures in € million, unless otherwise stated

Exposure classes according to PD ranges in % IRB approach	Original on-balance-sheet gross exposures ¹⁾	Off-balance-sheet exposures pre-CCF ²⁾	Average CCF ³⁾ in %	Exposure at default (EAD) post CRM and post CCF ⁴⁾	Average PD ⁵⁾ in %	Number of obligors	Average LGD ⁶⁾ in %	Average maturity in years	Risk-weighted assets (RWA)	RWA density ⁷⁾ in %	Expected loss (EL)	Value adjustments (allowances) and provisions
	a	b	c	d	e	f	g	h	i	j	k	l
1 Central governments and central banks	-	-	-	-	-	-	-	-	-	-	-	-
11 Institutions	-	-	-	-	-	-	-	-	-	-	-	-
21 Corporates												
22 0,00 to < 0,15	-	-	-	-	-	-	-	-	-	-	-	
23 0,15 to < 0,25	-	-	-	-	-	-	-	-	-	-	-	
24 0,25 to < 0,50	302	-	-	302	0.35%	6	35%	2	125	41%	0.4	
25 0,50 to < 0,75	-	-	-	-	-	-	-	-	-	-	-	
26 0,75 to < 2,50	172	-	-	172	1.60%	5	35%	1	103	60%	1	
27 2,50 to < 10,00	92	0.5	50%	92	6.00%	2	35%	1	96	105%	2	
28 10,00 to < 100,00	-	-	-	-	-	-	-	-	-	-	-	
29 100,00 (Default)	290	-	-	290	100%	4	21%	1	181	62.5%	47	
30 Subtotal	855	0.5	50%	856	34.94%	17	30%	1	505	59%	50	42
31 thereof: specialised lending												
32 0,00 to < 0,15	-	-	-	-	-	-	-	-	-	-	-	
33 0,15 to < 0,25	-	-	-	-	-	-	-	-	-	-	-	
34 0,25 to < 0,50	302	-	-	302	0.35%	6	35%	2	125	41%	0.4	
35 0,50 to < 0,75	-	-	-	-	-	-	-	-	-	-	-	
36 0,75 to < 2,50	172	-	-	172	1.60%	5	35%	1	103	60%	1	
37 2,50 to < 10,00	92	0.5	50%	92	6.00%	2	35%	1	96	105%	2	
38 10,00 to < 100,00	-	-	-	-	-	-	-	-	-	-	-	
39 100,00 (Default)	290	-	-	290	100%	4	21%	1	181	62%	47	
40 Subtotal	855	0.5	50%	856	34.94%	17	30%	1	505	59%	50	42

Disclosure Report as of 31 December 2019

All figures in € million, unless otherwise stated

Exposure classes according to PD ranges in % IRB approach	Original on-balance-sheet gross exposures ¹⁾	Off-balance-sheet exposures pre-CCF ²⁾	Average CCF ³⁾ in %	Exposure at default (EAD) post CRM and post CCF ⁴⁾	Average PD ⁵⁾ in %	Number of obligors	Average LGD ⁶⁾ in %	Average maturity in years	Risk-weighted assets (RWA)	RWA density ⁷⁾ in %	Expected loss (EL)	Value adjustments (allowances) and provisions
	a	b	c	d	e	f	g	h	i	j	k	l
41 thereof: SMEs	-	-	-	-	-	-	-	-	-	-	-	-
51 thereof: purchased receivables	-	-	-	-	-	-	-	-	-	-	-	-
61 Retail	-	-	-	-	-	-	-	-	-	-	-	-
62 Equity	-	-	-	-	-	-	-	-	-	-	-	-
63 thereof: internal model approach (IMA)	-	-	-	-	-	-	-	-	-	-	-	-
64 thereof: PD-/LGD approach	-	-	-	-	-	-	-	-	-	-	-	-
65 thereof: simple risk-weighting approach	-	-	-	-	-	-	-	-	-	-	-	-
66 Other non credit-obligation assets	4	-	-	4	-	1	-	-	4	1	-	-
67 Total IRB approach	860	0.5	50%	860	34.76%	18	30%	1	510	59%	50	42

1) Gross carrying value before deduction of allowances (but after write-offs) as well as before considering any credit risk mitigation (CRM) techniques.

2) Nominal value before deduction of provisions as well as before considering any credit risk mitigation (CRM) techniques and before credit conversion factors (CCF).

3) Relationship between column (d) and column (b) for off-balance-sheet exposures.

4) IRBA regulatory exposure value (exposure at default, EAD), i.e. after considering any credit risk mitigation (CRM) techniques and credit conversion factors (CCF), but before credit risk adjustment (allowances and provisions).

5) Average probability of default (PD) weighted by the EAD.

6) Average loss given default (LGD) weighted by the EAD.

7) Relationship between column (i) and column (d).

Disclosure Report as of 31 December 2019

Table 37d: IRBA exposures and PD ranges (EU CR6) – France

All figures in € million, unless otherwise stated

Exposure classes according to PD ranges in % IRB approach	Original on-balance-sheet gross exposures ¹⁾	Off-balance-sheet exposures pre-CCF ²⁾	Average CCF ³⁾ in %	Exposure at default (EAD) post CRM and post CCF ⁴⁾	Average PD ⁵⁾ in %	Number of obligors	Average LGD ⁶⁾ in %	Average maturity in years	Risk-weighted assets (RWA)	RWA density ⁷⁾ in %	Expected loss (EL)	Value adjustments (allowances) and provisions
	a	b	c	d	e	f	g	h	i	j	k	l
1 Central governments and central banks	-	-	-	-	-	-	-	-	-	-	-	-
11 Institutions	-	-	-	-	-	-	-	-	-	-	-	-
21 Corporates												
22 0,00 to < 0,15	-	-	-	-	-	-	-	-	-	-	-	-
23 0,15 to < 0,25	140	-	-	140	0.20%	2	35%	3	59	42%	0.1	-
24 0,25 to < 0,50	150	-	-	150	0.37%	4	35%	3	67	45%	0.2	-
25 0,50 to < 0,75	-	-	-	-	-	-	-	-	-	-	-	-
26 0,75 to < 2,50	201	4	50%	203	1.81%	4	35%	3	163	80%	1	-
27 2,50 to < 10,00	-	-	-	-	-	-	-	-	-	-	-	-
28 10,00 to < 100,00	135	4	50%	137	10.00%	1	45%	1	255	186%	6	-
29 100,00 (Default)	-	-	-	-	-	-	-	-	-	-	-	-
30 Subtotal	626	8	50%	630	2.89%	11	37%	3	544	86%	8	2
31 thereof: specialised lending												
32 0,00 to < 0,15	-	-	-	-	-	-	-	-	-	-	-	-
33 0,15 to < 0,25	140	-	-	140	0.20%	2	35%	3	59	42%	0.1	-
34 0,25 to < 0,50	150	-	-	150	0.37%	4	35%	3	67	45%	0.2	-
35 0,50 to < 0,75	-	-	-	-	-	-	-	-	-	-	-	-
36 0,75 to < 2,50	201	4	50%	203	1.81%	4	35%	3	163	80%	1	-
37 2,50 to < 10,00	-	-	-	-	-	-	-	-	-	-	-	-
38 10,00 to < 100,00	135	4	50%	137	10.00%	1	45%	1	255	186%	6	-
39 100,00 (Default)	-	-	-	-	-	-	-	-	-	-	-	-
40 Subtotal	626	8	50%	630	2.89%	11	37%	3	544	86%	8	2

Disclosure Report as of 31 December 2019

All figures in € million, unless otherwise stated

Exposure classes according to PD ranges in % IRB approach	Original on-balance-sheet gross exposures ¹⁾	Off-balance-sheet exposures pre-CCF ²⁾	Average CCF ³⁾ in %	Exposure at default (EAD) post CRM and post CCF ⁴⁾	Average PD ⁵⁾ in %	Number of obligors	Average LGD ⁶⁾ in %	Average maturity in years	Risk-weighted assets (RWA)	RWA density ⁷⁾ in %	Expected loss (EL)	Value adjustments (allowances) and provisions
	a	b	c	d	e	f	g	h	i	j	k	l
41 thereof: SMEs	-	-	-	-	-	-	-	-	-	-	-	-
51 thereof: purchased receivables	-	-	-	-	-	-	-	-	-	-	-	-
61 Retail	-	-	-	-	-	-	-	-	-	-	-	-
62 Equity	-	-	-	-	-	-	-	-	-	-	-	-
63 thereof: internal model approach (IMA)	-	-	-	-	-	-	-	-	-	-	-	-
64 thereof: PD-/LGD approach	-	-	-	-	-	-	-	-	-	-	-	-
65 thereof: simple risk-weighting approach	-	-	-	-	-	-	-	-	-	-	-	-
66 Other non credit-obligation assets	3.7	-	-	3.7	-	1	-	-	3.7	1	-	-
67 Total IRB approach	630	8	50%	634	2.88%	12	37%	3	548	86%	8	2

1) Gross carrying value before deduction of allowances (but after write-offs) as well as before considering any credit risk mitigation (CRM) techniques.

2) Nominal value before deduction of provisions as well as before considering any credit risk mitigation (CRM) techniques and before credit conversion factors (CCF).

3) Relationship between column (d) and column (b) for off-balance-sheet exposures.

4) IRBA regulatory exposure value (exposure at default, EAD), i.e. after considering any credit risk mitigation (CRM) techniques and credit conversion factors (CCF), but before credit risk adjustment (allowances and provisions).

5) Average probability of default (PD) weighted by the EAD.

6) Average loss given default (LGD) weighted by the EAD.

7) Relationship between column (i) and column (d).

Disclosure Report as of 31 December 2019

For IRBA positions (excl. counterparty credit risk exposures), the EAD amounted to € 28,509 million as of 31 December 2019 (31 December 2018: € 55,190 million), and the RWA amounted to € 13,723 million (31 December 2018: € 12,503 million).

The average RWA density for the IRBA loan receivables is 48 % across all IRBA exposure classes (31 December 2018: 23 %). Risk weights are important factors when determining risk-weighted assets which must be backed with own funds in a risk-oriented manner; the RWAs are calculated by multiplying the risk weight with the IRBA exposure at default (EAD). The changes in the RWAs in 2019 as well as the main reasons for such changes are shown in the following table "RWA flow statements of credit risk exposures under the IRB approach (EU CR8)".

The loss given default (LGD) indicates the expected loss suffered by the pbb Group if a customer fails to pay. In the IRB approach, this is 22 % on average for the loan receivables (excluding counterparty credit risk exposures) (31 December 2018: 18 %).

The probability of default (PD) indicates the probability that a borrower/counterparty will be unable over a period of one year to service their contractual loan obligations (irrespective of the amount of the exposure and the collateral provided). The PD (excluding counterparty credit risk exposures) on average is 2.80 % (31 December 2018: 1.31 %).

The unutilised IRBA loan commitments amounted to a total of € 3,258 million (31 December 2018: € 4,489 million). The average credit conversion factor (CCF) which expresses the expected utilisation (in percent) of an existing undrawn credit line within one year until the event of a default amounts to 79 % (31 December 2018: 86 %).

Model estimates for PD, LGD and CCF contain conservative adjustments which cover estimation uncertainties associated with the models. Estimates for LGD and CCF are also designed as so-called downturn estimates, i.e. the aim is to achieve a forecast of figures which are also appropriate in periods affected by an economic downturn.

The following table in accordance with article 438 letter d CRR in conjunction with EU CR8 of the EBA/GL/2016/11 shows the changes in the risk-weighted position amounts (RWA) shown in table EU CR6 during the reporting period as well as the major reasons for such changes. The RWA in the IRB approach amounted to € 13,723 million as of the reporting date (31 December 2018: € 12,503 million). As expected, and in accordance with previous capital market communication, the RWAs increased in the fourth quarter of 2019, and are € 1,220 million higher than the corresponding previous end-of-year figure.

Table 38: RWA flow statements of credit risk exposures under the IRB approach (EU CR8)

All figures in € million

IRB approach ¹⁾		Risk-weighted assets (RWA)	Minimum capital requirement
		a	b
1	RWA on 31.12.2018	12,503	1,000
2	Asset size	1,376	110
3	Asset quality	21	2
4	Model updates	5,625	450
5	Methodology and policy	-	-
6	Acquisitions and disposals	-	-
7	Foreign exchange movements	-	-
8	Other	-5,802	-464
9	RWA on 31.12.2019	13,723	1,098

1) Without counterparty credit risk (derivative transactions) in accordance with Part Three, Title II, Chapter 6 of the CRR.

The main reason for the total increase of € 1,220 million in the risk-weighted assets (RWA) is a higher risk weighting in strategic sub-portfolios of commercial real estate financing, which follows the new requirements of the European Banking Authority (EBA) and which, in the opinion of pbb, is probably also consistent with the anticipated risk weightings of the future requirements under Basel IV of the Basel Committee on Banking Supervision (BCBS). At the same time, pbb thus addresses the expectation of the capital market of taking account of imminent regulatory changes at an early stage, and cushions cycle-induced fluctuations in RWA.

As part of the processes of reviewing the internal models in connection with the targeted review of internal models (TRIM), pbb transferred sub-portfolios to the standardised approach (see line 8 of table EU CR8) in the fourth quarter of 2019; this essentially affects loans to sovereigns and financial institutions. In parallel, pbb is revising the remaining IRBA models (line 4 of table EU CR8) for the main portfolios in commercial real estate financing in line with the regulatory regulations, and in particular the EBA guidelines. This process of revising models is expected to be finalised in the course of 2020. The aim is to identify a new model landscape which considerably reduces the complexity. As of 31 December 2019, due consideration had been given to the intended new risk weightings in the core portfolio by way of a higher calibration of the LGDs (loss given default). This has resulted in an increase in the risk-weighted assets, which the pbb Group has dimensioned to an expected Basel IV-compliant level.

A further factor behind the increase in RWA is the new business in commercial real estate financing carried out in the financial year 2019, whereas repayments of loans and bonds which fell due as well as redemptions had the opposite effect (line 2 of table EU CR8).

Disclosure of the table EU CR7 in accordance with article 453 letter g CRR in conjunction with EU CR7 of the guidelines EBA/GL/2016/11, regarding the impact on the RWA of credit derivatives used for credit risk mitigation purposes, is not relevant for the pbb Group. As was the case in the previous year, the pbb Group does not have any credit derivatives in its portfolio.

Backtesting IRBA parameters

The following tables in accordance with article 452 letter i CRR in conjunction with EU CR9 as well as points 110 and 111 of the EBA/GL/2016/11 contain information regarding backtesting of the model parameters Probability of default (PD), loss given default (LGD), credit conversion factor (CCF) and expected loss (EL) for the advanced IRB approach based on internal rating methods of the bank. This is based on all IRBA models used in the pbb Group. Due to the permanent partial use (PPU) in accordance with article 150 CRR, some sub-portfolios were returned to the standardised approach. This return was also transferred to past times for constructing the following tables. Details in text form are used for the credit conversion factor (CCF).

Disclosure Report as of 31 December 2019

Table 39: Backtesting of probability of default per exposure class (EU CR9)

Exposure classes according to PD ranges ¹⁾ IRB approach	External rating equivalent ²⁾ S&P	Average PD ³⁾ 31.12.2018	Arithmetic average PD by obligors ⁴⁾ 31.12.2018	Number of obligors		Defaulted obligors in the reporting year ⁷⁾ thereof new obligors ⁸⁾		Average historical annual default rate ⁹⁾
				End of previous year ⁵⁾ 31.12.2018	End of reporting year ⁶⁾ 31.12.2019	f	g	
				a	b	c	d	
1 Central governments and central banks		-	-	-	-	-	-	-
11 Institutions		-	-	-	-	-	-	-
21 Corporates								
22 0,00 to < 0,15	AAA to BBB+	0.10%	0.09%	64	60	-	-	0.00%
23 0,15 to < 0,25	BBB to BBB	0.20%	0.20%	108	104	-	-	0.00%
24 0,25 to < 0,50	BBB- to BB+	0.39%	0.39%	273	266	1	-	0.07%
25 0,50 to < 0,75	-	-	-	-	-	-	-	-
26 0,75 to < 2,50	BB to B+	1.29%	1.29%	241	218	2	-	0.48%
27 2,50 to < 10,00	B to B-	3.69%	3.87%	125	102	1	-	1.35%
28 10,00 to < 100,00	CCC+ to CCC-	11.27%	12.81%	8	5	-	-	4.00%
29 Subtotal (without default)		1.55%	1.26%	819	755	4	0	0.39%
30 100,00 (Default)		100%	100%	12	13	-	-	-
31 thereof: specialised lending								
32 0,00 to < 0,15	AAA to BBB+	0.10%	0.10%	16	12	-	-	0.00%
33 0,15 to < 0,25	BBB to BBB	0.20%	0.20%	41	41	-	-	0.00%
34 0,25 to < 0,50	BBB- to BB+	0.39%	0.39%	141	146	-	-	0.00%
35 0,50 to < 0,75	-	-	-	-	-	-	-	-
36 0,75 to < 2,50	BB to B+	1.30%	1.33%	175	163	2	-	0.77%
37 2,50 to < 10,00	B to B-	3.70%	3.97%	105	87	1	-	1.89%
38 10,00 to < 100,00	CCC+ to CCC-	11.25%	11.25%	6	2	-	-	0.00%
39 Subtotal (without default)		1.72%	1.62%	484	451	3	0	0.58%
40 100,00 (Default)		100%	100%	8	7	-	-	-

Disclosure Report as of 31 December 2019

Exposure classes according to PD ranges ¹⁾ IRB approach	External rating equivalent ²⁾	Average PD ³⁾	Arithmetic average PD by obligors ⁴⁾	Number of obligors		Defaulted obligors in the reporting year ⁷⁾		Average historical annual default rate ⁹⁾	
	S&P	31.12.2018	31.12.2018	End of previous year ⁵⁾	End of reporting year ⁶⁾		thereof new obligors ⁸⁾		
	a	b	c	d	e	f	g	h	
41	thereof: SMEs								
42	0,00 to < 0,15	AAA to BBB+	0.08%	0.09%	28	28	-	-	0.00%
43	0,15 to < 0,25	BBB to BBB	0.20%	0.20%	49	45	-	-	0.00%
44	0,25 to < 0,50	BBB- to BB+	0.40%	0.38%	82	89	1	-	0.24%
45	0,50 to < 0,75	-	-	-	-	-	-	-	-
46	0,75 to < 2,50	BB to B+	1.08%	1.16%	44	41	-	-	0.00%
47	2,50 to < 10,00	B to B-	3.19%	3.77%	11	10	-	-	0.65%
48	10,00 to < 100,00	CCC+ to CCC-	-	-	-	1	-	-	11.11%
49	Subtotal (without default)		0.57%	0.64%	214	214	1	0	0.20%
50	100,00 (Default)		100%	100%	3	4	-	-	-
51	Retail		-	-	-	-	-	-	-
52	Equity ¹⁰⁾		-	-	-	-	-	-	-
56	Total IRB approach								
57	thereof: default		100%	100%	12	13			
58	thereof: non-default		1.55%	1.26%	819	755	4	0	0.39%

1) PD range at the beginning of the reporting period. Counterparty credit risk exposures (derivatives) in accordance with Part Three, Title II, Chapter 6 of the CRR are included in the table.

2) External rating of Standard & Poor's corresponding to the PD ranges.

3) Average probability of default (PD) weighted by the EAD, at the beginning of the reporting period.

4) Average probability of default (PD) weighted by obligors, at the beginning of the reporting period.

5) Number of obligors at the beginning of the reporting period.

6) Number of obligors at the end of the reporting period.

7) Number of obligors defaulted during the reporting year.

8) Number of the new obligors having defaulted during the reporting period and that were not funded at the end of the previous financial year.

9) The 5-year average of the annual default rate, i.e. the relationship between the obligors at the beginning of each year that have defaulted during that year and the total obligor holdings at the beginning of the year.

10) The pbb Group applies the simple IRBA risk weight for equity exposures in accordance with article 155 (2) CRR, so there is no breakdown by PD ranges.

Disclosure Report as of 31 December 2019

Table 40: Backtesting of loss given default per exposure class (EU CR9)

Exposure classes IRB approach	Actual LGD	Number of obligors		Estimation of LGD	
	Defaulted obligors ¹⁾	Non-defaulted obligors ²⁾	Defaulted obligors ³⁾	Non-defaulted obligors ⁴⁾	Defaulted obligors ⁵⁾
	All defaults completed in the reporting year	Not in Default	In Default	Not in Default	In Default
	31.12.2019	31.12.2018	31.12.2018	31.12.2018	31.12.2018
	a	b	c	d	e
1 Central governments and central banks	-	-	-	-	-
2 Institutions	-	-	-	-	-
3 Corporates	34.79%	819	12	11.18%	37.88%
4 thereof: specialised lending	34.79%	484	8	11.32%	42.69%
5 thereof: SMEs	-	214	3	10.09%	27.20%
6 Retail	-	-	-	-	-
7 Equity	-	-	-	-	-
8 thereof: Internal model approach (IMA)	-	-	-	-	-
9 thereof: PD-/LGD approach	-	-	-	-	-
10 thereof: simple risk-weighting approach	-	-	-	-	-
11 Total IRB approach	34.79%	819	12	11.18%	37.88%

- 1) Realised loss given default (LGD) of all completed defaults in the reporting year.
2) Number of obligors who were not in default at the beginning of the reporting period.
3) Number of obligors who were in default at the beginning of the reporting period.
4) Average loss given default (LGD) of obligors who were not in default at the beginning of the reporting period.
5) Average loss given default (LGD) of obligors who were in default at the beginning of the reporting period.

There were only four defaults in the reporting period. One new obligor, whose financing had not yet been established at the end of 2018 is not included in this group. In view of the low quantities in certain cases (particularly with regard to the defaults in recent years) and also in view of the calibration of rating models to long-term average default rates, the average historical default rate may differ from the forecast average PD. No observations are ascribed to the PD range 0.50 to 0.75 in view of the uniform PD master scale of the pbb Group which is used. The IRBA exposure categories Central Governments and Central Banks, Institutions and Retail Business do not exist in the pbb Group.

In the reporting period (1 January 2019 to 31 December 2019), there was no default of any customer who had a free line in the previous year (2018). For this reason, it is not possible to provide any details regarding backtesting of the credit conversion factor in relation to the reporting period.

The expected loss (EL) for a period of one year is determined for all exposures except for non-performing loans for which a stage 3 impairment has already been recognised. The EL is calculated based on the parameters defined by the CRR, i.e. the one-year probability of default (PD), multiplied by the loss given default (LGD) and the exposure at default (EAD): $EL = EAD \times PD \times LGD$.

The following table in accordance with article 452 letter i CRR in conjunction with EU CR9 as well as points 110 and 111 of the EBA/GL/2016/11 (in addition to the above backtesting tables for PD and LGD) compares the expected losses (EL) for the commercial real estate financing loans in the IRB approach (excluding defaulted and impaired loans of the IFRS 9 impairment stage 3) with the losses which actually occurred in the financial year.

Incurred losses are defined as the sum of additions and reversals of stage 3 impairments in lending business, additions and reversals of provisions in lending business, direct write-downs and recoveries relating to loans which had previously been written off.

The comparison between the expected losses and actually incurred losses must take account of the fact that the figures, due to considerations of methodology, are only comparable with each other to a limited extent. Moreover, the expected losses refer to

Disclosure Report as of 31 December 2019

a static portfolio of exposures, whereas the actually incurred losses result from a credit portfolio which is subject to changes in the course of a year.

Table 41: Expected and incurred losses in the lending business per exposure class (EU CR9)

All figures in € million

Exposure classes IRB approach	Expected loss ¹⁾	Incurred loss ²⁾	Expected loss ¹⁾	Incurred loss ²⁾	Expected loss ¹⁾	Incurred loss ²⁾
	31.12.2018	2019	31.12.2017	2018	31.12.2016	2017
	a	b	c	d	e	f
1 Central governments and central banks	-	-	-	-	-	-
2 Institutions	-	-	-	-	-	-
3 Corporates	52	33	59	24	38	1
4 thereof: specialised lending	49	33	53	23	26	1
5 thereof: small and medium-sized enterprises (SME)	1	-	4	1	-	-
6 Retail	-	-	-	-	-	-
7 Equity	-	-	-	-	-	-
8 Total	52	33	59	24	38	1

1) Expected credit loss (for a period of 1 year) for real estate financing loans (mortgage loans and current account loans) in the IRB approach; excluded are already defaulted and impaired non-performing loans in the impairment level 3 of IFRS 9.

2) Additions less reversals of level 3 impairments in accordance with IFRS 9 (individual allowances in accordance with IAS 39) and provisions in the real estate financing business, plus direct write-offs less income from recoveries from written-off financial assets.

The incurred loss for real estate financing loans in the IRB approach amounted to € 33 million (net additions of stage 3 impairments). The actually incurred loss in the financial year 2019 is thus lower than the figure of € 52 million expected at the end of 2018.

The expected loss for real estate financing loans as of 31 December 2019 for a period of one year - excluding defaulted and impaired non-performing loans of impairment stage 3 - amounted to € 93 million.

It has to be noted that future changes (for instance in the economy or developments relating to individual risks) may lead to changes in the above-mentioned EL figures. Over a period of time, the default and loss history of the pbb Group may also lead to adjustments of estimated risk parameters within the framework of annual checks to identify the need for re-calibration. The actually incurred losses may also differ from the expected losses.

The loss given default (LGD) for non-defaulted real estate loans was 22 % on average. For the entire real estate finance portfolio, the LGD average was also 22 %.

For the real estate financing loans which have not defaulted, the probability of default (PD) is 1.4 % on average.

5.6 Counterparty credit risk

This chapter shows information in accordance with the articles 439, 444 and 452 CRR for exposures for which the value of the receivable is calculated in accordance with part 3, title II, chapter 6 “Counterparty credit risk” of the CRR. These regulations for calculating the exposure value for the counterparty credit risk are applied by the pbb Group for derivative transactions, using the mark-to-market method in accordance with article 274 CRR.

The pbb Group does not use a method based on an internal model (IMM). Disclosure of the table EU CCR7 in accordance with EBA/GL/2016/11 is accordingly not relevant for the pbb Group. As was the case in the previous year, the pbb Group had again not carried out any hedging transactions with credit derivatives as of 31 December 2019 (neither as a protection taker nor as a protection giver), and also does not operate in the field of prime brokerage. The tables in accordance with article 439 letters g and h CRR and the table EU CCR6 in accordance with EBA/GL/2016/11 are therefore not applicable.

For security financing transactions (security lending/repo transactions), the pbb Group uses the regulations for mitigating credit risk (for financial securities) in accordance with chapter 4 of the CRR (comprehensive method in accordance with article 223 et seq. CRR); this is the reason why these transactions are not shown in the counterparty credit risk tables (the table EU CCR1 is an exception in this respect); instead, they are shown in the credit risk tables.

Objective

The pbb Group uses derivatives mainly to hedge market risks resulting for instance from changes in interest rates or exchange rates. These hedging transactions are opposed by underlyings of asset or liability positions. The hedging of interest and exchange rate risks is intended to reduce and/or avoid market risks.

The counterparties in derivatives business are mainly OECD credit institutions. The pbb Group also provides derivatives for real estate customers and public law entities, for instance to enable them to hedge market risks of commercial real estate financing.

Netting and collateral agreements

In accordance with article 439 letter b CRR in conjunction with EU CCRA letter c of the guidelines EBA/GL/2016/11, the following details describe the regulations for collateral and the measures for mitigating risk in relation to derivative transactions. For this purpose, the pbb Group uses the standard framework agreements including the corresponding collateral agreements. For further information, please refer to chapter 5.3 “Credit risk mitigation techniques”, section “Eligible netting agreements”.

Netting agreements

The business with derivatives is usually based on standard mutual netting agreements which aim to minimise legal risks as well as economic and regulatory credit risks, and which enable mutual risks to be netted. This means that positive and negative market values of derivative contracts included under a netting agreement can be offset against each other and future regulatory risk premiums for these products can be reduced. Within the framework of the netting process, the credit risk is reduced to a single net receivable due from the contracting party.

These risk-mitigating techniques are used for the purpose of regulatory reporting and the internal measurement and monitoring of credit commitments only if they are considered to be enforceable in the relevant jurisdiction in the event of the insolvency of the business partner. Legal appraisals are used for assessing such enforceability.

The national and international agreements used for this purpose are the German Master Agreement for Financial Futures (DRV) based on German law as well as the ISDA Master Agreement of the International Swaps and Derivatives Association (ISDA).

pbb is a direct clearing member of Eurex Clearing. Eurex Clearing is the central clearing house used by pbb or the qualified central counterparty (qualified CCP) in accordance with article 4 point 88 CRR. The pbb Group uses the possibility of using a central counterparty for clearing purposes for certain contract types and of thus reducing bilateral default risk.

Collateral management

By way of analogy with the netting agreements, the pbb Group also concludes collateral agreements with certain business partners in addition to the netting agreements (German hedging appendix to the DRV or ISDA Collateral Support Annex) in order to hedge any net receivables/liabilities which may be due after netting (receipt or provision of collateral). These collateral service agreements limit the credit risk by means of a timely assessment and adjustment of the customer exposure (limit relief), thereby creating scope for new business transactions within the granted counterparty lines.

Collateral is received mainly in the form of cash collateral and, in certain cases, securities. Collateral which is received is systematically documented.

The current hedging requirement is determined on a daily basis within the framework of mark-to-market evaluations and agreed with the counterparties. If threshold amounts have been agreed, collateral is only requested once the threshold for the particular contracting party has been attained. The same is applicable for any minimum transfer amounts which have been agreed. A call will be made only when the respective minimum transfer amount has been attained or exceeded. If there is a change in the mark-to-market valuation to a level below this threshold, no call is made in order to limit processing costs. Incoming payments are monitored and the counterparty is sent a reminder when needed.

A collateral service agreement is also in place with the central Eurex Clearing counterparty. Collateral is mainly provided in the form of securities using a specific securities portfolio set up for this purpose for Eurex Clearing. Cash collateral can however also be provided.

Derivative credit risk exposures

Within the framework of its over-the-counter (OTC) business, the pbb Group is exposed to credit risks relating to business with derivatives.

Potential replacement cost

The two following tables in accordance with article 439 letter e CRR in conjunction with EU CCR5-A and EU CCR5-B of the EBA/GL/2016/11 show the extent to which the pbb Group has exposures in various contract types and also the extent to which it uses legally enforceable derivative netting agreements and collateral netting. The collateral which is received and provided for the purpose of reducing the counterparty credit risk is broken down according to types of collateral (cash collateral and securities). Netting agreements and eligible collateral relate to all types of contract within a framework agreement; this is the reason why these positions are not broken down according to contract type. The pbb Group does not use netting covering all products (derivatives versus security financing transactions).

Disclosure Report as of 31 December 2019

Table 42: Impact of netting and collateral held on exposure values (EU CCR5-A)

All figures in € million

Counterparty credit risk exposures by contract types	Gross positive fair value or net carrying amount ¹⁾	Netting benefits	Netted current credit exposure	Eligible collateral held ²⁾	Net credit exposure ³⁾
	a	b	c	d	e
1 Derivatives	2,916	1,534	1,382	1,199	182
1a Interest risk rate	2,885				
1b Foreign exchange rate risk	20				
1c Exchange/ index-related risk	-				
1d Credit derivatives	-				
1e Commodity-based risk	-				
1f Others	11				
2 Securities financing transactions (SFT) ⁴⁾	-	-	-	-	-
3 Cross-product netting ⁵⁾	-	-	-	-	-
4 Total	2,916	1,534	1,382	1,199	182

1) Current positive market value before netting and eligible received collateral.

2) Eligible received collateral after deduction of a safety margin (haircut).

3) Current positive market value after taking into account the positive effects of legally enforceable netting and collateral agreements.

4) pbb Group does not calculate the exposure value for securities lending/repo transactions in accordance with Part Three, Title II, Chapter 6, but in acc. with Chapter 4 "Credit risk mitigation" of the CRF

5) pbb Group does not apply cross-product netting (e.g. derivatives and securities financing transactions).

Table 43: Collateral for exposures to counterparty credit risk (EU CCR5-B)

All figures in € million

Types of collateral	Collateral used in derivative transactions ¹⁾				Collateral used in SFTs ⁴⁾	
	Fair value of collateral received		Fair value of collateral posted		Fair value of collateral received	Fair value of collateral posted
	Segregated ²⁾	Unsegregated ³⁾	Segregated ²⁾	Unsegregated ³⁾		
a	b	c	d	e	f	
1 Cash	-	1,327	-	2,062	-	-
2 thereof: EUR	-	1,292	-	2,033	-	-
3 thereof: USD	-	35	-	-	-	-
4 thereof: GBP	-	-	-	29	-	-
5 thereof: CHF	-	-	-	0.4	-	-
6 Securities	-	-	24	-	-	-
7 Total	0	1,327	24	2,062	0	0

1) Total collateral received / posted as of 31 December 2019.

2) Refers to collateral that is held in a bankruptcy-remote manner in the meaning of Article 300 in the CRR.

3) Refers to collateral that is not held in a bankruptcy-remote manner.

4) pbb Group does not calculate the exposure value for securities lending / repo transactions in acc. with Part Three, Title II, Chapter 6, but in acc. with Chapter 4 "Credit risk mitigation" of the CRR.

Derivative positions result not only in market risks but also credit risks if a claim against a counterparty arises in the form of positive market values. From the perspective of the pbb Group, these positive replacement values (positive gross fair values) are relevant for assessing the risk, as they correspond to the additional expense or reduced income which would result from the replacement of an equivalent position following a default of the counterparty. Accordingly, the positive market values are considered to be replacement cost for regulatory purposes.

The positive replacement values (before netting and collateral) of derivative transactions declined to € 2,916 million as of 31 December 2019 (31 December 2018: € 2,957 million). The decline of € 41 million compared with the previous year is attributable to the decline in the volume of derivatives as well as the on-balance-sheet netting of derivatives concluded with Eurex Clearing.

Disclosure Report as of 31 December 2019

In the financial year 2019, new derivative contracts which were concluded were settled via Eurex Clearing and derivatives with bilateral counterparties from the portfolio were converted to Eurex Clearing.

The amount of € 2,916 million (before netting and collateral which is received) corresponds to the expenses which the pbb Group would incur for replacing originally concluded contracts by means of transactions of equal commercial significance. Accordingly, from the point of view of the pbb Group, this amount indicates the maximum potential counterparty-related credit risk. From the regulatory point of view, these expenses are considered to be replacement costs. Most of these costs relate to interest rate swaps.

By concluding mutual netting agreements allowing for negative and market values across all contracts to be netted within a single framework agreement, the counterparty-related credit risk is reduced to one single net receivable due from the contracting party. The pbb Group has used derivative netting with an amount of € 1,534 million.

The pbb Group has concluded collateral agreements with its business partners to hedge the net receivable in the amount of € 1,382 million remaining after netting. Most of the eligible collateral received (€ 1,199 billion) is in the form of cash collateral. Overall, the pbb Group has received collateral in the amount of € 1,327 million. As a result of hedging, the credit risk or the net credit exposure has declined to € 182 million (31 December 2018: € 186 million).

Exposure values

The calculation of the regulatory receivables (risk-weighted assets) for the credit risk resulting from derivative positions is based on so-called credit equivalent amounts and not on the positive replacement values described above. The credit equivalent amounts correspond to the exposures at default (EAD) of the default exposures shown in the balance sheet. The credit equivalent amounts are determined on the basis of the current potential replacement cost and an expected future increase in the current potential replacement cost, the potential future replacement cost (regulatory add-on).

The counterparty credit risk of derivative transactions is shown in the following two tables in accordance with article 439 letters e, f and i CRR in conjunction with EU CCR1 and EU CCR8 of the EBA/GL/2016/11. Table EU CCR1 (excl. receivables due to the central counterparty Eurex Clearing) provides an overview of the calculation of the regulatory requirements for the methods used for the counterparty credit risk as well as the main parameters of the respective methods. For calculating the credit equivalent amounts, the pbb Group uses the mark-to-market method according to article 274 CRR. Table EU CCR8 shows the exposure at default (EAD) and the risk-weighted assets (RWA) for receivables due from central counterparties, including the exposures of pre-financed contributions to the default fund with regard to a central counterparty. The central clearing house used by pbb or the qualified central counterparty in accordance with article 4 point 88 CRR is Eurex Clearing. pbb is a direct clearing member.

Disclosure Report as of 31 December 2019

Table 44: Counterparty credit risk by approach (EU CCR1)

All figures in € million

Methods for calculating the regulatory exposure value		Notional	Replacement cost / current market value ¹⁾	Potential future credit exposure	EEPE ²⁾	Multiplier ³⁾	EAD post CRM ⁴⁾	Risk-weighted assets (RWA)
		a	b	c	d	e	g	g
1	Mark-to-market method	—	179	241	—	—	421	277
2	Original exposure method	-	—	—	—	—	-	-
3	Standardised approach	—	-	—	—	-	-	-
4	IMM (for derivatives and SFTs)	—	—	—	-	-	-	-
5	thereof: securities financing transactions (SFT)	—	—	—	-	-	-	-
6	thereof: derivatives and long settlement transactions	—	—	—	-	-	-	-
7	thereof: from contractual cross-product netting	—	—	—	-	-	-	-
8	Financial collateral simple method (for SFTs)	—	—	—	—	—	-	-
9	Financial collateral comprehensive method (for SFTs) ⁵⁾	—	—	—	—	—	2	0.4
10	VaR for SFTs	—	—	—	—	—	-	-
11	Total	—	—	—	—	—	—	277

- 1) Current positive market value after netting and after eligible received collateral, without exposures to central counterparties (CCP).
2) Effective expected positive exposure according to Article 284 CRR (Internal model method (IMM) based).
3) Multiplier according to Article 276 CRR (standardised approach) and Article 284 CRR (Internal model method).
4) Regulatory exposure value (exposure at default, EAD) or credit equivalent amount after considering any credit risk mitigation (CRM) techniques.
5) pbb Group does not calculate the exposure value for securities lending/repo transactions in acc. with Part Three, Title II, Chapter 6, but in acc. with Chapter 4 "Credit risk mitigation" of the CRR.

Table 45: Exposures to central counterparties (EU CCR8)

All figures in € million

Exposures to central counterparties (CCP)		EAD post CRM ¹⁾	Risk-weighted assets (RWA)
		a	b
1	Exposures to qualified Central Counterparties (QCCP) total	—	3
2	Exposures for trades at QCCPs (excluding initial margin and default fund contributions), thereof:	101	2
3	i) OTC derivatives	101	2
4	ii) Exchange-traded derivatives	-	-
5	iii) Securities financing transactions (SFTs)	-	-
6	iv) Netting sets where cross-product netting has been approved	-	-
7	Segregated ²⁾ initial margin	-	—
8	Non-segregated ³⁾ initial margin	-	-
9	Prefunded default fund contributions	8	1
10	Alternative calculation of own funds requirements for exposures	—	-
11	Exposures to non-qualified Central Counterparties (Non-QCCP) total	—	0
12	Exposures for trades at non-QCCPs (excluding initial margin and default fund contributions), thereof:	-	-
13	i) OTC derivatives	-	-
14	ii) Exchange-traded derivatives	-	-
15	iii) Securities financing transactions (SFT)	-	-
16	iv) Netting sets where cross-product netting has been approved	-	-
17	Segregated ²⁾ initial margin	-	—
18	Non-segregated ³⁾ initial margin	-	-

Disclosure Report as of 31 December 2019

All figures in € million

Exposures to central counterparties (CCP)		EAD post CRM ¹⁾	Risk-weighted assets (RWA)
		a	b
19	Prefunded default fund contributions	-	-
20	Unfunded default fund contributions	-	-

1) Regulatory exposure value (exposure at default, EAD) or credit equivalent amount after considering any credit risk mitigation (CRM) techniques, without exposures to non-CCPs.

2) Refers to collateral that is held in a bankruptcy-remote manner in the meaning of Article 300 in the CRR.

3) Refers to collateral that is not held in a bankruptcy-remote manner.

The credit equivalent amount (exposure at default, EAD) for the counterparty credit risk of derivative transactions calculated using the mark-to-market method amounted to € 522 million at the end of 2019 (31 December 2018: € 562 million); of this figure, € 101 million (31 December 2018: € 92 million) is attributable to receivables due from the central counterparty Eurex Clearing. The exposures for pre-financed contributions to the default fund due to a central counterparty amounted to approx. € 8 million (unchanged compared with the previous year). The pbb Group uses the risk-sensitive method in accordance with article 308 CRR for calculating the own funds requirements for pre-financed contributions to the default fund of a qualified central counterparty.

Exposures at default according to the credit risk approach

The following tables show the derivative counterparty credit exposures broken down according to the credit risk approach used for calculating the risk-weighted assets (RWA), the standardised approach (CRSA) or the advanced IRB approach (IRBA).

The table in accordance with article 444 letter e CRR in conjunction with EU CCR3 of the EBA/GL/2016/11 contains a break-down of the counterparty credit risk exposures in the standardised approach according to the type of counterparty and according to the risk weight allocated in the standardised approach. pbb also discloses all receivables due from Eurex Clearing in the CRSA, in the exposure category Institutions.

The table in accordance with article 452 letter e CRR in conjunction with EU CCR4 of the EBA/GL/2016/11 shows a break-down of the counterparty credit risk exposures in the IRB approach according to the type of counterparty and various PD areas defined by the EBA and also according to additional important risk parameters. Additional disclosure of this table in accordance with article 452 letter j (i) CRR for every regional nature of the exposures is not relevant for the pbb Group. The derivative transactions are carried out exclusively by pbb, which is headquartered in Germany.

The IRBA models used at the level of the pbb Group for calculating the own funds requirements for the counterparty credit risk, the related scope as well as the attribution of an obligor to an IRBA credit risk exposure to the rating systems are explained in the chapter 5.5 "IRB approach".

Table 46: Counterparty credit risk exposures under the standardised approach (EU CCR3)

All figures in € million, unless otherwise stated

Exposure classes Standardised approach (CRSA)	Risk weight											Total ¹⁾	thereof unrated ²⁾
	0%	2%	4%	10%	20%	50%	70%	75%	100%	150%	Others		
	a	b	c	d	e	f	g	h	i	j	k		
1 Central governments or central banks	-	-	-	-	-	-	-	-	-	-	-	-	-
2 Regional governments or local authorities	2	-	-	-	-	-	-	-	-	-	-	2	2
3 Public sector entities	-	-	-	-	-	-	-	-	-	-	-	-	-
4 Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-	-	-
5 International organisations	-	-	-	-	-	-	-	-	-	-	-	-	-

Disclosure Report as of 31 December 2019

All figures in € million, unless otherwise stated

Exposure classes Standardised approach (CRSA)	Risk weight											Total ¹⁾	thereof unrated ²⁾
	0%	2%	4%	10%	20%	50%	70%	75%	100%	150%	Others		
	a	b	c	d	e	f	g	h	i	j	k		
6 Institutions	-	101	-	-	39	220	-	-	-	-	-	359	103
7 Corporates	19	-	-	-	-	-	-	-	5	-	-	24	5
8 Retail	-	-	-	-	-	-	-	-	-	-	-	-	-
8a Secured by mortgages on immovable property	-	-	-	-	-	-	-	-	-	-	-	-	-
8b Exposures in default	-	-	-	-	-	-	-	-	-	-	-	-	-
8c Exposures associated with particularly high risk	-	-	-	-	-	-	-	-	-	-	-	-	-
8d Covered bonds	-	-	-	-	-	-	-	-	-	-	-	-	-
9 Exposures to institutions and corporates with short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-
9a Exposures in the form of units or shares in collective investment undertakings (CIUs)	-	-	-	-	-	-	-	-	-	-	-	-	-
9b Equity exposures	-	-	-	-	-	-	-	-	-	-	-	-	-
10 Other items	-	-	-	-	-	-	-	-	-	-	-	-	-
11 Total	21	101	0	0	39	220	0	0	5	0	0	385	110

1) CRSA-regulatory exposure value (exposure at default, EAD) or credit equivalent amount after considering any credit risk mitigation (CRM) techniques.

2) A credit assessment by a nominated ECAI (External Credit Assessment Institutions) is not available.

Table 47: Counterparty credit risk exposures under the IRB approach (EU CCR4)

All figures in € million, unless otherwise stated

Exposure classes according to PD ranges IRB approach	Exposure at default (EAD) post CRM ¹⁾	Average PD ²⁾ in %	Number of obligors	Average LGD ³⁾ in %	Average maturity in years	Risk-weighted assets (RWA)	RWA density ⁴⁾ in %
	a	b	c	d	e	f	g
1 Central governments and central banks	-	-	-	-	-	-	-
11 Institutions	-	-	-	-	-	-	-
21 Corporates							
22 0,00 to < 0,15	3	0.05%	3	56%	5	1	42%
23 0,15 to < 0,25	19	0.20%	10	56%	4	14	75%
24 0,25 to < 0,50	51	0.41%	55	56%	3	43	85%
25 0,50 to < 0,75	-	-	-	-	-	-	-
26 0,75 to < 2,50	49	1.26%	52	56%	4	69	140%
27 2,50 to < 10,00	7	3.01%	16	56%	3	10	157%
28 10,00 to < 100,00	8	10.00%	1	56%	3	16	199%
29 100,00 (Default)	-	-	-	-	-	-	-
30 Subtotal	137	1.39%	137	56%	4	155	113%
31 thereof: specialised lending							
32 0,00 to < 0,15	1	0.06%	2	56%	3	0.2	33%
33 0,15 to < 0,25	11	0.20%	9	56%	5	9	79%
34 0,25 to < 0,50	45	0.41%	53	56%	4	40	88%
35 0,50 to < 0,75	-	-	-	-	-	-	-
36 0,75 to < 2,50	47	1.27%	51	56%	4	67	142%
37 2,50 to < 10,00	7	3.01%	16	56%	3	10	157%
38 10,00 to < 100,00	-	-	-	-	-	-	-
39 100,00 (Default)	-	-	-	-	-	-	-
40 Subtotal	110	0.91%	131	56%	4	126	114%

Disclosure Report as of 31 December 2019

All figures in € million, unless otherwise stated

Exposure classes according to PD ranges IRB approach	Exposure at default (EAD) post CRM ¹⁾	Average PD ²⁾ in %	Number of obligors	Average LGD ³⁾ in %	Average maturity in years	Risk-weighted assets (RWA)	RWA density ⁴⁾ in %
	a	b	c	d	e	f	g
41 thereof: SMEs							
42 0,00 to < 0,15	-	-	-	-	-	-	-
43 0,15 to < 0,25	-	-	-	-	-	-	-
44 0,25 to < 0,50	4	0.45%	1	56%	1	2	59%
45 0,50 to < 0,75	-	-	-	-	-	-	-
46 0,75 to < 2,50	2	1.00%	1	56%	3	3	103%
47 2,50 to < 10,00	-	-	-	-	-	-	-
48 10,00 to < 100,00	8	10.00%	1	56%	3	16	199%
49 100,00 (Default)	-	-	-	-	-	-	-
50 Subtotal	15	5.87%	3	56%	3	21	145%
51 Retail	-	-	-	-	-	-	-
52 Equity	-	-	-	-	-	-	-
56 Total	137	1.39%	137	56%	4	155	113%

1) IRBA regulatory exposure value (exposure at default, EAD) or credit equivalent amount after considering any credit risk mitigation (CRM) techniques.

2) Average probability of default (PD) weighted by the EAD.

3) Average loss given default (LGD) weighted by the EAD.

4) Relationship between column (f) and column (a).

CVA risk

The following table in accordance with article 439 letters e and f CRR in conjunction with EU CCR2 of the EBA/GL/2016/11 shows the exposure at default (EAD) and the risk-weighted assets (RWA) for the CVA charge.

The CVA charge is the additional own funds requirement for the risk of adjusting the credit valuation (CVA risk) in the case of OTC derivatives, i.e. for potential (unexpected) losses of market value in connection with a decline in the credit standing of a counterparty. pbb calculates the own funds requirement for the risk of an adjustment to the credit valuation in accordance with the standard method pursuant to article 384 CRR, based on the mark-to-market method in accordance with article 274 CRR. In accordance with article 382 CRR, no CVA charge is calculated for receivables due from the central counterparty Eurex Clearing.

Table 48: Own-funds requirement for the risk of an adjustment to the credit valuation (EU CCR2)

All figures in € million

Methods used for determining the exposure value for the CVA risk	Exposure value ¹⁾	Risk-weighted assets (RWA)
	a	b
1 Total portfolios subject to the advanced method	-	-
2 i) VaR component (including the triple-multiplier)	-	-
3 ii) SVaR component (including the triple-multiplier)	-	-
4 All portfolios subject to the standardised method	259	239
EU4 Based on the original exposure method	-	-
5 Total subject to the CVA capital charge	259	239

1) Exposure value used to calculate the capital requirement for the risk of an adjustment of credit valuation (CVA risk) for OTC derivatives. This means the regulatory exposure value (exposure at default, EAD) after considering any credit risk mitigation (CRM) techniques.

Rating-based collateral service agreements

With some counterparties, the pbb Group has concluded rating-based collateral service agreements (CSA) which provide for an adjustment of the threshold amount or a reduction of the minimum transfer amount in the event of a rating downgrade. The extent of the adjustment is explicitly agreed with the contracting party in the collateral service agreement.

In the event of an adjustment to the threshold amount, the related cash flow would become immediately due as pbb would have to provide a higher collateral contribution in this case. In the event of an amendment to the minimum transfer amount, there would be a postponement in the cash flows, and there would not be any additional payments. This is related to the fact that the minimum transfer amount, unlike the threshold amount, does not involve the provision of additional collateral and instead specifies the amount from which payments must be made. If the minimum transfer amount is reduced, and if therefore payments have to be made from a lower threshold, this would not have any impact on the amount of collateral itself, and instead would only have an impact on the amount from which changes in value in the CSA portfolio would have to be settled. For smaller minimum transfer amounts, changes in value are thus settled at an earlier date.

Table 49: Threshold amounts and minimum transfer amounts in the derivatives business

All figures in € million

	Threshold amounts	Minimum transfer amounts
Deutsche Pfandbriefbank AG	-	34
Total	0	34

The figures in the above table show the threshold amounts and minimum transfer amounts which are agreed in the collateral service agreements and which are still relevant for current ratings. No collateral service agreement provides for any threshold amounts, there are only minimum transfer amounts. In a small number of cases, these amounts depend on the rating. As can be seen, the downgrading of a rating does not have any material impact on the liquidity of the pbb Group. This is due to the fact that most long-term ratings for the collateral service agreements (CSA) of pbb are already in the lowest category. The following table shows the senior unsecured ratings commissioned by pbb as of the reporting date.

Table 50: Senior unsecured ratings

	Standard & Poor's
Deutsche Pfandbriefbank AG	
Long-term issuer rating / outlook	A- / Negative
Short-term issuer rating	A-2
Long-term "preferred" senior unsecured debt rating ¹⁾	A-
Long-term "non-preferred" senior unsecured debt rating ²⁾	BBB-

1) "Senior unsecured debt"

3) "Senior subordinated debt"

Rating agencies may alter or withdraw their ratings at any time. Ratings of individual securities issued by pbb may deviate from the ratings indicated above, or not be rated at all. For the evaluation and usage of ratings, please refer to the rating agencies' pertinent criteria and explanations. The relevant terms of use are to be considered. Ratings should not serve as a substitute for personal analysis. They do not constitute a recommendation to purchase, sell or hold securities issued by pbb.

Internal capital allocation and upper limits for the counterparty credit risk

Capital allocation and the limitation of default risks for counterparties with derivative positions is embedded in the generally applicable allocation and limitation process for credit risks in the pbb Group. Limits are allocated primarily on the basis of the counterparties' credit rating for which the rating methods used play an important role. For details of the allocation of capital to the risk types, please refer to the chapter addressing ICAAP and monitoring of the risk-bearing capacity (see chapter 4.3 "Eco-

conomic capital and risk-bearing capacity"). In all other respects, the methods of regulatory large credit management are applicable. Risk Management & Control is responsible for ongoing monitoring of counterparty limit usage on a daily basis.

Correlations of market and counterparty risks

The requirements of article 439 letter c CRR concerning a description of regulations relating to correlation risks are not relevant for the pbb Group. The pbb Group does not trade any products whose underlying is directly correlated with the probability of default of the counterparty.

Accounting and valuation methods for derivatives

In accordance with article 439 letter b CRR in conjunction with EU CCRA letter c of the guidelines EBA/GL/2016/11, the following details describe the regulations for measuring and creating credit reserves (risk provisioning) for derivative transactions.

In accordance with IFRS 9, derivatives are measured at fair value, unless they are used as hedging instruments within the framework of cash flow hedge accounting. For such financial assets, which are subsequently measured at fair value through profit or loss, an impairment in fair value is implied. This means that value adjustments as a result of a counterparty credit risk are directly reflected in the process of determining the fair value. In the case of derivative assets measured at fair value through profit or loss, the maximum credit risk is reflected in the nominal value.

In the fourth quarter of 2019, the pbb Group extended the measurement of financial assets and financial liabilities to include mark-ups or mark-downs which generally have to be paid in the event of a disposal of the financial instrument (close-out costs) and also by costs related to price uncertainty for instance as a result of illiquid markets. Accordingly, variances from the mid-price in the event of a theoretical disposal of the financial instrument are taken into consideration as additional valuation components.

The positive/negative market values of the stand-alone derivatives are shown in the balance sheet under "Financial assets measured at fair value through profit or loss" or "Financial liabilities measured at fair value through profit or loss". Changes in the fair value during a period are shown through profit or loss under the position "Result of financial instruments measured at fair value through profit or loss" (fair value valuation result) of the income statement.

The positive/negative market values of the hedging derivatives are shown under the balance sheet items "Positive fair values of the hedging derivatives" or "Negative fair values of the hedging derivatives". Hedging derivatives contain the fair values of the derivatives which are used as hedges in hedge accounting. Because the pbb Group no longer designates any derivatives in the cash flow hedge accounting, this is only applicable for derivatives of micro fair value hedge accounting or the portfolio hedge of interest rate risks which are measured at fair value. Changes in the fair value during a period are shown through profit or loss under the item "Result of hedges" in the income statement.

In order to account for counterparty credit risks in the case of OTC derivatives, the pbb Group determines credit value adjustments (CVA) and debt value adjustments (DVA), i.e. valuation adjustments of OTC derivatives within the framework of accounting. The CVA describes the valuation adjustments to reflect the default risk (the deterioration in the credit standing) of the counterparty, and the DVA describes the adjustments relating to the Group's own default risk (the deterioration in the Group's own credit standing) with regard to a counterparty. The CVA losses are recognised in the income statement and also for determining the risk exposure. The DVA adjustments are deducted from the common equity tier 1 capital.

5.7 Shareholdings in the banking book

Objective

The pbb Group takes on investments for achieving its corporate objectives exclusively for strategic considerations. The shareholdings of the pbb Group are therefore an essential element of the business model of the pbb Group described in chapter 2.1 “Organisational and legal structure”. The companies under pbb are legally and operationally separate entities, but pursue objectives which are coordinated at the Group level.

Accounting and valuation methods

The shareholdings of pbb are detailed in the notes to the annual report 2019 of the pbb Group (note 83 “Holdings of pbb”) which set out the subsidiaries and the shareholdings.

Consolidated subsidiaries

All fully consolidated companies have the calendar year as their financial year. The separate financial statements of the consolidated companies are included in the consolidated financial statements of pbb, using uniform accounting and valuation principles. Assets, liabilities, the equity, the income, expenses and cash flows of the parent company and of all its subsidiaries are shown as though they relate to a single company. Business relations within the scope of consolidation are netted, and intercompany results from internal transactions within the Group are eliminated.

Non-consolidated subsidiaries

As of 31 December 2019, the pbb Group did not have any non-consolidated subsidiaries (unchanged to the previous year).

Associated companies

As of 31 December 2019 (as was the case in the previous year), there were no material interests in associated companies or joint ventures. The shares which are not of a material nature from the point of view of the Group are not included in the consolidated financial statements using the at-equity method, and instead are recognised at fair value through through profit or loss in accordance with IFRS 9.

Values of shareholdings

In the following table, the shareholdings of the pbb Group are shown in accordance with their accounting classification in line with article 447 letters b and c CRR. The table shows only those shareholdings which are part of the regulatory consolidation scope. Items which are subject to the deduction method or which are subject to regulatory risk weighting are not included.

Table 51: Values of shareholdings based on their accounting classification

All figures in € million

Equity instruments by groups	Comparison		
	Carrying amount	Fair value	Market value (stock-market price)
Subsidiaries	14	14	-
Consolidated subsidiaries under accounting law			
thereof exchange-trade equity instruments	-	-	-
thereof unlisted, but part of a sufficiently diversified portfolio	-	-	-
thereof other investments	14	14	-
Non-consolidated subsidiaries under accounting law			
thereof exchange-trade equity instruments	-	-	-

Disclosure Report as of 31 December 2019

All figures in € million

Equity instruments by groups	Comparison		
	Carrying amount	Fair value	Market value (stock-market price)
thereof unlisted, but part of a sufficiently diversified portfolio	-	-	-
thereof other investments	-	-	-
Associated companies	-	-	-
Associated companies of minor significance			
thereof exchange-trade equity instruments	-	-	-
thereof unlisted, but part of a sufficiently diversified portfolio	-	-	-
thereof other investments	-	-	-

In addition to pbb as the parent company, the regulatory consolidation scope of the pbb Group comprises three companies which are also all consolidated in accordance with the IFRS consolidated financial statements. Accordingly, it is not necessary for a fair value to be additionally determined for these three companies. Their fair value is equal to their carrying amount. Altogether, the carrying amounts of the companies in the regulatory consolidation scope (excl. pbb itself) are stated as € 14 million (31 December 2018: € 20 million). None of the companies is listed.

Realised and unrealised gains and losses from shareholdings

In accordance with article 447 letters d and e CCR, the realised and unrealised gains and losses from shareholdings are stated in accordance with the regulations of IFRS 12.

Realised gains and losses

In the financial year 2019, there were no changes at the subsidiaries of the pbb Group. As was the case in the previous year, the pbb Group did not have any non-consolidated subsidiaries as of 31 December 2019. At the end of the previous year, the pbb Group still held shares in two associated companies: In view of their non-material nature for the pbb Group, these shares are not included in the consolidated financial statements using the at-equity method; instead, they are shown at fair value through profit or loss in accordance with IFRS 9. In the financial year 2019, the shares in SANO Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Dresden KG i. L., were sold for a price of less than € 1 million and without any impact on the results of operations. After the disposal, the pbb Group still holds shares in one associated company on 31 December 2019. The carrying amount of this share in SOMA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Darmstadt KG, Düsseldorf, is less than € 1 million. The share of the pbb Group in relation to the profit of this associated company is approximately € 1 million.

Unrealised gains and losses from revaluation

As was the case in the previous year, the pbb Group did not hold any shareholdings in companies as of 31 December 2019 for which the fair value could be reliably determined but which were not fully consolidated or recognised in accordance with the at-equity method. Accordingly, in the financial year 2019, the pbb Group did not have any unrealised gains or losses from revaluations resulting from changes in the fair value based on a subsequent fair value measurement.

Effects from deconsolidation

In 2019, there were no changes in the regulatory and also in the accounting scope of consolidation of the pbb Group.

5.8 Securitisations

As described in the Disclosure Reports as of 31 December 2018 (chapter 5.8 “Securitisations”) and 30 June 2019 (chapter 7 “Outlook”), the pbb Group in the previous year still had one of its own securitisation transactions (as originator) from the year 2007 in its portfolio, namely the synthetic securitisation transaction Estate UK-3. The risk-weighted receivable amounts and the own funds requirement amounted to € 0.

A predecessor institution of pbb - namely Hypo Real Estate Bank International AG, which was absorbed in pbb by way of merger - had in 2007 issued credit-linked notes (CLN) as backing for UK real estate loans within the framework of this synthetic securitisation transaction Estate UK-3 (UK-3). These CLNs (including the subordinate tranches) were sold in their entirety to investors. Subsequently, there was a default at one loan. pbb intended to allocate a resultant loss of GBP 113.8 million to the credit-linked note. Deloitte GmbH Wirtschaftsprüfungsgesellschaft, which safeguards the interests of the investors as a trustee within the framework of UK-3, reported doubts regarding the admissibility of the loss allocation. In June 2017, the trustee therefore appointed an independent expert to establish whether the criteria for loss allocation were applicable. The expert notified his findings on 28 June 2019. He considers that the allocation of a default-related loss of GBP 113.8 million to be fully admissible, and thus confirmed the opinion of pbb. The loss allocation has resulted in a corresponding reduction of the repayment claim under the credit-linked notes.

pbb allocated the loss to the credit-linked notes on 20 September 2019. The real estate loans underlying the securitisation were derecognised in the second half of 2019. The repayment claim of the CLNs amounted to approximately GBP 402 thousand as of 31 December 2019 (approximately € 472.5 thousand). The securitisation transaction expired on 20 March 2020 and has been repaid.

The pbb Group has accordingly not disclosed the securitisation tables in accordance with article 449 CRR due to considerations of materiality. The business strategy of the pbb Group currently does not define new securitisations as a corporate objective; this is the reason why the pbb Group has also not planned any new securitisations of own receivables for the financial year 2020.

6 Market risk

6.1 Management of market risk

Definition

Market risk is defined as the risk of a market value loss, or a negative change in net interest income for the period, due to volatility of the market prices of financial instruments. Transactions entered into by pbb Group are mainly exposed to the following types of market risk:

- General interest rate risk (risk from changes in market interest rates)
- Credit spread risk (risk from changes in credit spreads)
- Volatility risk (risk from changes in implied volatility)
- Foreign currency risk (risk from changes in foreign exchange rates)
- Basis risk (risk from changes in tenor basis spreads or cross-currency basis spreads)
- Concentration risk (risk of additional losses due to a non-diversified portfolio mix).

Interest rate risk in the banking book

Following the introduction of EBA guidelines EBA/GL/2018/02 on controlling interest rate risk in the banking book (IRRBB) on 30 June 2019, pbb has comprehensively expanded its risk measurement, controlling and monitoring environment. In addition to interest rate risks at present value, pbb also incorporates period interest rate risks and measures, controls and monitors these on a regular basis. For further in, please refer to chapter 6.3 "Interest rate risk in the banking book".

Besides interest rate risks, the requirements set out in the EBA guidelines extend to credit spread risks in the banking book (CSRBB). In this connection, all securities held as assets and measured at amortised cost were added to the scope of instruments to be included in credit spread risk. This increases the impact of credit spread risks on market risk VaR.

Risk strategy

pbb Group adheres to the following fundamental principles in relation to market risks in terms of the present value perspective and of the periodic perspective:

- Transactions may be conducted exclusively in financial instruments which have successfully passed the new product process, and for which market values are either observable or determinable via a model.
- All positions entered into are subject to daily monitoring, in terms of sensitivity, value-at-risk (VaR) and performance, which is independent from trading units.
- Interest rate risk in the banking book is identified, measured, managed and monitored using both a present value approach as well as in terms of net income for the period. In this context, the present value approach is the primary approach for interest rate risk management, supplemented by the integration of interest rate risk of quarterly net interest income.

Organisation

Positions are monitored by way of a present value approach by the RMC department, which is separated from trading in the structural organisation, right through to the Management Board. The Finance department monitors the interest rate risk for the period.

Risk reporting

RMC prepares detailed market risk reports for senior management and operational management purposes, on a daily basis. The daily market risk report, which is primarily addressed to the Management Board, includes:

- market risk value-at-risk (VaR) and VaR limit utilisations across all relevant levels of the portfolio structure.
- sensitivities of market risk factors at various levels of detail and monitoring of sensitivity trigger limits.
- a presentation of economic performance measurement and breakdown by risk factors.

Since the new EBA guidelines on IRRBB (EBA/GL/2018/02) came into effect as at the reporting date of 30 June 2019, pbb has provided quarterly reports on changes in effects on income, and effects on accumulated other comprehensive income (recognised directly in equity), given pre-defined interest rate scenarios and assuming a dynamically changing balance sheet, to monitor interest rate risk for the period.

Risk quantification – Market risk measurement and market risk limitation

Market risk – Value-at-Risk

RMC determines VaR attributable to market risk, at an overall as well as partial portfolio level, on a daily basis, using a simulated model based on historical data. The VaR determination includes all positions exposed to market risks.

- Since March 2019, the simulation model has been based on a one-year market data history which is included in the simulation on an equally weighted basis. Prior to that date, pbb had used a ten-year market data history. The adoption of a shorter market data history in market risk VaR guarantees quicker adjustment to market data movements of the recent past.
- Individual types of market risk are aggregated to form a total VaR, which forms the basis of limit monitoring.
- For the purposes of daily operational risk management, Market risk VaR is determined using a holding period of ten days and a 99 % confidence interval.

As at 31 December 2019, market risk VaR amounted to € 65 million, taking diversification effects between the individual market risk types into consideration (31 December 2018: € 35 million). The increase in market risk VaR at 30 June can be attributed primarily to the aforementioned increase in credit spread risks, brought about by the introduction of the EBA guidelines. Hence, the market Risk VaR limit was raised from € 80 million to € 100 million, and to € 120 million in September 2019, to appropriately take the aforementioned credit spread risks in market risk VaR (after introduction of the EBA guidelines) into account.

The consolidated IRRBB VaR of all interest rate risk categories in the banking book (i.e. gap risk, basis risks and volatility risks of exposures that are sensitive to interest rates) amounted to € 45 million and CSRBB VaR amounted to € 64 million (both as at year-end 2019). As well as limiting market risk VaR, specific limits have been monitored since the introduction of the EBA guidelines as of 30 June 2019 for IRRBB VaR (limit as at the 2019 year-end: € 85 million) and CSRBB VaR (limit as at the 2019 year-end: € 100 million).

There were no breaches of market risk VaR limits at pbb Group level during the period under review.

The VaR assessment is complemented by additional tools, such as sensitivity analyses, stress tests and back-testing.

Sensitivity analyses

Overnight yield curves are used for the purposes of measurement relevant to sensitivity analyses. Sensitivity analyses quantify the impact of changes in individual market parameters upon the value of positions. For instance, the credit spread sensitivity provides an indication of the change in economic present value which results from a, isolated one basis point increase in the credit spreads which are relevant for measurement purposes.

Stress testing

Whilst VaR measures market risk in “normal” market conditions and does not provide a measure for potential maximum losses, internal economic stress scenarios are used to map market risk in difficult or even extreme economic framework conditions. pbb Group employs hypothetical and historical stress scenarios for key risk drivers on a monthly and quarterly basis, to determine the impact of strong to extreme changes in market data or assumptions regarding client behaviour on the economic present value.

In addition to internal economic stress scenarios, the external regulatory stress scenarios relating to the supervisory outlier test are calculated and analysed. The Management Board of pbb and the executive bodies are informed about the results of stress test scenarios on a regular basis. In connection with managing interest rate risk in the banking book (including credit spread risks), the changes in present value of selected internal and external stress scenarios have also been monitored through specific limits or triggers since June 2019.

Back testing

The quality of the risk measurement methods in use is checked on an ongoing basis by comparing one-day VaR figures to the actual changes occurring in the portfolio's present value on a daily basis. pbb Group has adopted the Basel Capital Accord's “traffic light” system for the qualitative analysis of its risk model. For this purpose, the number of outliers detected in backtesting within a period of 250 trading days are counted. As at end of 2019, based on a data history of 250 trading days, three outliers were observed. The risk model employed by pbb Group therefore has “green” status, as defined in the “traffic light” system of the Basel Capital Accord.

Basis risks

Basis risks refer to tenor spread and cross-currency spread risks, which are quantified within the framework of the VaR model. Tenor spread risks (€ 6 million) and cross-currency spread risks (€ 3 million) were shown at the reporting date.

Periodic interest rate risks

With the new EBA guidelines on IRRBB (EBA/GL/2018/02) having come into effect as at the reporting date of 30 June 2019, pbb introduced a dynamic model for measuring and monitoring periodic interest rate risks, thus simulating changes in future income statements and balance sheet developments, which will materialise if the balance sheet develops as planned, and under pre-defined interest rate scenarios. Measurement and monitoring of periodic interest rate risks was carried out at the end of each quarter, for a simulation horizon covering the following four quarters. Negative deviations from the base value were monitored, using a trigger of € 60 million for effects on income, and a trigger of € 100 million for effects on accumulated other comprehensive income (recognised directly in equity). Both triggers were not exceeded during the year under review.

Economic capital for market risk

The chapter 4.3 „Economic capital and risk bearing capacity“ (ICAAP) provides details concerning the calculation as well as the quantification of economic capital for market risk.

Mapping and recognition of economic hedges as on-balance-sheet hedges

The concept of hedge accounting refers to specific accounting rules applicable to hedge relationships in accordance with IFRS, entered into for the purpose of neutralising the change in value of the hedged underlying transaction against the change in value of the hedging instrument to a large extent. The criteria set out in IFRS must be satisfied for a hedge to be recognised accordingly. To a certain extent, these criteria – such as the requirements relating to hedge effectiveness – are inconsistent with the methods applied to bank management. As a result, there may be differences between economic hedges and hedge relationships recognised on the balance sheet.

Risk management, monitoring and mitigation

pbb Group uses a three-pillar approach for managing and monitoring market risk:

- management of positions maintained by the Treasury
- risk measurement and monitoring compliance with limits (independent from trading units) and
- escalation processes across all decision-making bodies, right through to the Management Board.

For all positions, market risk is monitored (independent from trading units) through a combination of VaR-limits and sensitivity triggers. Financial derivatives are mainly used for hedging purposes.

General interest rate risk

General interest rate risk (gap risk) amounted to € 40 million as at year-end 2019 and was thus above the figure seen at year-end 2018 (€ 36 million).

Volatility risk

Volatility risk amounted to € 2 million as at end of December 2019 (end of 2018: € 3 million).

Credit spread risk (CSRBB)

The present value Credit spread risk reflects potential changes in the present value of exposures as a result of changes in the corresponding credit spread. The majority of credit spread risk is attributable to assets eligible as cover for Pfandbriefe. The Bank has risk measurement systems in place for calculating credit spread risk for all relevant exposures. Until 30 June 2019, the VaR limit applied to all credit spread risks for asset instruments at fair value through profit and loss (FVPL) or at fair value through other comprehensive income (FVOCI). Since 30 June 2019, these – as outlined above – have also been joined by the credit spread risks of those securities held as assets that are measured at amortised cost. Accordingly, the credit spread risk increased and amounted to € 64 million as at end of December 2019 (year-end 2018: € 28 million).

Other market risks

The present value of foreign currency risk amounted to € 1 million as at end of 2019.

Opportunities

As detailed above, the sensitivities result in value at risk: a possible future (economic) loss in the event of an unfavourable market development. The very same sensitivities may also result in economic gains, in the event of a positive market development. For instance, high credit spread sensitivities represent a risk as described above. In the event of a narrowing of the relevant credit spreads, however, these credit spread sensitivities will yield economic profits, constituting an opportunity.

Open interest rate risk exposures (from an economic perspective) may indeed be neutral or even income-enhancing for periodic interest rate risk; this is the case for medium- to long-term fixed-rate loans, for example.

Outlook

The management of interest rate risk in the banking book was updated upon the introduction of the EBA guidelines (EBA/GL/2018/02) in June 2019. However, additional market risk adjustments are pending as a result of supervisory requirements, for example, on credit spread risks in the banking book. General uncertainty in the economic and political environment (including central banks' interest rate policies, Brexit, global trade conflicts, flashpoints in the Middle East, climate change impacts) may imply elevated market volatility. In the event that new or changed regulatory requirements – or changes in the political and economic environment – require action, appropriate measures will be taken in good time.

6.2 Own funds requirement for the market risk

In accordance with part 3, title IV of the CRR, market risks must be backed with own funds. The pbb Group still does not maintain a trading book for security and derivative portfolios with the aim of achieving short-term profits. Accordingly, the transactions of the pbb Group are exclusively subject to the own funds requirements for the foreign currency risk of the banking book, as detailed in the following table in accordance with article 445 CRR in conjunction with EU MR1 of the EBA/GL/2016/11. The pbb Group uses the standardised approach in accordance with article 325 et seq. CRR for calculating the own funds requirement for market risks.

The own funds requirement for market risks amounted to € 12 million as of the reporting date (31 December 2018: € 18 million).

Table 52: Market risk under the standardised approach (EU MR1)

All figures in € million

Market risk Standardised approach		Risk-weighted assets (RWA)	Minimum capital requirement
		a	b
Outright products			
1	Interest rate risk (general and specific)	-	-
2	Equity risk (general and specific)	-	-
3	Foreign exchange risk	148	12
4	Commodity risk	-	-
Options			
5	Simplified approach	-	-
6	Delta-plus method	-	-
7	Scenario approach	-	-
8	Securitisation (specific risk)	-	-
9	Total	148	12

1) pbb does not maintain a trading book for securities or derivatives portfolios held to realise short-term gains.

The pbb Group currently does not use its own internal models. Accordingly, disclosure in accordance with article 455 CRR in conjunction with EU MRB, EU MR2-A and EU MR2-B, EU MR3 and EU MR4 of the guidelines EBA/GL/2016/11 is not relevant for the pbb Group.

6.3 Interest rate risk in the banking book

Unlike the situation with credit risks, other market risks (foreign currency risks) or operational risks, there is no provision in the CRR for regulatory own funds backing for the interest rate risk in the banking book. pbb is subject to direct supervision by the European Central Bank (ECB), and is therefore also not required to comply with the additional own funds requirements for interest rate risks in the banking book in accordance with the general ordinance of the BaFin of 23 December 2016 (reference: BA 55-FR 2232-2016/0001). On the other hand, pbb fulfils the additional own funds requirements and capital requirements in accordance with the Supervisory Review and Evaluation Process (SREP) of the ECB.

Notwithstanding the fact that there is no provision for own funds backing, the methods and processes used by the pbb Group for the interest rate risk in the banking book are the same as those used for measuring market risk, as described in detail in the prior chapter 6.1 "Market risk management". As detailed there, with the introduction of the EBA guidelines EBA/GL/2018/02 "Guidelines on the management of interest rate risks in the banking book" as of 30 June 2019, pbb includes not only the present-value interest rate risks but also the periodic interest rate risks, and measures, manages and monitors them regularly.

The present-value interest rate risk in the banking book is determined by Risk Management & Control (RMC) on a daily basis, independently of trading. All rate-sensitive positions of the banking book are considered for this purpose. Compliance with the sensitivity triggers and the Value at Risk (VaR) limits is monitored and reported to the Management Board of pbb. In line with the regulatory requirements, the non-interest-bearing components of equity (liabilities side of the balance sheet) are not recognised (see EBA guidelines EBA/GL/2018/02 "Guidelines on the management of interest rate risks in the banking book" and the BaFin Circular 06/2019 (BA) "Interest rate risks in the banking book"). However, the assets of these resources are included. In addition, assumptions are also made with regard to the retention time of impairments which have been created as well as the related fixed interest. There are also special assumptions regarding credit repayments ahead of schedule (these result in a reduction of approximately 1.7 years in the average weighted remaining term of the relevant loans) as well as for the fixed interest of money market accounts from retail business (resulting in an average fixed interest term of 0.85 years for the affected money market accounts).

The periodic interest rate risk in the banking book reflects the risk relating to changes in the rate structure curves in relation to the bank's results of operations. The measurement process considers the changes in the net interest income (delta static net interest income) according to IFRS 9 resulting from interest rate changes. Under the assumption of a constant balance sheet total, expiring transactions or redemptions are re-concluded with equivalent amounts. This process also uses the model books implemented in pbb for the pattern of early repayments and the development in the volume of retail business. The figures are calculated as of the half-year point and as of the end of the year with a simulation horizon over the following four quarters. The variances from the base figure NII (net interest income) are shown as \square NII in the following table "Present-value interest rate risk and change in the net interest income in the banking book".

In addition to the static net interest income, a periodic interest rate risk with dynamic earnings has also been used since 30 June 2019 for internal management purposes for implementing the guidelines EBA/GL/2018/02. Contrary to the static net interest income, a constant balance sheet total is not assumed; instead, the new business data are taken from multiple-year planning and, in addition to the net interest income, the net commission income, the net realisation income, the net result of financial instruments to be measured through profit or loss as well as the changes in the cumulative other comprehensive income are calculated. The negative variances from the base figure are always monitored at the end of each quarter with a trigger for the change in the income statement and also in the cumulative other comprehensive income. In the reporting period 30 June 2019 to 31 December 2019, the triggers were complied with at all times in eight different interest stress scenarios of pbb (incl. the scenarios specified by the EBA).

Disclosure Report as of 31 December 2019

The following two tables show the interest rate risk in the banking book for the pbb Group in accordance with article 448 letter b CRR. The table "Present-value interest rate risks in the banking book according to currencies" shows the increase or decline in the present values of the banking book items in the event of an interest rate shock. The present value changes are broken down according to currencies. The table "Present-value interest rate risks and change in net interest income in the banking book" shows the change in net interest income and the present value of the banking book positions in the event of shifts in the rate structure curves within the six interest rate scenarios specified in accordance with EBA guidelines EBA/GL/2018/02.

Table 53: Present-value interest rate risks in the banking book according to currencies

All figures in € million, unless otherwise stated

Supervisory standard test by currencies	Present value change 31.12.2019		Present value change 31.12.2018 ¹⁾	
	Decline in interest - 200 Bp	Increase in interest + 200 Bp	Decline in interest - 200 Bp	Increase in interest + 200 Bp
	a	b	c	d
1 EUR	102	-229	-95	-223
2 USD	41	-11	6	-4
3 SEK	-	-	-	-
4 CHF	-	-	-	-2
5 GBP	38	-	-3	5
6 JPY	-	-	-	2
7 Other ²⁾	-	-	-	-
8 Total	181	-241	-92	-221
9 Total capital (TC)	3,733	3,733	3,639	3,639
10 Present value change in % of total capital	4.8%	6.5%	2.5%	6.1%

1) The disclosed present value changes as of 31.12.2018 are only comparable to a limited extent with the present value changes as of 31.12.2019, as the former are not consistent with the requirements of the EBA guidelines EBA/GL/2018/02 which became effective as of 30 June 2019.

2) Foreign currencies with present value changes which are not material in the stress case (where relevant) are combined under the heading "Other".

Table 54: Present-value interest rate risks and change in net interest income in the banking book

All figures in € million, unless otherwise stated

Early warning indicator	Δ EVE ¹⁾		Δ NII ²⁾	
	31.12.2019	31.12.2018	31.12.2019	31.12.2018
	a	b	c	d
1 Parallel up	-241	n/a	2	40
2 Parallel down	181	n/a	8	-22
3 Steepener	-8	n/a	_____	_____
4 Flattener	3	n/a	_____	_____
5 Short rate up	-67	n/a	_____	_____
6 Short rate down	86	n/a	_____	_____
7 Maximum	-241	n/a	_____	_____
8 Tier 1 capital (T1)	3,109	2,996	_____	_____
9 Present value change in % of tier 1 capital	7.8%	n/a	_____	_____

1) Δ EVE: Parameter for changes in the present value of all rate-sensitive instruments in the banking book resulting from sudden interest rate movements, under the assumption that all items in the banking book expire without being replaced. Because the underlying EBA guidelines EBA/GL/2018/02 only became effective on 30 June 2019, no comparison figures are available as of 31 December 2018.

2) Δ NII: The NII change is an income-based parameter and measures the change in net interest income resulting from a sudden interest rate movement within the following four quarters. The Δ NII figures which are shown relate to a parallel shift of +/- 200 basis points in the rate structure curves. Significant adjustments of method compared with 2018 are the modelling of exercising of options (such as termination options) as well as the additional use of the dynamic lower interest rate limit (in accordance with EBA/GL/2018/02).

Disclosure Report as of 31 December 2019

Overall, as of 31 December 2019, the pbb Group discloses (under the above assumptions in accordance with the guidelines EBA/GL/2018/02) the largest negative potential changes in present values from those interest shock scenarios which show parallel upward shifts in the rate structure curves. Accordingly, the maximum present value loss in the banking book amounts to € 241 million in the regulatory standard test and also in the early warning indicator test, and is caused by the interest rate shock scenarios "Increase of + 200 basis points in interest rates" or "Parallel shift upwards".

In the case of periodic interest rate risks, a sudden parallel increase in the rate structure curves would have a positive impact on the delta static NII. As of 31 December 2019, the change in delta static NII amounted to a total of € 2 million in the case of a parallel shift of + 200 basis points in the rate structure curves, and amounted to € 8 million in the case of a parallel shift of

- 200 basis points (with a dynamic lower interest rate limit in accordance with EBA/GL/2018/02). Due to various factors, including the use of the dynamic lower interest rate limit in 2019, the effect of a negative interest rate movement on the delta NII is mitigated compared with 2018. In addition, the overall lower level of interest rate compared with the previous year implies higher income from lower interest rate limits, which results in an additional positive effect on the delta NII.

7 Liquidity and funding risk

7.1 Management of liquidity and funding risk

Definition

Liquidity risk is defined as the risk of not being able to meet the amount and/or due dates of existing or future payment obligations, in full or on time.

Liquidity and evaluation process

In accordance with the Supervisory Review and Evaluation Process (SREP), pbb has conducted an Internal Liquidity Adequacy Assessment Process (ILAAP), which was examined and approved by the Management Board. The ILAAP should ascertain that all material liquidity and funding risks can be identified, measured and monitored, and that measures to prevent a liquidity shortage are taken in good time if required.

Risk strategy

The Management Board determines both the risk strategy as well as the risk appetite of pbb Group. The liquidity risk strategy is a key component of pbb Group's risk strategy. It is broken down into various modules (comprising various liquidity scenarios, given certain market conditions and stress parameters). This ensures that the Group's short- and medium-term funding is monitored and managed by means of a limit system. The limits are defined as part of the annual business planning process, approved by the Management Board.

Organisation

Risk Management & Control (RMC) identifies, measures, reports and monitors liquidity risk. The Treasury department, which is independent from RMC, is responsible for managing liquidity risk. The processes and methods employed are reviewed on a regular basis by the Risk Committee and the Asset Liability Committee. Liquidity Risk cannot be calculated and reported at a business segment level.

Risk reporting

Liquidity management reports are prepared daily and submitted to the entire Management Board, as well as to the Joint Supervisory Teams (JSTs) of ECB and national competent authorities. The reports contain up-to-date information on the day's liquidity situation as well as forecasts made using contractual cash flows and in recognition of future events that could potentially influence liquidity developments.

Risk quantification – Liquidity risk measurement and limitation

To manage liquidity risks, pbb has established a system for measuring and limiting short-term and medium-term variances within cash flows. This incorporates both contractual as well as optional cash flows. The data is subject to regular back-testing.

The liquidity position resulting from the liquidity reserve as well as contractual and optional cash flows is measured in different scenarios, with three liquidity positions being projected on a daily basis. The projections assume:

- unchanged market and funding conditions (base scenario),
- a risk scenario (modified [historical] stress scenario) and
- liquidity stress ([historical] stress scenario).

For instance, the risk and the (historical) stress scenario simulate possible client behaviour in "stress situations". Historical time series are used to calculate 95 % and 99 % quantiles.

Disclosure Report as of 31 December 2019

Liquidity risk triggers (early warning indicators) have been defined for a 24-month horizon in the base scenario. Limits in the risk and the (historical) stress scenario are applicable for a six- respectively three-month horizon.

The limit system consists of:

- limits relating to the liquidity stress profile (risk scenario and (historical) stress scenario); and
- triggers for the base scenario as well as the six-month bucket of [historical] stress-szenario.

In addition to reporting, pbb Group uses stress tests, conducted at regular intervals, for investigating the impact of additional stress events on the liquidity position.

Scenario analyses are performed to simulate the potential impact of crises attributable to macro- economic, monetary policy or political crises on the liquidity situation.

The scenarios are reported to the Management Board, as well as to external bodies such as the Joint Supervisory Teams (JSTs) of ECB and national competent authorities.

Risk monitoring and risk management

Monitoring of liquidity risks is ascertained through daily reporting of the liquidity situation and a defined escalation process. A liquidity emergency plan has also been adopted in this context; this plan forms the functional and organisational framework for the handling of any liquidity shortages. The liquidity emergency plan is part of the pbb Recovery Plan and updated at least annually.

Liquidity risk management is based on various interconnected components (daily and monthly liquidity reports), which are based on a "liquidity risk tolerance" defined by the Management Board. This ensures that pbb Group has adequate liquidity reserves at its disposal.

Risk hedging and risk mitigation

A risk tolerance system is in place, to limit liquidity risk. Risk tolerance is integrated in the liquidity management process by means of triggers (limit system), in order to safeguard a "survival period" for pbb Group in stressed conditions.

The limits applicable for risk tolerance are determined in line with stress scenarios, and adjusted at regular intervals.

Opportunities

pbb Group's cumulative liquidity position of € 6.4 billion in the base scenario over a 12-month horizon, which is detailed in chapter 7.2 "Liquidity risk development", section „Development of pbb Group's risk position“, as at 31 December 2019 provides the Group with scope for a flexible response, particularly with regard to possible new business.

If the external factors specified in chapter 7.2 "Liquidity risk development", section „Forecast liquidity requirement“, were to develop favourably for pbb Group, this would result in a lower future liquidity requirement.

7.2 Liquidity risk development

Development of pbb Group's risk position

The cumulative liquidity position (liquid assets plus projected net cash flows) determined as part of the liquidity risk measurement process as at 31 December 2019 amounted to € 6.4 billion for a 12-month horizon in the base scenario – a € 1.4 billion increase compared to the previous year (based on the same projection horizon). As at 31 December 2019, the cumulative liquidity position for a six-month horizon amounted to € 2.9 billion in the risk scenario (31 December 2018: € 2.6 billion). The cumulative liquidity position in the stress scenario for a six-month horizon amounted to € 1.0 billion as of 31 December 2019 (31 December 2018: € 0.9 billion).

Regulatory liquidity coverage requirements (Liquidity Coverage Ratio, LCR)

The Liquidity Coverage Ratio (LCR) is calculated using the ratio of the liquidity buffer (liquid assets) to net liquidity outflows during a stress period of 30 days. A minimum LCR of 100 % is mandatory in regulatory liquidity reporting. The levels determined for pbb Group during 2019 were at any time clearly in excess of 100 %. The Liquidity Coverage Ratio as at 31 December 2019 was 182 %. For further detailed information, please refer to chapter 7.3 "Liquidity cover ratio".

Funding markets

With regard to the developments on the refinancing markets as well as the change in the refinancing volume of the pbb Group in the reporting period, please refer to the information in the economic report of the annual report 2019 of the pbb Group in the chapter "Financial position".

Forecast liquidity requirement

In addition to the forecast liquidity requirement for new business activities, the extent of future liquidity requirements also depends on numerous external factors:

- further developments in the context of the European financial crisis and negotiations on Brexit and possible effects on the real economy
- future developments of haircuts applied to securities for repo funding on the market, and with central banks
- possible additional collateral requirements as a result of changing market parameters (such as interest rates and foreign exchange rates)
- developments in requirements for hedges
- changed requirements from rating agencies regarding the necessary over-collateralisation in the cover pools
- refinancing requirements of real estate investors.

Funding risk

The chapter 4.3 „Economic capital and risk bearing capacity“ (ICAAP) provides details concerning funding risk as part of business and strategic risk.

Market liquidity risk

For financial instruments, quantitative details for a better assessment of market liquidity risk can be obtained from the presentation of the three levels of the fair value hierarchy in the notes of the Annual Report 2019 of the pbb Group. Generally, there is no intention to sell holdings measured at amortised cost for liquidity management purposes, as liquidity for these holdings can mainly be generated by way of including them in the cover pool, using the funding opportunities provided by the central bank, or using them in repo transactions. Market liquidity risk is included in the internal risk management process as part of market risk.

7.3 Liquidity coverage ratio

The liquidity coverage ratio (LCR) is defined as the liquidity buffer of an institution (i.e. holdings of high-quality liquid assets) divided by its net liquidity outflows during a stress phase of 30 calendar days, and is expressed as a percentage. The ratio is calculated on the basis of the requirements of the Delegated Regulation (EU) 2015/61 of the Commission of 10 October 2014 for complementing the (EU) Directive No. 575/2013 of the European Parliament and Council regarding the liquidity coverage requirement of credit institutions.

In accordance with article 412 CRR, the aim of the LCR is to oblige institutions to maintain a liquidity buffer in the form of highly liquid assets in order to be able to compensate for net outflows of cash over a period of 30 days in a stress scenario. The defined stress scenario comprises market-wide as well as institution-specific effects. In stress periods, institutions are permitted to use their liquid assets to cover their net liquidity outflows, even if such use of liquid assets would mean that the liquidity coverage ratio in such phases would fall below the minimum threshold of 100 % which has been applicable since 2018.

According to the Delegated Regulation (EU) 2015/61, a minimum value of 100 % has been applicable for the liquidity coverage ratio since 1 January 2018. As was the case in the previous year, the figures for 2019 determined for the pbb Group were considerably higher than 100 %. The liquidity coverage ratio was 182 % as of 31 December 2019 (31 December 2018: 212 %).

In accordance with article 435 (1) CRR in conjunction with the guidelines EBA/GL/2017/01 of the European Banking Authority (EBA), the following table shows the information concerning the LCR for the pbb Group. In accordance with point 20 of the EBA/GL/2017/01, the information comprises the figures and the relevant numbers for each of the four calendar quarters before 31 December 2019. These figures and numbers have to be calculated as simple average figures of the month-end details collated over the twelve months before the end of each quarter.

Disclosure Report as of 31 December 2019

Table 55: Liquidity coverage ratio (EU LIQ1)

All figures in € million, unless otherwise stated

Liquidity Coverage Ratio (LCR) pbb Group	Total unweighted value (12-month-average) ¹⁾				Total weighted value (12-month-average) ¹⁾				
	Quarter ending on:	31.12.2019	30.09.2019	30.06.2019	31.03.2019	31.12.2019	30.09.2019	30.06.2019	31.03.2019
	Number of data points used in the calculation:	12	12	12	12	12	12	12	12
	a	b	c	d	e	f	g	h	
High-quality liquid assets									
1	Total high-quality liquid assets (HQLA)					5,453	5,801	5,926	5,939
Cash-outflows									
2	Retail deposits and deposits from small business customers	767	771	771	766	155	155	154	153
3	Stable deposits	-	-	-	-	-	-	-	-
4	Less stable deposits	767	771	771	766	155	155	154	153
5	Unsecured wholesale funding	706	662	582	581	535	530	485	490
6	Operational deposits (all counterparties) and deposits in networks of cooperative banks	-	-	-	-	-	-	-	-
7	Non-operational deposits (all counterparties)	466	442	408	380	295	310	311	289
8	Unsecured debt	240	220	174	201	240	220	174	201
9	Secured wholesale funding					-	-	-	-
10	Additional requirements	470	475	477	481	470	475	477	481
11	Outflows related to derivative exposures and other collateral requirements	470	475	477	481	470	475	477	481
12	Outflows related to loss of funding on debt products	-	-	-	-	-	-	-	-
13	Credit and liquidity facilities	-	-	-	-	-	-	-	-
14	Other contractual funding obligations	56	76	88	81	40	61	73	65
15	Other contingent funding obligations	4,736	4,678	4,437	4,264	1,550	1,585	1,482	1,420
16	Total cash outflows					2,750	2,806	2,671	2,609
Cash-inflows									
17	Secured lending (e.g. reverse repos)	-	-	-	-	-	-	-	-
18	Inflows from fully performing exposures	188	211	201	199	161	182	177	167
19	Other cash inflows	187	185	136	123	187	185	136	123
EU-19a	(Difference between total weighted inflows and total weighted outflows arising from transactions in third countries where there are transfer restrictions or which are denominated in non-convertible currencies)					-	-	-	-
EU-19b	(Excess inflows from a related specialised credit institution)					-	-	-	-
20	Total cash inflows	375	396	337	322	348	367	313	290
EU-20a	Fully exempt inflows	-	-	-	-	-	-	-	-
EU-20b	Inflows subject to 90% cap	-	-	-	-	-	-	-	-
EU-20c	Inflows subject to 75% cap	375	396	337	322	348	367	313	290
21	Liquidity buffer					5,453	5,801	5,926	5,939
22	Total net cash outflows					2,402	2,439	2,358	2,319
23	Liquidity Coverage Ratio (in %)					227%	238%	251%	256%

1) The values and figures shall be calculated in accordance with EBA/GL/2017/01 as simple averages of the end-of-month surveys over the 12 months preceding the end of each quarter.

The pbb Group uses a wide range of refinancing sources, including deposits of private and institutional customers, issues on the capital markets as well as the raising of secured and unsecured funds via wholesale refinancing arrangements, whereby the main emphasis is on issues of Pfandbriefe.

As of 31 December 2019, the liquidity reserves of € 3,517 million (31 December 2018: € 4,910 million) consist of highly liquid level 1 assets; the average figure for 2019 was € 5,453 million (2018: € 5,939 million). Level 1 assets comprise deductible deposits with the Deutsche Bundesbank, bonds issued by central governments, regional or local authorities, public bodies, multi-lateral development banks or international organisations as well as credit institutions with government backing.

Disclosure Report as of 31 December 2019

In 2019, cash flows of derivative positions on average accounted for only a minor percentage of the overall net cash flows. The pbb Group uses a historical look-back approach (HLBA) as the method for calculating the potential backing requirements for derivatives, i.e. backing requirements observed in the past are analysed and used for deriving a conservative assumption for potential future backing requirements. On average of last year, this assumption was € 470 million. Possible rating changes are not expected to have any significant impact on the provision of collateral.

The sensitivity of the currency cash flows does not have any major impact on the liquidity position of the pbb Group. In line with the definition of the Basel Committee on Banking Supervision (BCBS), the currency positions of the pbb Group are not considered to be significant.

The table EU LIQ1 for the liquidity coverage ratio (LCR) contains all positions relevant for the LCR calculation. pbb is the only credit institution of the pbb Group. Liquidity management is carried out exclusively by pbb.

8 Operational risk

8.1 Management of operational risk

Definition

According to Regulation 575/2013/EU (CRR) pbb defines the operational risk as follows: “the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events, including legal risk”. Furthermore, pbb recognises the following risks within the operational risk category: behavioural risk, reputational risk, outsourcing risk, model risk as well as risks associated with information and communication technologies (ICT systems risk).

Risk strategy

The top priority of pbb Group’s operational risk management is to prevent operational risk events and to meet the defined risk appetite. Key cornerstones of this strategy are the early recognition, systematic recording and assessment of operational risk, taking measures for risk mitigation as well as an early management reporting. The operational risk management strategy is adopted by the Management Board on an annual basis as part of the overall risk strategy. The risk strategy describes the risk management framework as well as pbb Group’s measures regarding operational risk.

Organisation

pbb Group has implemented a consistent Group-wide framework based on the principle of three lines of defence to manage operational risk. In this context, the risk owners – meaning heads of divisions – are responsible for managing operational risk, and for implementing risk-mitigating measures within the various business units (first line of defence). Specifically, Legal is responsible for managing legal risks, Finance for managing outsourcing risk, whilst the IT and Corporate Office divisions are responsible for managing ICT systems risk.

The Operational Risk unit in the RMC department represents the second line of defence which is responsible for uniform procedures and measures to identify, assess, quantify, monitor and report on operational risk. Internal Audit constitutes the third line of defence.

Risk reporting, risk monitoring and risk management, risk mitigation

Risk management is applied to all business processes in an overall approach. In particular, operational risk is analysed and considered explicitly as part of major decision-making processes (such as new product processes and outsourcing agreements).

Essential components of operational risk management are as follows: recording and analysing internal and external loss data, operational risk self-assessments (ORSA) and scenario-based analyses.

A structured and central reporting system is used to inform the Management Board and the division heads, the Risk Committee and other supervisory bodies concerning risk events on a regular, timely and comprehensive basis. Reports are prepared both ad-hoc (where material risk events are escalated) as well as on a monthly basis (Group Risk Report), on a quarterly (Key Risk Indicator Report) or annual (Annual OpRisk Report) basis, and are part of risk reporting to the entire Management Board, and the division heads. Operational risk reporting encompasses material loss events and near-losses, analyses of causes, top risk issues, development of risk indicators and of capital requirements, as well as the results from ORSA and scenario analyses.

Management of the ICT systems risk is fully integrated into operational risk management, and thus into the Bank’s risk and compliance structure. Risk management for ICT systems risk generally applies at process level. The annual protection requirement analysis, the quarterly reporting of relevant information and metrics such as the key performance indicators (KPIs) as well as the IT security management, are all essential elements.

Management of legal risk, as performed by the Legal department, is aimed primarily at the prevention of losses which could be incurred if business activities of pbb Group were not documented with legal certainty. Structuring business activities in a manner that ensures legal certainty also serves to protect the integrity and reputation of pbb Group. In order to achieve this goal, the Legal department provides the entire pbb Group with a consultancy service.

The Legal department assists business divisions by monitoring developments in the relevant legislation and case law, and reviews the effects of such developments on new and existing business. The results are discussed with the responsible divisions and/or in the Legal and Regulatory Risk Committee. The Legal Policy describes the roles and responsibilities of the Legal department within pbb Group and serves as a guideline for employees in the Legal department.

Furthermore, the Legal department gives an assessment towards the respective business divisions whether provisions for pending legal cases have to be recognised. Provisions for legal risks are recognised in accordance with IAS 37 and section 249 HGB if (a) an obligation of pbb Group is probable, and (b) a reliable estimate can be made of the amount of the obligation. According to IAS 37.15, it is not clear whether there is a present obligation in rare cases. In such cases, pbb takes into account all available evidence, including the opinion of experts, to assess whether provisions have to be recognised at the reporting date.

Moreover, the OpRisk loss database captures losses from legal risks which need to be seen in conjunction with operational risk events. Overall, legal risks are taken into consideration in the existing operational risk management framework, and are an integral part of, inter alia, the Key Risk Indicator Report, the Operational Risk Self-Assessment (ORSA), the analysis and reporting of risk events, as well as for determining economic capital.

Risk quantification

Please refer to the chapter 4.3 „Economic capital and risk bearing capacity“ (ICAAP) for further details on the quantification of operational risk including legal risks as well as the calculation results of the economic capital for operational risk.

In line with the Standardised Approach according to article 317 et seq. of Regulation 575/2013/EU (CRR), the own funds requirement for operational risk, which is calculated at the end of each year, was € 70 million as at 31 December 2019 (31 December 2018: € 70 million) and is explained in greater detail in the following chapter 8.3 “Own funds requirement for operational risk“.

Opportunities

pbb Group aims to reduce potential operational risk to the extent possible, through continuous development of its operational risk framework and the ongoing optimisation of processes.

8.2 Operational risk profile

pbb Group suffered a financial loss of € 8 million from operational risks during 2019 (2018: € 6 million). pbb assesses its operational risk profile as stable.

8.3 Own funds requirement for operational risk

In order to ensure compliance with the own funds requirements in accordance with the CRR, the operational risk has to be backed with own funds. The pbb Group uses the standardised approach in accordance with article 317 et seq. CRR for calculating the own funds requirement for operational risk.

The relevant indicator is determined for each business unit for the last three financial years in accordance with article 316 CRR. The corresponding beta factors for each business unit correspond to the values defined in article 317 CRR. The business units of the pbb Group are limited to corporate client business and retail business, whereby corporate client business makes the relevant contribution to the relevant indicator. The own funds requirement for operational risk is defined as the sum of the respective three-year averages of the relevant indicator per business unit, weighted with the corresponding beta factor.

Unchanged to the previous year, the regulatory own funds requirement, which is calculated once a year at the end of the year, amounted to € 70 million as of 31 December 2019 (31 December 2018: € 70 million).

The pbb Group currently does not use advanced measuring approaches for calculating the own funds requirements in accordance with the articles 321 to 324 CRR. Accordingly disclosure in accordance with article 454 CRR is not relevant for the pbb Group.

9 Outlook

CRR amending regulations

On 7 June 2019, the so-called risk-reducing package (consisting of CRR II, CRD V, BRRD II and SRMR II), which also includes a revision of the CRR/CRD IV reform package, was published in the EU Official Gazette. The amending regulation (EU) 2019/876 (CRR II), in which the main disclosure requirements are also regulated (part 8 "Disclosure by the institutions"), came into force on 27 June 2019, and – with some exceptions for transitional deadlines specified in article 3 of the CRR II - is to be applicable starting 28 June 2021. In order to define EU-uniform disclosure formats (tables) and corresponding instructions for the necessary disclosures, the European Banking Authority (EBA), in accordance with article 434a CRR II, was engaged to draw up a corresponding Implementing Technical Standard (ITS) by 28 June 2020. The comment period for this EPA standard in consultation EBA/CP/2019/09, the so-called new pillar-3 framework, came to an end on 16 January 2020. The final version is expected to be published in the first half of 2020.

The new regulations regarding disclosure (including the new features from the CRR II) as well as the uniform disclosure formats of the EBA will be applicable for the first time in the disclosure report as of 30 June 2021.

Guidelines for disclosing non-performing and forborne exposures

The guidelines EBA/GL/2018/10 regarding the disclosure of non-performing and forborne exposures which have been applicable since 31 December 2019 have been implemented by pbb in this disclosure report. The main objectives of these guidelines is to provide the market players with further information regarding the credit quality of the institutions, regarding the main features of their non-performing and forborne exposures. The pbb Group regularly checks whether further obligations have to be taken into consideration as a result of the threshold of 5 % for the NPL ratio being exceeded.

Basel disclosure requirements, phase 3

On 11 December 2018, the Basel Committee on Banking Supervision (BCBS) published the final version of its standard ("Pillar 3 disclosure requirements – updated framework" (BCBS 455). The standard, which comprises the so-called phase 3 of the updating of the disclosure requirements by the BCBS, focuses mainly on the finalising of the Basel III framework (Basel IV). In view of the imminent challenges in connection with the spread von COVID-19 and the resultant necessary additional operational capacities in the corona crisis, the BCBS decided in 2020 to extend the time scale for implementing the Basel III finalising package by one year to 1 January 2023. Accordingly, the transitional deadlines for the output floor are to be applicable until 1 January 2028 (instead of previously 1 January 2027). The new implementation date for the market risk framework and the pillar-3 disclosure requirements is to be 1 January 2023 in each case.

At present, it is not yet possible to make a reliable estimate of transposition into European law, probably within framework of a CRR III and amendment of the pillar-3 framework (in accordance with CRR II) applicable starting June 2021.

List of figures

Figure 1:	Major disclosure information in separate documents	8
Figure 2:	Management Board and Supervisory Board executive or supervisory functions	15
Figure 3:	Risk management organisation	64
Figure 4:	Chief Risk Officer organisation	64
Figure 5:	Rating systems in the IRB approach (EU CRE)	114

List of tables

Table 1:	Regulatory and accounting scope of consolidation by entity (EU LI3)	21
Table 2:	Regulatory and accounting consolidation and risk type reconciliation (EU LI1)	23
Table 3:	Differences between regulatory exposure amounts and IFRS carrying amounts (EU LI2)	26
Table 4:	Structure of own funds.....	29
Table 5:	Additional tier 1 (AT1) capital – Capital instruments.....	35
Table 6:	Tier 2 (T2) capital – Capital instruments	36
Table 7:	Reconciliation of regulatory capital and balance sheet equity	38
Table 8:	Institution-specific countercyclical capital buffer.....	42
Table 9:	Countercyclical capital buffer – Geographical distribution of exposures	43
Table 10:	IRB-approach coverage.....	45
Table 11:	Risk-weighted assets and minimum capital requirements (EU OV1).....	46
Table 12:	Simple risk weight for specialised lending and equities (EU CR10).....	48
Table 13:	Capital ratios	50
Table 14:	Leverage ratio (EU LRSum)	53
Table 15:	Leverage ratio (EU LRCom).....	53
Table 16:	Leverage ratio (EU LRSpl)	54
Table 17:	Encumbered and unencumbered assets	58
Table 18:	Collateral received.....	59
Table 19:	Sources of encumbrances.....	60
Table 20:	Risk-bearing capacity based on a going-concern approach.....	72
Table 21:	Risk-bearing capacity economic perspective	73
Table 22:	Total and average amount of exposures (EU CRB-B)	82
Table 23:	Exposures by geographical area (EU CRB-C).....	83
Table 24:	Exposures by industry (EU CRB-D).....	85
Table 25:	Exposures by residual maturity (EU CRB-E).....	87
Table 26:	Credit quality of exposures by exposure classes and instruments (EU CR1-A).....	89
Table 27:	Credit quality of exposures by industry (EU CR1-B)	90
Table 28:	Credit quality of exposures by geographical areas (EU CR1-C).....	91
Table 29:	Credit quality of forborne exposures (EU NPL1).....	92
Table 30:	Credit quality of performing and non-performing exposures according to days past due (EU NPL3).....	93
Table 31:	Performing and non-performing exposures and associated provisions (EU NPL4)	95
Table 32:	Changes in the stock of credit risk adjustments (EU CR2-A)	102
Table 33:	Changes in the stock of defaulted and impaired exposures (EU CR2-B)	102
Table 34:	Credit risk mitigation techniques – Overview (EU CR3)	106

Disclosure Report as of 31 December 2019

Table 35:	CRSA exposures and credit risk mitigation effects (EU CR4)	110
Table 36a:	CRSA exposures before credit risk mitigation (EU CR5).....	111
Table 36b:	CRSA exposures after credit risk mitigation (EU CR5).....	112
Table 37a:	IRBA exposures and PD ranges (EU CR6) – Total.....	120
Table 37b:	IRBA exposures and PD ranges (EU CR6) – Germany	122
Table 37c:	IRBA exposures and PD ranges (EU CR6) – United Kingdom.....	124
Table 37d:	IRBA exposures and PD ranges (EU CR6) – France.....	126
Table 38:	RWA flow statements of credit risk exposures under the IRB approach (EU CR8).....	128
Table 39:	Backtesting of probability of default per exposure class (EU CR9).....	130
Table 40:	Backtesting of loss given default per exposure class (EU CR9).....	132
Table 41:	Expected and incurred losses in the lending business per exposure class (EU CR9)	133
Table 42:	Impact of netting and collateral held on exposure values (EU CCR5-A).....	136
Table 43:	Collateral for exposures to counterparty credit risk (EU CCR5-B).....	136
Table 44:	Counterparty credit risk by approach (EU CCR1)	138
Table 45:	Exposures to central counterparties (EU CCR8).....	138
Table 46:	Counterparty credit risk exposures under the standardised approach (EU CCR3).....	139
Table 47:	Counterparty credit risk exposures under the IRB approach (EU CCR4)	140
Table 48:	Own-funds requirement for the risk of an adjustment to the credit valuation (EU CCR2).....	141
Table 49:	Threshold amounts and minimum transfer amounts in the derivatives business	142
Table 50:	Senior unsecured ratings.....	142
Table 51:	Values of shareholdings based on their accounting classification	144
Table 52:	Market risk under the standardised approach (EU MR1)	151
Table 53:	Present-value interest rate risks in the banking book according to currencies.....	153
Table 54:	Present-value interest rate risks and change in net interest income in the banking book	153
Table 55:	Liquidity coverage ratio (EU LIQ1).....	159

Deutsche Pfandbriefbank AG

Parking 28
85748 Garching
Germany
T +49 (0)89 2880-0
info@pfandbriefbank.com
www.pfandbriefbank.com