Disclosure Report

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

As of 31 December 2020

Overview

Deutsche Pfandbriefbank Group (pbb Group)

All figures in € million, unless otherwise stated

Significant regulatory ratios	31.12.2020	31.12.2019	Change
Own funds (total capital, TC)	**3,798**	**3,733**	**2%**
Tier 1 capital (T1)	3,152	3,109	1%
Common equity tier 1 capital (CET1)	2,854	2,811	2%
Additional tier 1 capital (AT1)	298	298	0%
Tier 2 capital (T2)	646	624	4%
Risk weighted assets (RWA)	**17,744**	**17,721**	**0%**
Credit risk	16,765	16,703	0.4%
Credit risk (without counterparty credit risk)	16,308	16,184	1%
Counterparty credit risk	458	519	-12%
thereof: CVA risk	181	239	-24%
Market risk	98	148	-34%
Operational risk	881	870	1%
Capital ratios			
Common equity tier 1 ratio ((CET1 ratio)	16.1%	15.9%	+0.2 percentage points
Tier 1 ratio (T1 ratio)	17.8%	17.5%	+0.3 percentage points
Own funds ratio (Total capital ratio)	21.4%	21.1%	+0.3 percentage points
Capital buffers			
Total capital buffer requirement	2.519%	2.836%	-0.317 percentage points
Institution-specific countercyclical capital buffer (ICCB)	0.019%	0.336%	-0.317 percentage points
Capital conservation buffer (CCB)	2.500%	2.500%	0 percentage points
Available CET1 capital after complying with the minimum capital requirements	2,056	2,014	2%
Leverage ratio			
Tier 1 capital (T1)	3,152	3,109	1%
Total leverage ratio exposure	52,335	55,023	-5%
Leverage ratio	6.0%	5.6%	+0.4 percentage points
Asset encumbrance ratio			
Encumbered assets and further used received collateral (median values)	38,239	38,863	-2%
Total assets and received collateral (median values)	59,128	59,712	-1%
Asset encumbrance ratio (median values)	64.7%	65.1%	-0.4 percentage points
Non-performing exposure (NPE)			
Non-performing exposure (gross)	480	519	-8%
Total exposure (gross)	53,273	55,229	-4%
Non-performing exposure (NPE) ratio	0.9%	0.9%	0 percentage points
Non-performing loan (NPL) ratio	1.2%	1.2%	0 percentage points
Liquidity coverage ratio (LCR)			
Liquidity buffer (twelve-month average values)	5,292	5,453	-3%
Total net cash outflows (twelve-month average values)	1,660	2,402	-31%
Liquidity coverage ratio (twelve-month average values)	325%	229%	+96 percentage points

1) The values and figures of the liquidity coverage ratio 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. On 18 October 2021, the LCR amounts were corrected. The original publication of the Disclosure Report as of 31 December 2021 of 13 April 2021 was accordingly replaced.

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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 Amending Regulation (EU) 2019/876 (so-called CRR II) and the Amending Regulation (EU) 2020/873 (Amendments as a result of the COVID-19 pandemic) for pbb and its downstream affiliates (pbb Group) as of 31 December 2020. 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. On the other hand, the revised disclosure requirements according to part 8 of the CRR Amending 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 2020.

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 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 by officers with Group responsibility.

pbb issues mortgage Pfandbriefe secured by property charges and public Pfandbriefe secured by public sector receivables and, measured in terms of outstanding volume, is one of the largest issuers of Pfandbriefe and is thus also an important issuer of covered bonds in Europe. The Pfandbrief market is characterised by high liquidity and a broad investor base (source: Verband Deutscher Pfandbriefbanken).

Since 16 July 2015, the shares of pbb have been listed in the Prime Standard of the regulated market of the Frankfurt Stock Exchange (Frankfurter Wertpapierbörse). The shares are traded on the SDAX®.

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.

In addition, as was the case in the half-year 2020 report, the Disclosure Report of the pbb Group also contains information regarding:

- the handling of sustainability risks as well as
- measures applied in response to the COVID-19 crisis.

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 of application

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 CRR

In the financial year 2020 (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 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 2020.
- 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 2020, 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. € 58.9 billion as of 31 December 2020 (31 December 2019: € 56.8 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.

pbb is directly supervised by the ECB..

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 2020 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 2020 of the pbb Group, page 11 et seq.	www.pfandbriefbank.com (under Investors / Financial Reports and further publications)
Articles 432, 433 and 434 CRR: General disclosure principles	-	-
Article 435 (1) CRR: Risk management objectives and policies	Additional information concerning risk management objectives and policies and concerning the adequacy of the risk management procedures: Risk and opportunity report in the annual report 2020 of the pbb Group, page 42 et seq. (break down of credit portfolio according to business segments, etc.) Forecast report in the annual report 2020 of the pbb Group, page 89 et seq. (enterprise-wide or general company-specific risks and opportunities) Responsibility statement in the annual report 2020 of the pbb Group, page 191	www.pfandbriefbank.com (under Investors / Financial Reports and further publications)
Article 435 (2) CRR: Governance arrangements	Additional information regarding the governance arrangements described: Report of the Supervisory Board in the annual report 2020 of the pbb Group, page 3 et seq. 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 2020 of the pbb Group, page 103 et seq.	www.pfandbriefbank.com (under Investors / Financial Reports and further publications)

Disclosure issue according to part 8 of the CRR	Designation of the separate document	Web link
	Members of the Supervisory Board and the Management Board, the annual report 2020 of the pbb Group, notes, note 82, page 188 Compliance statement of the Management Board and the Supervisory Board (Corporate Governance Code) on the pbb website Professional careers of the members of the Management Board and the Supervisory Board	 www.pfandbriefbank.com (under The Company / Corporate Governance) www.pfandbriefbank.com (under the Company / Management Board or the Company / Supervisory Board)
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 2020 of the pbb Group, page 189	www.pfandbriefbank.com (under Investors / Financial Reports and further publications)
Article 437 CRR: Own funds	Additional information regarding balance sheet equity: Annual report 2020 of the pbb Group, page 116 (note Statement of changes of equity), as well as notes, page 137 (note 24 Equity) and page 164 (note 64 Equity)	www.pfandbriefbank.com (under Investors / Financial Reports and further publications)
Article 438 CRR: Capital requirements	Additional information concerning the adequacy of internal capital: Internal capital adequacy assessment process (ICAAP) in the annual report 2020 of the pbb Group, risk and opportunity report, page 64 (economic capital for the credit risk according to segments)	www.pfandbriefbank.com (under Investors / Financial Reports and further publications)
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	-	-

Disclosure issue according to part 8 of the CRR	Designation of the separate document	Web link
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 ECAIs	-	-
Article 445 CRR: Market risk	-	-
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 2020 of the pbb Group, notes, note 83 Shareholdings of pbb, page 189	www.pfandbriefbank.com (under Investors / Financial Reports and further publications)
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 2020 of the pbb Group, page 73 et seq.	www.pfandbriefbank.com (under Investors / Financial Reports and further publications)
	Remuneration report 2020 on the pbb website (publication in Q2 2021 presumably after conclusion of the remuneration negotiations for 2020)	www.pfandbriefbank.com (under The Company / Corporate Governance / Remuneration Reports)
Article 451 CRR: Leverage	-	-

Disclosure issue according to part 8 of the CRR	Designation of the separate document	Web link
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 meas-urement approaches to op-erational risk	Not relevant for the pbb Group.	-
Article 455 CRR: Use of internal market risk models	Not relevant for the pbb Group.	-
Article 449a CCR II: Disclosure of environmental, social and governance risks (a disclosure obligation in accordance with CRR II has only existed since 28 June 2022)	Additional information regarding the way in which pbb handles sustainability risks (environmental, social and governance risks, ESG risks): Annual report 2020 of the pbb Group. Non-financial report, page 200 et seq. Green Bonds Framework in accordance with the ICMA Green Bond Principles	www.pfandbriefbank.com (under Investors / Finan-cial Reports and further publica-tions) (under The Company / Cor-porate Responsibility/ Green Bonds)
Guidelines EBA/GL/2020/07 and “CRR Quick Fix”: Measures adopted in re-sponse to the COVID-19 cri-sis	-	-

2 Scope

2.1 Organisational and legal structure

The pbb Group consists mostly of the parent company pbb. At the same time, in accordance with article 4 (1) CRR, pbb is the parent company of the regulatory group as defined in section 10a of the German Banking Act (KWG) in conjunction with article 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, complementing this, 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.

In its core business of commercial real estate finance, pbb focuses on primary client business and syndications. Besides traditional financing solutions tailored to clients' needs, pbb 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 either acts as a sole lender or, particularly for large-volume transactions, cooperates with financing partners. In this regard, pbb has a wide network of banks and other partners, including insurance companies and private equity firms. In this so-called syndicate business, when acting as arranger, the pbb 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 acts as an underwriter, initially being the sole provider of financing and then selling parts of such loans to interested partners within the scope of syndications.

pbb Group intends to further advance its digital transformation: the chosen approach comprises three main thrusts, focusing on further development of client interfaces (through a new digital client portal), enhancing process efficiency in the core business (using end-to-end digital credit processes), as well as on new products and business models.

Regarding new products and business models based on digitalisation initiatives, pbb's subsidiary CAPVERIANT GmbH (CAPVERIANT) operates a digital platform that brings together public-sector borrowers and institutional investors. With respect to the loans intermediated by CAPVERIANT, pbb 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. The platform was launched in Germany in 2018 and then rolled out to the French market in 2019. In 2020, pbb and France's government-owned Caisse des Dépôts (CDC) via its Banque des Territoires segment signed an agreement for CDC to acquire a stake of around 28.5 % in pbb's subsidiary CAPVERIANT, with economic effect as of 1 January 2021. Now that all completion requirements have been satisfied, the transaction will be completed in mid-April 2021. The purpose of the cooperation is to progress the growth and market penetration of CAPVERIANT in Germany and France as well as in other European countries.

Strategic focus

pbb Group's business 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 changing risks at an early stage and mitigate them by taking appropriate measures – is another important factor.

The business strategy 2021 focuses on cautiously increasing operating profitability while maintaining a determinedly conservative risk profile and targeted management and measures to cope with the COVID-19 pandemic. pbb Group pursues various initiatives (including those concerning digitalisation) aimed at expanding its value chain, product range and client base. Moreover, pbb Group constantly reviews the options available to increase its process and cost efficiency, not least as part of its digitalisation initiatives.

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 comparisons and related analyses disclose the reasons for any deviations in the key performance indicators. Current market developments, such as the change on 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 that 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. There are currently no non-financial key performance indicators in accordance with DRS 20.105. The pbb Group concerns itself intensively with sustainability issues (ecology, social and good governance) and aims to define one or more non-financial performance indicators in 2021 or in 2022.

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 taccumulated (expiring) other comprehensive income (OCI) from cash flow hedge accounting, financial assets at fair value through OCI and additional equity instruments (AT1 capital). Profit 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-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 far predominantly portion of the real estate portfolio and the credit risk standardised approach (CRSTA) 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 26 February 2021 can be found on the pbb website under The Company / Corporate Governance. 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 which are published in the annual report 2020 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 four and pbb's Supervisory Board members hold 22 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 2020 [1)]		
Dr. Günther Bräunig	4	3
Dagmar Kollmann	5	5
Dr. Jutta Dönges	4	4 [2)]
Dr. Thomas Duhnkrack	2	2
Dr. Christian Gebauer-Rochholz	1	1
Georg Kordick	1	1
Joachim Plesser	2	2
Oliver Puhl	2	2
Heike Theißing	1	1
Management Board of pbb as of 31 December 2020		
Andreas Arndt	1	1
Thomas Köntgen	1	1
Andreas Schenk	1	1
Marcus Schulte	1	1
Total	**26**	**25**

1) The current election periods and periods in office of the shareholder representatives and employee representatives in the Supervisory Board come to an end at the end of the annual general meeting 2021 which is responsible for deciding on the formal approval of actions for the financial year 2020.
Mr. Plesser does not wish to be reappointed to the Supervisory Board, and Dr. Dönges laid down her mandate on the Supervisory Board on 24 March 2021; as their replacements, the Supervisory Board proposes that Hanns-Peter Storr and Susanne Klöß-Braekler should be elected at the annual general meeting. The regular elections to the Supervisory Board for the employee representatives are to be held shortly before the annual general meeting 2021.
Mrs. Kollmann also laid down her mandate at KfW Ipex Bank GmbH as of 25 March 2021, and has been elected to the Board of Directors of Paysafe Ltd.
An application has been submitted for approval of an additional mandate in accordance with section 25d (3) sentence 6 KWG.

2) In accordance with KWG, there are only two mandates, because the mandate at FMS Wertmanagement AöR is not counted in accordance with the regulations of section 25d (3) sentence 4 KWG.

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 2020 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 four mandates each held by Dr. Bräunig and Dr. Dönges 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 in 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; 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 affected 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 / corpo-ration 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 2020, the percentage of women in the Supervisory Board was unchanged at 33.3 % (compared with the previous-year reference date). 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 pursue the aim of giving specific recognition to the underrepresented gender, on the assumption of equivalent suitability and skills, when appointing persons to existing vacancies in the Management Board or when increasing the number of persons on the Management Board. In view of the prolongations of the appointments of Thomas Köntgen, Andreas Schenk and Marcus Schulte which have been carried out with a view to the necessary personnel stability and further sustainable development of pbb, any change to the existing situation in the near 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 2020.

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 2020 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 2020, in Q2 2021 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 2020, 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 2020 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 2020.

Changes in the financial year

In 2020, 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 2020, 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 2020, 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 2020, 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 2020.

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 2020 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.

Table 2: Regulatory and accounting consolidation and risk type reconciliation (EU LI1)

	Assets and liabilities of the consolidated balance sheet in € million	Carrying amounts (IFRS) as reported in published consolidated financial statements 31.12.2020	Carrying amounts (IFRS) under scope of regulatory consolidation 31.12.2020	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	5,376	5,376	5,376	-	-	-	-
3	Financial assets at fair value through profit or loss	1,368	1,368	631	737	-	192	-
3a	Positive fair values of stand-alone derivatives	737	737	-	737	-	105	-
3b	Debt securities	134	134	134	-	-	-	-
3c	Loans and advances to customers	494	494	494	-	-	87	-
3d	Shares in investment funds qualified as debt instruments	3	3	3	-	-	-	-
4	Financial assets at fair value through other comprehensive income	1,529	1,529	1,529	-	-	34	-
4a	Debt securities	1,384	1,384	1,384	-	-	34	-
4b	Loans and advances to other banks	-	-	-	-	-	-	-
4c	Loans and advances to customers	145	145	145	-	-	-	-
5	Financial assets at amortised cost after credit loss allowances	48,691	48,691	47,373	1,318	-	8,333	-
5a	Financial assets at amortised cost before credit loss allowances	48,935	48,935	47,617	1,318	-	8,488	-
5aa	Debt securities	7,481	7,481	7,481	-	-	834	-
5ab	Loans and advances to other banks	1,874	1,874	582	1,292	-	20	-
5ac	Loans and advances to customers	39,580	39,580	39,554	26	-	7,634	-
5b	Credit loss allowances on financial assets at amortised cost	-244	-244	-244	-	-	-155	-
6	Positive fair values of hedge accounting derivatives	1,651	1,651	-	1,651	-	10	-
7	Valuation adjustment from portfolio hedge accounting (assets)	27	27	27	-	-	-	-
8	Tangible assets	38	38	38	-	-	-	-
9	Intangible assets	40	40	18	-	-	-	22
10	Other assets	47	47	16	-	-	-	31
11	Current income tax assets	19	19	19	-	-	-	-
12	Deferred income tax assets	95	95	95	-	-	-	-
13	**Total assets**	**58,881**	**58,881**	**55,122**	**3,706**	**0**	**8,569**	**53**

	Assets and liabilities of the consolidated balance sheet in € million	Carrying amounts (IFRS) as reported in published consolidated financial statements 31.12.2020	Carrying amounts (IFRS) under scope of regulatory consolidation 31.12.2020	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
14	**Liabilities and equity**							
15	Financial liabilities at fair value through profit or loss	596	596	-	596	-	33	-
15a	Negative fair values of stand-alone derivatives	596	596	-	596	-	33	-
16	Financial liabilities measured at amortised cost	52,570	52,570	-	1,121	-	3,501	51,449
16a	Liabilities to other banks	9,844	9,844	-	864	-	61	8,980
16b	Liabilities to customers	22,583	22,583	-	257	-	84	22,326
16c	Bearer bonds	19,457	19,457	-	-	-	3,356	19,457
16d	Subordinated liabilities	686	686	-	-	-	-	686
17	Negative fair values of hedge accounting derivatives	1,920	1,920	-	1,920	-	167	-
18	Valuation adjustment from portfolio hedge accounting (liabilities)	137	137	-	-	-	-	137
19	Provisions	246	246	17	-	-	-	229
20	Other liabilities	62	62	-	-	-	-	62
21	Current income tax liabilities	34	34	-	-	-	-	34
22	**Liabilities**	**55,565**	**55,565**	**17**	**3,637**	**0**	**3,701**	**51,911**
23	Equity	3,316	3,316	-	-	-	-	3,316
24	**Total liabilities and equity**	**58,881**	**58,881**	**17**	**3,637**	**0**	**3,701**	**55,227**

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 ppb 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 table EU LI1. However, as of 31 December 2020, the pbb Group does not have any security lending/repo transactions.

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 agreements according to which (for instance in the event of an insolvency) all transactions concluded under one framework agreement are netted to form one single receivable so that, in the event of the default of the contractual partner, pbb has only one claim to, or is only obliged to pay, the net amount of the positive and negative market values of the recognised individual transactions (so-called “close-out netting”). The credit risk in relation to the respective contractual partner is thus reduced to one single net receivable. Accordingly, 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 at 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 2020 amounted to € 58,881 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 € 58,159 million as of 31 December 2020 (line 12).

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	e
1	**Assets Carrying amounts (IFRS) under the scope of regulatory consolidation (as per template EU LI1)**	**58,881**	**55,122**	**3,706**	**-**	**8,569**
2	Liabilities and equity Carrying amounts (IFRS) under the regulatory scope of consolidation (as per template EU LI1)	58,881	17	3,637	-	3,701
3	Total net amount (IFRS) under the regulatory scope of consolidation	-	55,105	69	-	4,868
4	**Off-balance-sheet amounts** [1]	**3,455**	**2,260**	**-**	**-**	**-**
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	-1,195	-	-	-	-
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)	-3,226	-	-3,226	-	-
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	-	-	-	-	-
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	233	233	-	-	-
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	-	-	-	-	-8,471
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)	11	64	-	-	-
12	**Exposure amounts considered for regulatory purposes** [2]	**58,159**	**57,679**	**480**	**0**	**98**

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)

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. However, as of 31 December 2020, the pbb Group had not agreed any security lending/repo transactions.

- 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. In the value adjustment comparison, the difference between the volume of created value adjustments (stage 1 to stage 3) and provisions in lending business in relation to the expected loss (EL) is calculated and positive/negative amounts resulting from the calculation of expected loss amounts (Wertberichtigungsfehlbetrag/überschuss) are determined.

- 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 parts of intangible assets (purchased software and software created in-house) 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 € 5.4 billion as of the reporting date (31 December 2019: € 5.7 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.

The following table regarding the structure of own funds in accordance with article 437 (1) letter d CRR shows the types and amounts of bank regulatory own fund elements as well as the own fund ratios as of 31 December 2020 (31 December 2019), as of the end of 2020 excluding the payment of the annual result of 2020 into the retained earnings in the amount of € 117 million (subject to approval by the annual general meeting).[1]

[1] The Management Board and Supervisory Board will submit a proposal to the annual general meeting on 12 Mai 2021 for the payment of a dividend of € 0.26 per eligible share. This dividend proposal is in line with the ECB recommendation of a prudent dividend distribution. The ECB considers the limit to be the lower of 15 % of the cumulative IFRS consolidated result (after taxes and AT 1 coupon) for the financial years 2019 and 2020 and a reduction of max. 20 basis points in the CET1 ratio. The latter criterion is applicable for pbb. With its dividend proposal of € 0.26 per eligible share, pbb is at the upper limit of the ECB recommendation, which is currently applicable until 30 September 2021. If the ECB subsequently permits a higher dividend distribution, pbb in the fourth quarter of 2021 will assess a further dividend payment for the financial year 2020 in the context of the prevailing market environment at that time.

Table 4: Structure of own funds

All figures in € million, unless otherwise stated

No.	Capital instruments pbb Group	31.12.2020 1)	31.12.2019 2)
	Common Equity Tier 1 (CET1) capital: Instruments and reserves		
1	Capital instruments and the related share premium accounts	2,017	2,017
1a	thereof: Subscribed capital	380	380
1b	thereof: Capital reserve	1,637	1,637
2	Retained earnings	949	966
3	Accumulated other comprehensive income (and other reserves)	-65	-45
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	-	-
6	**Common Equity Tier 1 (CET1) capital before regulatory adjustments**	**2,901**	**2,938**
	Common Equity Tier 1 (CET1) capital: regulatory adjustments		
7	Additional value adjustments (negative amount)	-5	-6
8	Intangible assets (net of related tax liability) (negative amount)	-22	-39
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
11	Fair value reserves related to gains or losses on cash flow hedges	16	12
12	Negative amounts resulting from the calculation of expected loss amounts (value adjustment deficit)	-	-59
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	-3	-4
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)	-	-
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	thereof: qualifying holdings outside the financial sector (negative amount)	-	-
20c	thereof: securitisation positions (negative amount)	-	-
20d	thereof: 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	thereof: direct and indirect holdings by the institution of the CET1 instruments of financial sector entities where the institution has a significant investment in those entities	-	-
24	Empty Set in the EU	-	-
25	thereof: deferred tax assets arising from temporary differences	-	-
25a	Losses for the current financial year (negative amount)	-	-
26	Security to be deducted for the Deposit Protection Fund (negative amount)	-31	-25
27	Qualifying AT1 deductions that exceed the AT1 capital of the institution (negative amount)	-	-

All figures in € million, unless otherwise stated

No.	Capital instruments pbb Group	31.12.2020 [1)]	31.12.2019 [2)]
27b	Minimum cover of non-performing exposures (NPL backstop) [3)]	-3	-
28	**Total regulatory adjustments to Common equity Tier 1 (CET1)**	**-47**	**-127**
29	**Common Equity Tier 1 (CET1) capital**	**2,854**	**2,811**
	Additional Tier 1 (AT1) capital: Instruments and reserves		
30	Capital instruments and the related share premium accounts	298	298
31	thereof: classified as equity under applicable accounting standards	298	298
32	thereof: 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	thereof: instruments issued by subsidiaries subject to phase out	-	-
36	**Additional Tier 1 (AT1) capital before regulatory adjustments**	**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**
44	**Additional Tier 1 (AT1) capital**	**298**	**298**
45	**Tier 1 capital (T1 = CET1 + AT1)**	**3,152**	**3,109**
	Tier 2 (T2) capital: Instruments and reserves		
46	Capital instruments and the related share premium accounts	605	624
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	thereof: instruments issued by subsidiaries subject to phase out	-	-
50	Credit risk adjustments	-	-
50a	Positive amounts resulting from the calculation of expected loss amounts (value adjustment excess) [3)]	41	-
51	**Tier 2 (T2) capital before regulatory adjustments**	**646**	**624**
	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)	-	-
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)	-	-

All figures in € million, unless otherwise stated

No.	Capital instruments pbb Group	31.12.2020 1)	31.12.2019 2)
56	Empty Set in the EU	-	-
57	**Total regulatory adjustments to Tier 2 (T2) capital**	**0**	**0**
58	**Tier 2 (T2) capital**	**646**	**624**
59	**Total capital (TC = T1 + T2)**	**3,798**	**3,733**
60	**Total risk weighted assets (RWA)**	**17,744**	**17,721**
	Capital ratios and buffers		
61	Common Tier 1 equity ratio (as a percentage of risk exposure amount)	16.1%	15.9%
62	Tier 1 capital ratio (as a percentage of risk exposure amount)	17.8%	17.5%
63	Total capital ratio (as a percentage of risk exposure amount)	21.4%	21.1%
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)	2.519%	2.836%
65	thereof: capital conservation buffer requirement	2.500%	2.500%
66	thereof: countercyclical buffer requirement	0.019%	0.336%
67	thereof: systemic risk buffer requirement	-	-
67a	thereof: 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)	11.6%	11.4%
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	-	-
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)	95	84
	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	30	32
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	85	83
	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) After adoption of the annual financial statements 2020, for regulatory purposes without payment into retained earnings (subject to approval by the annual general meeting).

2) After adoption of the annual financial statements 2019 and appropriation of profits. On 3 April 2020, the Management Board and Supervisory Board withdrew the original dividend proposal for the financial year 2019 in the amount of € 0.90 per eligible share or € 121 million in total. At the annual general meeting on 28 May 2020, a resolution was adopted to retain the cumulative profit achieved in 2019.

3) Lines 27b (NPL backstop) and 50a (positive amounts resulting from the calculation of expected loss amounts (value adjustment excess)) inserted as new items in the table as of 31 December 2020.

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 2020.

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 € 3,316 million according to IFRS (31 December 2019: € 3,236 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 2020 of the pbb Group, note 64 "Equity".

Common equity tier 1 capital

As of 31 December 2020, 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 2020 (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 2020.

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 € 949 million (excluding the payment of the annual result of 2020 into the retained earnings in the amount of € 117 million), and the cumulative other comprehensive income of € -65 million. The common equity tier 1 capital amounted to € 2,901 million.

Regulatory adjustments

The common equity tier 1 capital (CET1) before regulatory adjustments in the amount of € 2,901 million is adjusted for regulatory purposes by various items specified in the CRR; a total of € 47 million is deducted:

- Valuation adjustments based on the requirements of prudent valuation of assets recognised at fair value amounting to € 5 million are deducted in full from CET1.

  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 in conjunction with article 36 (1) letter b CRR, the intangible assets (such as purchased software and software produced in-house of € 40 million are deducted from CET1 in the amount of € 22 million.

  For this purpose, the pbb Group uses the frontloaded CRR II regulation regarding the exclusion from deduction of software assets measured for regulatory purposes in accordance with article 36 (1) letter b CRR in conjunction with the technical regulatory standard EBA/RTS/2020/07 "Final Report - Draft Regulatory Technical Standards on the prudential treatment of software assets under Article 36 of CRR". The EBA standard can be applied by the institutions since 31 December 2020. With the RTS, the European banking regulator is attempting to create a balance between the two conflicting interests:

  - In the course of the digitalisation process, it is necessary and desirable for banks to carry out investments in their IT without having to fear any negative impact on their regulatory own funds.
  - In the event of the liquidation or acquisition of a bank, the software used there has only a very limited useful life.

In addition to the balance sheet depreciation period which will not be changed, a shorter regulatory depreciation period of max. three years will be introduced. This must not exceed the balance sheet depreciation period. The beginning of the depreciation period (as is also the case in the balance sheet) is defined as the point at which the software starts to be used. Software which is not yet used by the institution (because it is still in the development phase) must still be completely deducted from common equity tier 1 capital (CET1). Once the software has started to be used, only the difference between the balance sheet depreciation and the higher regulatory depreciation has to be deducted from the CET1. Every software asset and every additional entry have to be considered separately.

The software which is not deducted from CET1 must be allocated to the risk assets, and must be backed with a risk weighting of 100 %. The pbb Group shows these software assets in the IRB approach in the risk position class “Other assets which are not loan obligations”.

- As of 31 December 2020, there were no deductions from CET1 (31 December 2019: € 6 million) 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 € 95 million which result from temporary differences.
- In accordance with article 33 CRR, the cash flow hedge reserve of € -16 million still included in cumulative other comprehensive income is completely eliminated (regulatory adjustment of CET1: € +16 million). As was the case in the previous year, no derivatives were designated in the cash flow hedge as of 31 December 2020. The cash flow hedge reserve remaining from designations is reversed to reflect the occurrence of the hedged cash flows of the underlyings.
- If an impairment deficit relating to the volume of created impairments (stage 1 to stage 3) and provisions in lending business occurs in relation to the expected loss, article 159 CRR requires that this deficit has to be deducted from CET1 for banks which use the internal ratings-based approach (IRBA). As of 31 December 2020, the process of establishing the risk-provisioning volume resulted in a positive amount of € 41 million resulting from the calculation of expected loss amounts (Wertberichtigungsüberschuss); this is the reason why no deduction occurred (31 December 2019: € -59 million, negative amount resulting from the calculation of expected loss amounts (Wertberichtigungsfehlbetrag)).
- Profits and losses of € 3 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 CET1. This deduction requirement is based on article 33 (1) letter c CRR.
- The collateral payments of € 31 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).
- For the minimum coverage of non-performing exposures (NPL backstop), a figure of € 3 million is deducted from CET1.

  The pbb Group does not have any defaults which lead to an NPL backstop in accordance with the minimum coverage of non-performing exposures in accordance with the (EU) Regulation 2019 /630. The new articles 47a et seq. CRR introduced by this regulation are applicable only for defaulted loans and loans which were extended or increased after 26 April 2019.

  There are also no defaults in the pbb Group which result in an NPL backstop in accordance with the addendum of the European Central Bank (ECB). The ECB addendum (“Addendum to the ECB guideline for banks regarding non-performing loans: Regulatory expectations regarding risk provisioning for non-performing exposures”) has extended the regulations for defaulted receivables which have defaulted since 1 April 2018 and which thus are not covered by article 47 letter a et seq. CRR.

  In addition to the above-mentioned regulations, the institutions receive SREP notices (supervisory review and evaluation process) of the ECB for its receivables which defaulted before 1 April 2018 (legacy holdings); these notices comprise the NPL backstop recommendations in slightly modified form. For the pbb Group, these legacy holdings result in an NPL backstop of approximately € 3 million, which the pbb Group deducts from CET1 in accordance with the recommendation of the SREP notice.

In total, the common equity tier 1 capital (CET1) of the pbb Group as of 31 December 2020 amounts to € 2,854 million (31 December 2019: € 2,811 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 (subject to certain conditions) no obligation for repayment and for ongoing servicing (fundamentally discretionary coupon). It is shown under the liabilities item “Additional equity instruments (AT1)”. In April 2020, a coupon payment of € 17 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 % p.a.	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 (31.12.2020) - 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. In addition to the above-mentioned contractual write-down right, the relevant resolution authority has the (statutory) possibility of converting the bonds into shares of pbb or to write down the bonds (so-called bail-in) in the event of a crisis of pbb subject to legally more closely defined conditions.

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.

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 (31.12.2020) - 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 (31.12.2020) - 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 % p.a.	Maturity
3	Deutsche Pfandbriefbank AG	2006	Borrowers' note loan	10	4.350	2021
4	Deutsche Pfandbriefbank AG	2006	Registered bond	10	4.570	2021
5	Deutsche Pfandbriefbank AG	2006	Bearer bond	7	4.560	2021
6	Deutsche Pfandbriefbank AG	2006	Borrowers' note loan	1	4.910	2021
7	Deutsche Pfandbriefbank AG	2002	Borrowers' note loan	4	6.550	2022
8	Deutsche Pfandbriefbank AG	2002	Borrowers' note loan	6	6.550	2022
9	Deutsche Pfandbriefbank AG	2002	Bearer bond	10	6.570	2022
10	Deutsche Pfandbriefbank AG	2003	Bearer bond	10	6.750	2023
11	Deutsche Pfandbriefbank AG	2008	Bearer bond	10	8.060	2023
12	Deutsche Pfandbriefbank AG	2003	Borrowers' note loan	5	6.330	2023
13	Deutsche Pfandbriefbank AG	2003	Borrowers' note loan	5	6.330	2023
14	Deutsche Pfandbriefbank AG	2005	Borrowers' note loan	10	4.650	2025
15	Deutsche Pfandbriefbank AG	2016	Borrowers' note loan	2	3.950	2026
16	Deutsche Pfandbriefbank AG	2006	Borrowers' note loan	2.5	4.530	2026
17	Deutsche Pfandbriefbank AG	2001	Bearer bond	6	6.550	2026
18	Deutsche Pfandbriefbank AG	2006	Registered bond	5	5.125	2026
19	Deutsche Pfandbriefbank AG	2016	Borrowers' note loan	5	3.880	2026
20	Deutsche Pfandbriefbank AG	2006	Borrowers' note loan	5	5.040	2026
21	Deutsche Pfandbriefbank AG	2016	Bearer bond	35	3.250	2026
22	Deutsche Pfandbriefbank AG	2017	Bearer bond	150	4.600	2027
23	Deutsche Pfandbriefbank AG	2017	Bearer bond	60	3.375	2027
24	Deutsche Pfandbriefbank AG	2017	Bearer bond	300	2.875	2027
25	Deutsche Pfandbriefbank AG	2016	Bearer bond	5	4.120	2031
26	Deutsche Pfandbriefbank AG	2017	Registered bond	7.5	4.550	2032
Total				**671**		

1) The sequential numbering corresponds to the consecutive numbering of the capital instruments in the appendix "Disclosure Report (31.12.2020) - 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. The relevant resolution authority has the (statutory) possibility of converting the tier 2 capital into shares of pbb or to write down the tier 2 capital (so-called bail-in) in the event of a crisis of pbb subject to legally more closely defined conditions.

After due consideration is given to discounts and amortisations in accordance with article 64 CRR as well as after addition of the positive amounts resulting from the calculation of expected loss amounts (Wertberichtigungsüberschuss) of € 41 million, the tier 2 capital (T2) as of 31 December 2020 amounted to a total of € 646 million (31 December 2019: € 624 million). In accordance with article 62 letter d CRR, any positive amounts resulting from the calculation of expected loss amounts (Wertberichtigungsüberschuss) have to be added to the tier 2 capital (T2), in the amount of max. 0.6 % of the RWA (risk-weighted assets).

Own funds

The own funds of the pbb Group totalling € 3,798 million (31 December 2019: € 3,733 million) consist of common equity tier 1 (CET1) capital of € 2,854 million, additional tier 1 capital (AT1) of € 298 million and tier 2 (T2) capital of € 646 million.

A major factor behind the increase of € 65 million in regulatory own funds compared with the end of 2019 is the positive amount resulting from the calculation of expected loss amounts (Wertberichtigungsüberschuss) due to the increase in risk-provisioning holdings. The risk-provisioning holdings (adjustments of stages 1 to 3 and provisions in lending business) have approximately doubled since the end of 2020. Opposite factors for the change in the regulatory own funds are the coupon payment in relation to AT1 capital in April 2020, repayments of subordinate liabilities which have fallen due and declines in the netting of subordinate bonds (T2 capital) due to daily amortisations in accordance with article 64 CRR.

Exemptions in connection with the COVID-19 crisis

In view of the COVID-19 crisis, the bank regulator has provided the Institutions with various possibilities of exemptions with regard to the calculation of own funds and the own funds requirement with the “CRR Quick Fix” regulations. These temporary exemptions relate to adjustments to the CRR as transitional arrangements regarding the CRR II applicable starting 28 June 2021.

As of 31 December 2020, the pbb Group applies the COVID-19-related exemption in accordance with article 500b CRR (Temporary exclusion of certain exposures to central banks of the euro system from their total exposures calculation regarding the leverage ratio, period of temporary application: 1 January 2020 to 27 June 2021) in conjunction with the Amending Regulation (EU) 2020/873 (“CRR Quick Fix”) and the guidelines EBA/GL/2020/11. With the Resolution (EU) 2020/1306 of 16 September 2020, the ECB stated that there are exceptional circumstances which justify a temporary exclusion of these exposures. The BaFin has followed the ECB and confirmed the exceptional circumstances on 21 September 2020. The impact on the leverage ratio of the pbb Group is detailed in chapter 3.5 “Leverage ratio”.

In addition, the pbb Group also applies the transitional CRR II regulation regarding the exclusion from the deduction of software assets measured for regulatory purposes in accordance with article 36 (1) letter b CRR. Accordingly, there is an exemption from the deduction of intangible assets from common equity tier 1 capital (CET1) for prudently measured software assets which are determined over a depreciation period of three years prescribed by the regulator (but not longer than the balance sheet depreciation period). The pbb Group uses this regulation for prudently measured software assets in the amount of € 18 million.

However, the pbb Group does not apply the exemptions in accordance with article 468 CRR (temporary application of profits and losses which are measured at present value and not realised in other comprehensive income, period of temporary application: 1 January 2020 to 31 December 2022) as well as the optional transitional arrangements in accordance with article 473a CRR (Transitional regulations for reducing the impact of the introduction of IFRS 9 on own funds, period of temporary application: 1 January 2020 to 31 December 2024) in conjunction with the Amending Regulation (EU) 2020/873 (“CRR Quick Fix”). The pbb Group has in previous years also not used the original optional transitional regulations in accordance with article 473a CRR in conjunction with the guidelines EBA/GL/2018/01 for mitigating the impact of the introduction of IFRS 9 from 1 January 2018. The own funds, the capital ratios and the leverage ratio detailed in this Disclosure Report accordingly reflect the full impact of the introduction of IFRS 9 and the expected credit loss – adjustment model as well as the full impact of unrealised profits/losses resulting from financial instruments measured at fair value (own fund item “Cumulative other comprehensive income”).

Disclosure of the table IFRS 9/article 468-FL “Comparison of institutions’ own funds and capital and leverage ratios with and without the application of transitional arrangement for IFRS 9 or equivalent expected credit losses as well as with and without the application of the temporary application in accordance with article 468 CRR” in accordance with the guidelines EBA/GL/2020/12 is accordingly not relevant for the pbb Group.

pbb also does not use other CRR exemptions, such as those in accordance with article 500a CRR (Temporary application of government bonds issued in the currency of another member state, period of temporary application: 1 January 2020 to 31 December 2024), article 500c CRR (Internal models market risk: Exclusion of violations due to the calculation of the add-back factor between 1 January 2020 and 31 December 2021) or article 500d CRR (Temporary calculation of the exposure value of regular-way purchases and sales awaiting settlement, period of temporary application: 1 January 2020 to 27 June 2021) in conjunction with the Amending Regulation (EU) 2020/873 ("CRR Quick Fix").

This is also applicable for the frontloading from CRR II in accordance with "CRR Quick Fix" applicable since 27 June 2020, such as the regulations regarding more favourable treatment of SMEs (small and medium-sized enterprises) (SME support factor) and infrastructure exposures (infrastructure support factor) in accordance with the articles 501 and 501a CRR, which pbb also does not apply.

The regulatory SREP requirements applicable for minimum capital backing which have been adjusted as a result of the COVID-19 crisis and which have to be maintained by pbb are described in chapter 3.4 "Capital ratios".

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. The pbb Group's balance sheet equity, including additional tier 1 capital (AT1), as of 31 December 2020 amounted to € 3,316 million (as of 31 December 2019: € 3,236).

Further information regarding the balance sheet equity according to IRFS and related developments is set out in the annual report 2020 of the pbb Group, note "Changes in equity" and note 64 "Equity", published on the website of pbb.

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 according to commercial IFRS-consolidation scope 31.12.2020	(B) Total equity according to regulatory CRR-consolidation scope 31.12.2020	(C) Regulatory own funds according to CRR [1] 31.12.2020
	Common Equity Tier 1 (CET1): 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: Additional paid-in capital	1,637	1,637	1,637
2	Retained earnings	1,066	1,066	949
3	Accumulated other comprehensive income (and other reserves)	-65	-65	-65
4	Distribution	-	-	-
5	**Common Equity Tier 1 (CET1) before regulatory adjustments**	**3,018**	**3,018**	**2,901**
	Common Equity Tier 1 (CET1): regulatory adjustments			
6	Additional value adjustments (negative amount)	-	-	-5
7	Intangible assets (net of related tax liability) (negative amount)	-	-	-22
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)	-	-	-
9	Fair value reserves related to gains or losses on cash flow hedges	-	-	16
10	Negative amounts resulting from the calculation of expected loss amounts	-	-	-
11	Gains or losses on liabilities valued at fair value resulting from changes in own credit standing	-	-	-3
12	Security to be deducted for the Deposit Protection Fund (negative amount)	-	-	-31
13	Qualifying AT1 deductions that exceed the AT1 capital of the institution (negative amount)	-	-	-
14	Minimum cover of non-performing exposures (NPL backstop)	-	-	-3
15	**Total regulatory adjustments to Common equity Tier 1 (CET1)**	**-**	**-**	**-47**
16	**Common Equity Tier 1 (CET1) capital**	**3,018**	**3,018**	**2,854**
	Additional Tier 1 (AT1) capital: Instruments and reserves			
17	Capital instruments and the related share premium accounts	298	298	298
17a	Of which: classified as equity under applicable accounting standards	298	298	298
17b	Of which: classified as liabilities under applicable accounting standards	-	-	-
18	**Additional Tier 1 (AT1) capital before regulatory adjustments**	**298**	**298**	**298**
	Additional Tier 1 (AT1) capital: regulatory adjustments			
19	Direct and indirect holdings by an institution of own AT1 Instruments (negative amount)	-	-	-
20	Qualifying T2 deductions that exceed the T2 capital of the institution (negative amount)	-	-	-
21	**Total regulatory adjustments to Additional Tier 1 (AT1) capital**	**-**	**-**	**0**
22	**Additional Tier 1 (AT1) capital [2]**	**298**	**298**	**298**
23	**Tier 1 capital (T1 = CET1 + AT1)**	**3,316**	**3,316**	**3,152**

All figures in € million, unless otherwise stated

No.	Capital instruments pbb Group	(A) Total equity according to commercial IFRS-consolidation scope 31.12.2020	(B) Total equity according to regulatory CRR-consolidation scope 31.12.2020	(C) Regulatory own funds according to CRR [1) 31.12.2020
	Tier 2 (T2) capital: Instruments and reserves			
24	Capital instruments and the related share premium accounts according to IFRS balance sheet	666	666	666
25	Deferred interests within the IFRS balance sheet	17	17	-
26	Hedge adjustments within the IFRS balance sheet	3	3	-
27	Positive amounts resulting from the calculation of expected loss amounts (value adjustment excess)	-	-	41
28	Amortisation of Tier 2 capital instrument according to Article 64 CRR	-	-	-61
29	**Tier 2 (T2) capital before regulatory adjustments**	**686**	**686**	**646**
	Tier 2 (T2) capital: regulatory adjustments			
30	Direct and indirect holdings of the T2 instruments and subordinated loans (negative amount)	-	-	-
31	**Total regulatory adjustments to Tier 2 (T2) capital**	**-**	**-**	**0**
32	**Tier 2 (T2) capital** [2)	**686**	**686**	**646**
33	**Total capital (TC = T1 + T2)**	**4,002**	**4,002**	**3,798**

1) For regulatory purposes without payment of the annual result 2020 in the amount of € 117 million into the retained earnings (subject to approval of the annual general meeting).
2) The additional tier 1 capital (AT1) is classified as equity in accordance with IFRS for balance sheet purposes, as 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.

Own funds and eligible liabilities (MREL)

Within the framework of the recovery and resolution regime (BRRD guideline; revised within the framework of the EU banking package in 2019 and enacted in national law in Germany with the Recovery and Resolution Act (Sanierungs- und Abwicklungsgesetz – SAG)), institutions are obliged to maintain liabilities in the amount of the so-called MREL ratio which are convertible into equity in addition to the regulatory own funds. 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 this 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 2020 (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 2020, 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 (ICCB). However, in view of the imminent challenges in connection with the COVID-19 crisis, 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. On 26 February 2021, the BaFin announced that the countercyclical capital buffer for Germany would remain at 0 % for the time being. The BaFin is currently assuming that it will not increase this buffer until the end of 2021. This is due to the credit requirement of the real economy and possible defaults during the further course of the COVID-19 pandemic. The aim of the decision is to provide the German banking sector with planning security and to ensure that it is easier for the institutions to handle losses from defaults and to continue to extend reasonable volumes of loans to enterprises and households. The figure at which the BaFin will fix the countercyclical capital buffer after the COVID-19 pandemic will very much depend on the development of the cyclical vulnerabilities and risks in the banking sector.

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).

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]	Column 010
10	Total risk exposure amount	17,744
20	Institution-specific countercyclical buffer rate	0.019%
30	Institution-specific countercyclical buffer requirement	3

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

The institution-specific countercyclical capital buffer (ICCB) for pbb Group as of 31 December 2020 amounts to 0.019 % (31 December 2019: 0.336 %) which is well below the maximum rate of 2.5 % applicable since 2019. There is no capping of the pbb Group specific countercyclical capital buffer rate. The reduction of 0.317 percentage points for the institution-specific countercyclical capital buffer compared with the end of the previous year is due mainly to the COVID-19-related reduction to 0 % of the domestic countercyclical capital buffer for Denmark (31 December 2019: 1 %), France (31. December 2019: 0.25 %), the United Kingdom (31 December 2019: 1 %), Ireland (31 December 2019: 1 %) and Sweden (31 December 2019: 2.5 %), as well as the reduction to 0.5 % for the Czech Republic (31 December 2019: 1.5 %) and the reduction to 1 % for Slovakia (31 December 2019: 1.5 %). These reductions are opposed by the increase to 0.25 % in the domestic countercyclical capital buffer for Luxembourg (31 December 2019: 0 %) as well as the countercyclical capital buffer for Norway of 1 % recognised at the end of 2020 (31 December 2019: no credit exposures).

In accordance with section 10d (1) KWG, the capital requirement of € 3 million (0.019 % 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 € 2,056 million of common equity tier 1 (CET1) capital is available to the pbb Group.

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						
			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	Total	Own funds requirement weights per country	Country-specific countercyclical capital buffer rate [1]
			010	020	030	040	050	060	065	070	080	090	095	100	110	120
10	**Breakdown by country [2]:**															
1	(AT)	Austria	634	436	-	-	-	-	-	15	-	-	-	15	0.01	0.00%
2	(AW)	Aruba	44	-	-	-	-	-	-	-	-	-	-	-	0.00	-
3	(BD)	Bangladesh	24	-	-	-	-	-	-	0.1	-	-	-	0.1	0.00	-
4	(BE)	Belgium	167	150	-	-	-	-	-	3	-	-	-	3	0.00	0.00%
5	(BM)	Bermuda	30	3	-	-	-	-	-	0.4	-	-	-	0.4	0.00	-
6	(CH)	Switzerland	45	227	-	-	-	-	-	14	-	-	-	14	0.01	0.00%
7	(CZ)	Czech Republic	-	421	-	-	-	-	-	24	-	-	-	24	0.02	0.50%
8	(DE)	Germany	779	12,930	-	-	-	-	76	222	-	-	6	228	0.19	0.00%
9	(DK)	Denmark	-	0.004	-	-	-	-	-	-	-	-	-	-	0.00	0.00%
10	(EG)	Egypt	33	-	-	-	-	-	-	0.1	-	-	-	0.1	0.00	-
11	(ES)	Spain	886	323	-	-	-	-	-	34	-	-	-	34	0.03	0.00%
12	(FI)	Finland	-	518	-	-	-	-	-	25	-	-	-	25	0.02	0.00%
13	(FR)	France	395	3,339	-	-	-	-	-	225	-	-	-	225	0.19	0.00%
14	(GB)	United Kingdom	-	3,154	-	-	-	-	-	206	-	-	-	206	0.17	0.00%
15	(GG)	Guernsey	-	3	-	-	-	-	-	0.3	-	-	-	0.3	0.00	-
16	(GH)	Ghana	40	-	-	-	-	-	-	0.3	-	-	-	0.3	0.00	-
17	(HU)	Hungary	-	156	-	-	-	-	-	9	-	-	-	9	0.01	0.00%
18	(IE)	Ireland	133	-	-	-	-	-	-	-	-	-	-	-	0.00	0.00%
19	(IT)	Italy	-	101	-	-	-	-	-	5	-	-	-	5	0.00	0.00%
20	(JE)	Jersey	59	6	-	-	-	-	-	5	-	-	-	5	0.00	-

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: Exposure value for SA	General credit exposures: Exposure value for IRB	Trading book exposures: Sum of long and short positions of trading book	Trading book exposures: Value of trading book exposures for internal models	Securitisation exposures: Exposure value for SA	Securitisation exposures: Exposure value for IRB	Others: Other assets without credit commitments	Own funds requirements: Of which: General credit exposures	Own funds requirements: Of which: Trading book exposures	Own funds requirements: Of which: Securitisation exposures	Own funds requirements: Other assets without credit commitments	Own funds requirements: Total	Own funds requirement weights per country	Country-specific countercyclical capital buffer rate [1]
			010	020	030	040	050	060	065	070	080	090	095	100	110	120
10	**Breakdown by country [2]:**															
21	(KY)	Cayman Islands	111	-	-	-	-	-	-	-	-	-	-	-	0.00	-
22	(LI)	Liechtenstein	-	5	-	-	-	-	-	0.002	-	-	-	0.002	0.00	0.00%
23	(LU)	Luxemburg	131	136	-	-	-	-	-	15	-	-	-	15	0.01	0.25%
24	(MU)	Mauritius	-	1	-	-	-	-	-	0.1	-	-	-	0.1	0.00	-
25	(NL)	Netherlands	0.4	914	-	-	-	-	-	48	-	-	-	48	0.04	0.00%
26	(NO)	Norway	-	51	-	-	-	-	-	2	-	-	-	2	0.00	1.00%
27	(OM)	Oman	51	-	-	-	-	-	-	-	-	-	-	-	0.00	-
28	(PL)	Poland	-	1,324	-	-	-	-	-	73	-	-	-	73	0.06	0.00%
29	(PT)	Portugal	367	-	-	-	-	-	-	6	-	-	-	6	0.00	0.00%
30	(RO)	Romania	-	192	-	-	-	-	-	11	-	-	-	11	0.01	0.00%
31	(SA)	Saudi Arabia	29	-	-	-	-	-	-	0.1	-	-	-	0.1	0.00	0.00%
32	(SE)	Sweden	-	891	-	-	-	-	-	51	-	-	-	51	0.04	0.00%
33	(SI)	Slovenia	-	71	-	-	-	-	-	5	-	-	-	5	0.00	0.00%
34	(SK)	Slovakia	-	104	-	-	-	-	-	5	-	-	-	5	0.00	1.00%
35	(US)	United States of America	130	2,787	-	-	-	-	-	195	-	-	-	195	0.16	0.00%
36	(VG)	Virgin Islands	-	3	-	-	-	-	-	0.3	-	-	-	0.3	0.00	-
20	**Total**		**4,088**	**28,247**	**0**	**0**	**0**	**0**	**76**	**1,202**	**0**	**0**	**6**	**1,208**	**1.00**	

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%
31 December 2020	78%	87%

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.

As of 31 December 2020, the Advanced IRB Approach in pbb Group's credit portfolio covers 78 % of the exposure at default (EAD) and 87 % of risk-weighted assets (RWA). The IRBA coverage is thus virtually unchanged compared with the end of the previous year.

For the calculation of capital requirements for counterparty credit risk according to part 3, title II, chapter 6 CRR (i.e. for derivative transactions), pbb Group applies the mark-to-market method as per 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.

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 2020 amounted to 8 % of the risk-weighted receivables.

The total own funds requirement is 10.519 % (31 December 2019: 10.836 %). The slight decline of 0.317 percentage points compared with the end of the previous year is due to the decline in the institution-specific countercyclical capital buffer (ICCB) in accordance with section 10d KWG in conjunction with section 64r KWG, which amounted to 0.019 % of the total exposure for the pbb Group as of 31 December 2020 (31 December 2019: 0.336 %). On the other hand, the capital conservation buffer (CCB) in accordance with section 10c KWG is unchanged at 2.5 % of the total exposure (31 December 2019: 2.5 %).

The risk-weighted receivables calibrated to expected Basel IV levels (risk-weighted assets; RWA) of the pbb Group amounted to € 17,744 million as of 31 December 2020 (31 December 2019: € 17,721 million); they are thus in line with the level of the end of 2019. In the fourth quarter of 2019 (see Disclosure Report as of 31 December 2019, chapter 3.3 “Own funds requirements”), the pbb Group had defined a higher risk weighting in strategic commercial real estate financing sub-portfolios; this is oriented towards the new requirements of the European Banking Authority (EBA) and, in the opinion of pbb, this is consequently expected to correspond to the expected risk weightings of the future Basel IV requirements of the Basel Committee on Banking Supervision (BCBS).

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
		31.12.2020	31.12.2019	31.12.2020
1	**Credit risk (without counterparty credit risk)**	**16,308**	**16,184**	**1,305**
2	thereof: standardised approach (CRSA)	2,318	2,460	185
2a	Exposures to central governments or central banks	97	158	8
2b	Exposures to regional governments or local authorities	548	569	44
2c	Exposures to other public sector entities	143	154	11
2d	Exposures to multilateral development banks	-	-	-
2e	Exposures to international organisations	-	-	-
2f	Exposures to institutions	13	18	1
2g	Exposures to corporates	541	722	43
2h	Retail exposures	0.1	0.2	0.01
2i	Exposures secured by mortgages on immovable property	219	230	18
2j	Exposures in default	2	2	0.1
2k	Exposures associated with particularly high risk	376	256	30
2l	Exposures in the form of covered bonds	139	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	0.3
2o	Equity exposures	-	-	-
2p	Other items [1]	237	209	19
3	thereof: foundation IRB (FIRB) approach	-	-	-
4	thereof: advanced IRB (AIRB) approach	13,989	13,723	1,119
4a	Exposures to central governments and central banks	-	-	-
4b	Exposures to institutions	-	-	-
4c	Exposures to corporates	13,896	13,652	1,112
4ca	thereof: small and medium-sized enterprises (SME)	210	459	17
4cb	thereof: specialised lending exposures	13,403	13,089	1,072
4cc	thereof: other	283	104	23
4g	Retail exposures	-	-	-
4h	Other non credit-obligation assets	94	72	7
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]**	**458**	**519**	**37**
7	thereof: mark-to-market method	270	279	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)	8	1	0.6
12	thereof: CVA risk [3]	181	239	14
12a	thereof: advanced method	-	-	-
12b	thereof: standardised method	181	239	14
12c	thereof: alternative method, based on the original exposure method	-	-	-

All figures in € million

		Risk-weighted assets (RWA)		Minimum capital requirement
		31.12.2020	31.12.2019	31.12.2020
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	-	-	-
19	**Market risk**	**98**	**148**	**8**
20	thereof: standardised approach	98	148	8
20a	thereof: position risk	-	-	-
20b	thereof: foreign-exchange risk	98	148	8
20c	thereof: commodity risk	-	-	-
21	thereof: internal model approach (IMA)	-	-	-
22	**Large exposures in the trading book** [4]	**0**	**0**	**0**
23	**Operational risk**	**881**	**870**	**70**
24	thereof: basic indicator approach	-	-	-
25	thereof: standardised approach	881	870	70
26	thereof: advanced measurement approach (AMA)	-	-	-
27	Amounts below the thresholds for deduction (subject to 250% risk weight)	237	209	-
28	Floor adjustment	-	-	-
29	**Total**	**17,744**	**17,721**	**1,420**

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

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 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%	-	-	-
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	0.03	-	370%	0.03	0.1	0.01
Total	**0.03**	**0**		**0.03**	**0.1**	**0.01**

A major factor behind the slight increase in the risk-weighted assets (RWA) (by a total of € 23 million) is the new business concluded in the financial year 2020, particularly in the field of commercial real estate financing. This was opposed by repayments and redemptions, including the further reduction in the non-strategic portfolio in line with overall strategy, as well as currency effects in the United Kingdom (GBP). The decline in the derivative volume (counterparty credit risk) and the foreign currency exposures (market risk) also 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 € 1,420 million as of the reporting date (31 December 2019: € 1,418 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 %.

The total own funds requirement amounted to € 1,867 million (31 December 2019: € 1,920 million). The slight reduction compared with the previous year is attributable mainly to the decline in the institution-specific countercyclical capital buffer (ICCB).

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 € 2,056 million (31 December 2019: € 2,014 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) amounted to € 1,931 million for the pbb Group as of 31 December 2020 (31 December 2019: € 1,813 million).

3.4 Capital ratios

The basis for determining the regulatory capital backing and the minimum capital ratios is the Capital Requirements Regulation (CRR) together with the Capital Requirements Directive (CRD). In accordance with these regulations, in the year 2020, 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 %.

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 2020.

Table 13: Capital ratios

All figures in %

	Common Equity Tier 1 ratio		Tier 1 capital ratio		Total capital ratio	
	31.12.2020 1)	31.12.2019 2)	31.12.2020 1)	31.12.2019 2)	31.12.2020 1)	31.12.2019 2)
pbb Group	16.1	15.9	17.8	17.5	21.4	21.1

1) After adoption of the annual financial statements 2020, for regulatory purposes without payment into retained earnings (subject to approval of the annual general meeting).

2) After adoption of the annual financial statements 2019 and appropriation of profit. On 3 April 2020, the Management Board and Supervisory Board withdrew the original dividend proposal for the financial year 2019 in the amount of € 0.90 per eligible share (€ 121 million). At the annual general meeting of 28 May 2020, a resolution was adopted to retain the cumulative profit generated in 2019.

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 the reporting year 2020.

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

As a result of the SREP, pbb Group has been required in 2020 to maintain a minimum CET1 ratio of 9.5 % (unchanged compared with the previous year; excluding the countercyclical capital buffer, which varies according to country, and hence, for specific portfolios 0.019 % as at 31 December 2020). 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 2020 (unchanged compared with the previous year), excluding the country- and thus portfolio-specific varying countercyclical capital buffer of 0.019 % as of 31 December 2020. 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 (P2R: 2.5 %) and the capital conservation buffer (2.5 %).

ECB adjustments in 2020

The ECB adjusted the above-mentioned SREP requirements as of 12 March 2020 as a result of the COVID-19 pandemic. Accordingly, of the Pillar 2 capital requirement (P2R: 2.5 %), approximately 1.4 % (56.25 %) now has to be maintained in the form of common equity tier 1 capital (CET1), and approximately 1.9 % (75 %) has to be maintained in the form of tier 1 capital. With this adjustment, the SREP requirement for the CET1 minimum ratio has reduced to approximately 8.4 % (without the country- and thus portfolio-specific varying countercyclical capital buffer of 0.019 % as of 31 December 2020). The SREP total capital requirement is unchanged at 13 %.

The CET1 minimum capital requirement that has been applicable since 2020 also represents the threshold for mandatory calculation of a so-called maximum distributable amount (Maximum Distributable Amount, MDA). This generally limits distributions to the CET1 capital, new performance-based remuneration, and interest payments on additional Tier 1 capital (AT1 capital).

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 athe 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. As of 31 December 2020, the pbb Group had not agreed any security lending/repo transactions.

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 Amending 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 6.0 % as of 31 December 2020 (line 22 of table EU LRCom), and is thus considerably higher than this minimum requirement. For the purpose of calculating the leverage ratio in response to the COVID-19 pandemic, exposures to central banks of the euro system have temporarily been excluded (until 28 June 2021) in accordance with article 500b CRR in conjunction with the Amending Regulation (EU) 2020/873 and the guidelines EBA/GL/2020/11. Without the temporary exclusion of exposures to central banks of the euro system, the leverage ratio would be 5.5 % (line 22a of the table EU LRCom).

Table 14: Leverage ratio (EU LRSum)

All figures in € million

	Summary reconciliation of accounting assets and leverage ratio exposures	Applicable amount 31.12.2020
1	Total assets as per published financial statements	58,881
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	-1,917
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)	1,860
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)	-24
7	Other adjustments [1)]	-6,465
8	**Leverage ratio total exposure measure**	**52,335**

1) The other adjustments mainly comprise cash collateral provided by pbb in derivative business as well as the temporarily excluded exposures to central banks of the euro system in response to the COVID-19 pandemic.

Table 15: Leverage ratio (EU LRCom)

All figures in € million, unless otherwise stated

	Leverage ratio common disclosure	CRR leverage ratio exposures 31.12.2020
	On-balance sheet exposures (excluding derivatives and SFTs)	
1	On-balance sheet items (excluding derivatives, SFTs and fiduciary assets, but including collateral)	56,553
2	(Asset amounts deducted in determining tier 1 capital)	-24
3	**Total on-balance sheet exposures (excluding derivatives, SFTs and fiduciary assets)** (sum of lines 1 and 2)	**56,529**
	Derivative exposures	
4	Replacement cost associated with all derivatives transactions (i.e. net of eligible cash variation margin)	159
5	Add-on amounts for PFE associated with all derivatives transactions (mark-to-market method)	312
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	647
7	(Deductions of receivables assets for cash variation margin provided in derivatives transactions)	-1,796
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)	**-678**

All figures in € million, unless otherwise stated

	Leverage ratio common disclosure	CRR leverage ratio exposures 31.12.2020
	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**
	Other off-balance sheet exposures	
17	Off-balance sheet exposures at gross notional amount	3,522
18	(Adjustments for conversion to credit equivalent amounts)	-1,662
19	**Other off-balance sheet exposures** (sum of lines 17 to 18)	**1,860**
	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)) 1)	-5,376
	Capital and total exposures	
20	**Tier 1 capital** 2)	**3,152**
21	**Total leverage ratio exposures** (sum of lines 3, 11, 16, 19, EU-19a and EU-19b)	**52,335**
	Leverage ratio	
22	**Leverage ratio** 3)	**6.0%**
22a	**Leverage ratio** (without deduction of the exposures to central banks of the euro system in accordance with line EU-19b) 4)	**5.5%**
	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) The line EU-19b shows the exposures to central banks of the euro system which in line 22 are disregarded for the purpose of determining the total exposure.

2) After adoption of the annual financial statements 2020, for regulatory purposes without payment into retained earnings (subject to approval of the annual general meeting).

3) The line 22 shows the leverage ratio after deduction of exposures to central banks of the euro system in response to the COVID-19 pandemic in accordance with article 500b CRR in conjunction with the Amending Regulation (EU) 2020/873 ("CRR Quick Fix") and the guidelines EBA/GL/2020/11. The period of temporary application is from 1 January 2020 to 27 June 2021.

4) As distinct from line 22, the newly inserted line 22a shows the leverage ratio without the temporary exclusion of exposures to central banks of the euro system in response to the COVID-19 pandemic.

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 31.12.2020
EU-1	Total on-balance sheet exposures (excluding derivatives, SFTs, and exempted exposures), thereof:	50,000
EU-2	Trading book exposures	-
EU-3	Banking book exposures, thereof:	50,000
EU-4	Covered bonds	1,136
EU-5	Exposures treated as sovereigns	15,426
EU-6	Exposures to regional governments, multilateral development banks , international organisations and public sector entities not treated as sovereigns	3,277
EU-7	Institutions	1,099
EU-8	Secured by mortgages of immovable properties	26,022
EU-9	Retail exposures	-
EU-10	Corporate	2,314
EU-11	Exposures in default	357
EU-12	Other exposures (e.g. equity, securitisations, and other non-credit obligation assets)	369

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 2019, the leverage ratio for the pbb Group as of 31 December 2020 improved to 6.0 % (31 December 2019: 5.6 %). The increase is attributable to the reduction of € 2,692 million in the total exposure and the simultaneous slight increase of € 43 million in tier 1 capital. The main factor for the reduction in the total exposure is the COVID-19-related exemption regarding the temporary exclusion of exposures to central banks of the euro system (line EU-19b of the table EU LRCom). Tier 1 capital as at 31 December 2020 amounts to € 3,152 million (31 December 2019: € 3,109 million), the total risk position measurement is € 52,331 million (31 December 2019: € 55,023 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 € 25 billion (nominal) as of 31 December 2020, pbb is one of the largest Pfandbrief issuers and is thus also a major issuer of covered bonds in Europe.

As of 31 December 2020, the assets of the pbb Group, based on the median of the quarterly data of the financial year, amounted to € 59.1 billion (31 December 2019: € 59.7 billion); of this figure, € 38.2 billion (64.7 %) are encumbered (31 December 2019: € 38.9 billion or 65.1 %). 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 2020.

As was the case in the previous year, Pfandbriefe represented the main source (74 %) of asset encumbrance for the pbb Group. The issuing of mortgage Pfandbriefe and public Pfandbriefe for refinancing real-estate business eligible for cover fund purposes and public investment financing involves the encumbrance of loans and securities in the mortgage cover fund and in the public cover fund. In addition to the issuing of Pfandbriefe, the participation of pbb in the TLTRO III programme of the European Central Bank (ECB) (19 % share) as well as derivative financial instruments (7 % share) is in particular a further source of asset encumbrance.

As a result of the attractive conditions, pbb in June 2020 participated in the ECB programme TLTRO III (targeted longer-term refinancing operations, TLTRO), which makes available loans with a duration of max. three years to the banks in the euro zone, and had drawn a credit tranche of € 7.5 billion for three years as of 30 June 2020. As was the case with the TLTRO II, the pbb Group thus uses the targeted longer-term refinancing transactions with which the ECB continues to support the permanent access of enterprises and households to bank loans in view of the current economic turmoil and the increased level of uncertainty, thus making a contribution for the real-estate sector. Its liabilities from the TLTRO II programme of the ECB (duration 2019 to 2021) of € 1.9 billion were redeemed ahead of schedule by pbb as of 24 June 2020.

A further source of asset encumbrance are security financing transactions (security lending/repo transactions). As of the reporting date 31 December 2020, the pbb Group had not agreed any security lending/repo transactions. The assets encumbered by security lending/repo transactions, based on the median of the quarterly data of the financial year, amounted to € 0.

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 the financing of investments in commercial real estate and public infrastructure, pbb issues mortgage Pfandbriefe secured by property charges and public Pfandbriefe secured by public sector receivables. 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 the insolvency of a Pfandbrief bank, the cover funds which secure the Pfandbriefe are first available solely to the Pfandbrief holders for settling their claims. Only when all the claims of the Pfandbrief holders have been completely settled is any remainder of the cover funds available to settle the claims of the insolvency creditors.

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 2020. In order to maintain this rating, pbb must provide minimum net present value surplus cover of 5.5 % for mortgage Pfandbriefe and 8.0 % for public Pfandbriefe.

The surplus cover of the mortgage Pfandbriefe as of 31 December 2020 was actually 16.0 % (nominal) and 15.0 % (present value). For the public Pfandbriefe, pbb provided 20.5 % (nominal) and 19.8 % (cash) surplus cover as of 31 December 2020. The surplus cover thus exceeded the requirements of the rating agencies and the legislator.

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 2020.

The other assets shown in the table “Encumbered and unencumbered assets” (line 120) mainly comprise exposures (approx.. 94 %) as well as derivatives (around 6 %), 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), whose share is less than 1 % and 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	
			thereof: notionally eligible EHQLA and HQLA [1]		thereof: notionally eligible EHQLA and HQLA [1]		thereof: EHQLA and HQLA [1]		thereof: EHQLA and HQLA [1]
		010	030	040	050	060	080	090	100
010	**Assets of the reporting institution**	**38,239**	**5,253**	—	—	**20,889**	**1,083**	—	—
030	Equity instruments	-	-	—	—	-	-	—	—
040	Debt securities	7,848	5,253	7,848	5,253	1,289	1,083	1,288	1,083
050	thereof: covered bonds	1,136	-	1,136	-	0	-	0	-
060	thereof: asset-backed securities (ABS)	-	-	-	-	-	-	-	-
070	thereof: issued by general governments	5,462	4,181	5,462	4,181	807	669	809	669
080	thereof: issued by financial corporations	2,290	1,072	2,290	1,072	550	530	548	530
090	thereof: issued by non-financial corporations	-	-	-	-	-	-	-	-
120	Other assets	31,003	-	—	—	19,613	-	—	—
121	thereof: derivatives	2,318	-	—	—	235	-	—	—
122	thereof: loans and advances	28,549	-	—	—	19,107	-	—	—

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).

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**	**38,239**	**5,253**	———	———

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).

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**	**37,772**	**38,239**
011	Derivatives	2,760	2,318
012	thereof: over the counter (OTC)	2,760	2,318
013	Deposits	7,470	6,267
014	thereof: repurchase agreements	7,470	6,267
015	thereof: collateralised deposits other than repurchase agreements	-	-
016	Debt securities issued	28,607	30,588
017	thereof: covered bonds issued	28,607	30,588
018	thereof: asset-backed securities (ABS) issued	-	-
019	Other sources of encumbrance	-	-
020	thereof: securities-lending transactions	-	-

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). At the level of the individual institution, pbb uses the exemption from the requirements of section 25a (1) sentence 3 numbers 1, 2 and 3 letters b and c of the KWG with regard to the risk controlling function.

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 2020 of the pbb Group. The annual report is published on the website of pbb under Investors / Financial Reports and further publications.

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 2020 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 2020 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

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 Credit Risk Management (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 portfolio developments of pbb Group. Additional sub-committees have been established beside 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 takes decisions within the scope of a pre-defined assignment of approval powers and in accordance with IFRS and the German Commercial Code (HGB). It is responsible for decisions, recommendations and the management of all risk provisioning matters.

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 for ensuring 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 can business with new products or in new markets 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 consultation. 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

<table>
<tr><td colspan="8">Risk Management and Liquidity Strategy Committee (RLA) of the Supervisory Board</td></tr>
<tr><td colspan="8">Management Board</td></tr>
<tr><td colspan="5">Risk Committee (RC)</td><td rowspan="2">Asset and Liability Committee (ALCO)</td><td rowspan="2">Legal and Regulatory Risk Committee[1] (LRRC)</td><td rowspan="2">Outsourcing Committee (OC)</td></tr>
<tr><td>Credit Committee</td><td>Watchlist Committee</td><td>Risk Provisioning Committee</td><td>New Product Process Committee</td><td>Stress Test Committee</td></tr>
</table>

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

<table>
<tr><td colspan="4">Chief Risk Officer (CRO)</td></tr>
<tr><td>Risk Management & Control (RMC)</td><td>Credit Risk Management (CRM)</td><td>Operations</td><td>Compliance</td></tr>
</table>

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 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, the improvement of data quality within CRM and implementation of regulatory requirements in the credit processes.
- 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 responsible for the central coordination of key controls within the framework of the Internal Control System. Compliance is also represented in various committees.

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, 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 appetite; 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 2020 was drawn up, adopted by the Management Board and approved by the Supervisory Board. Further updates of the risk strategy were made in the course of the first half of 2020, arising from model changes and associated limit adjustments.

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. The economic perspective 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 appe-tite, 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.

Effects of the COVID-19 pandemic on risk and portfolio management

At an early stage of the COVID-19 pandemic, the Management Board of Deutsche Pfandbriefbank AG (pbb) took numerous measures in order to be able to immediately identify, assess and adequately respond to developments and potential risks in connection with the pandemic. The analysis of the implications of the COVID-19 pandemic on pbb Group's business model and its capital adequacy was part of the regular process of revising the business and risk strategy. In order to address the impact of the pandemic on the risk profile, the Bank especially expanded capacities and sharpened the professional focus. For example, the Management Board of pbb has established a Task Force with various workstreams across departments and divisions, which deals more intensively with certain asset classes such as hotel, retail or office, the handling of government support measures for borrowers and the regulatory aspects in the context of COVID-19, as well as preparing sector and market analyses. By means of portfolio screening measures and taking meaningful and pre-defined filters into account, subsets of the existing portfolios were identified and then examined for increased susceptibility to the effects of the pandemic, with greater involvement of divisional and departmental management levels. Subsequently, pbb Group intensified its monitoring activities and reporting for certain portfolio clusters. Monitoring focused particularly on cash flow and collateral developments. With respect to the latter, whenever there were indications of a material value loss, corresponding extraordinary valuations were carried out. In terms of reporting, the Bank increasingly focused on the requested deferrals of repayments or the desired adjustments to other contractual obligations in the loan agreements, as well as on portfolio clusters and asset classes that had an increased susceptibility to the negative effects of the COVID-19 pandemic. In addition, certain process flows – especially in the Credit Risk Management – were adjusted to the conditions brought about by the COVID-19 pandemic, and new work instructions were introduced after they had been discussed and approved in the Risk Committee. Credit standards were tightened substantially in new business.

The Management Board and the Supervisory Board frequently discussed current developments, and the regular weekly Management Board meeting for loans (“Full Management Board") was significantly expanded with view to content and meeting time. Moreover, the Supervisory Board was involved at an earlier stage in the discussion and decision-making process for certain new business applications.

As part of an integrated approach, the impact of macroeconomic stress scenarios on the material metrics of the normative and economic perspectives was calculated within the ICAAP for a horizon of several years during the period under review. Stress scenarios were developed in the wake of the COVID-19 pandemic, and analyses carried out as to how these scenarios affect the Bank. Given the highly dynamic development, these scenarios are subject to a considerable uncertainty.

Internal Audit

The need for an Internal Audit function (Group Internal Audit) is based on specific legal provisions, such as section 25a (1) sentence 2 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
- 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. Details of quantification as well as the calculation results for the economic capital for business and strategic risks are described in chapter 4.3 “Economic capital and risk-bearing capacity” (ICAAP).

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 2020 as well 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. Details are set out in 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 „ECB Guide to the internal capital adequacy assessment process (ICAAP)", published in November 2018, regulatory authorities expect banks to apply two supplementary ICAAP perspectives, one being normative and the other being economic. In line with current ICAAP methodology, the capital adequacy assessment is evaluated from a normative as well as from an economic perspective. Both perspectives are aimed at the sustainability of the business and capital planning, and on the long-term viability of the pbb Group.

The normative perspective is geared towards securing the regulatory and supervisory requirements for capital and liquidity over several years. Particular focus is placed on forward-looking compliance with supervisory capital ratio requirements under expected and adverse conditions. The normative perspective also takes into account both the cross-institutional capital ratios required pursuant to the CRR and the bank-specific mini-mum ratios for own funds according to the ECB's SREP decision. 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. As the normative perspective's requirements have been fully implemented, the going-concern approach became obsolete and its results were last reported as at 31 December 2019. The risk-bearing capacity established in the pbb Group, which uses the concept of economic capital to quantify risk, is therefore only used for the economic perspective.

The economic perspective is an additional, parallel management approach on an equal footing that monitors capital 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. Economic capital is defined as the capital required to cover the financial risks, taking into account a confidence level of 99.9 % 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 and compared to economic capital.

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 property 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 material sub-risks on a granular level that were taken into account in the ICAAP during the period under review, albeit no longer in the form of regularly validated buffers but as other risks. Extension risk, settlement risk, realisation risk for defaulted loans, pension risk and model risk are combined for this purpose. 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.

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 the economic capital for the individual risk types as well as the reference date values of the parameters are detailed in the following sections “Quantification of the economic capital of individual risk types” and “Results of the 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, 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 %.

The methods of calculating economic capital for the individual material risk types for 2020 are explained below.

Economic capital for credit risk

For calculating the credit risk at the portfolio level, a credit portfolio model which is based on the approach of a so called asset value model is used. 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.

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, extension risk and model risk are not reported directly as part of credit risk. Since 1 January 2020, these risks have no longer been taken into account as deductions from available financial resources, but instead represents (as other risks, which are regularly updated) a component of overall risk.

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 under economic capital for market risk. Since 1 January 2020, pension risk has no longer been deducted from available financial resources in the form of a regularly validated buffer, but instead represents (as other risk) a component of the overall risk.

Economic capital for operational risk

Within the framework of the ICAAP, operational risk is quantified using the so-called loss distribution ap-proach (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 model-ling approach. The full loss distribution is generated using a Monte Carlo simulation technique; diversifica-tion effects between the various sub-types of risk and modelling categories are not being considered. Fur-thermore, 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 ap-proach pursuant to the 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 presentation of the values measured as of the reference date for the bank supervision ratios CET1 ratio, tier 1 ratio, own funds ratio, MREL and leverage ratio, please refer to chapter 3 “Own funds and assets”. The requirements for regulatory capital ratios were satisfied at any time throughout the reporting period. 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.

Economic perspective

In the economic perspective, aggregate risk after diversification effects increased slightly during the period under review. This rise was mainly driven by other material risks. Corresponding changes were made to the risk strategy at the start of the year under review. A “buffer for other risks” had previously been deducted from capital. This has been reduced and is now shown on the risk side, constituting other risks, including model risks. This shift led to an increase in diversified economic capital and to relief on capital at the same time. Market risk remained stable overall in the period under review. A slight increase, which resulted mainly from interest rate risks, was observed. Economic capital for business and strategic risk only changed slightly; the same applies for economic capital for operational risk, which is determined at least annually. The slight decline in economic capital for credit risk was primarily driven by rating and LGD changes, and was partly offset by an increase concerning REF due to rating downgrades and new business.

Table 20: Risk-bearing capacity economic perspective

All figures in € million, unless otherwise stated

Risk types	Economic perspective		
	31.12.2020	31.12.2019	Change
Credit risk	1,149	1,183	-34
Market risk	652	640	12
Operational risk	98	97	1
Business and strategic risk	-	1	-1
Other risks	135	-	135
Total before diversification effects	**2,034**	**1,921**	**113**
Total after diversification effects	**1,850**	**1,747**	**103**
Available financial resources before net hidden losses	3,065	2,886	179
Net hidden losses	-	-	-
Available financial resources	**3,065**	**2,886**	**179**
Excess capital	1,215	1,139	76
Capital Adequacy Ratio in %	166	165	1

This is offset by available financial resources, which have increased mostly due to the aforementioned reduction of the buffer for other risks in the reporting period, but also as a result of the increase in equity in accordance with IFRS due to accumulated profits. Compared to year-end 2019, excess capital increased, whilst the internal capital adequacy ratio (defined as the ratio of available financial resources to diversified economic capital) was virtually unchanged. Overall, the Bank's risk-bearing capacity at the reporting date was demonstrated 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

A quick economic recovery would lead to tightening credit spreads and generally improved ratings. This would strengthen available financial resources further and hence, excess coverage in the ICAAP.

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 brought together within the Risk Committee and the subordinated Stress Test 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. Stress scenarios were developed in the wake of the COVID-19 pandemic, and analyses carried out how these scenarios affect the Bank. Given the highly dynamic development, these scenarios are subject to a considerable uncertainty.

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 conducted regularly. The results of these tests describe specific constella-tions 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 de-faults 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 (counter-party risk/replacement risk) or money market transactions (repayment risk). The possible default of sovereign or regional govern-ments 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.

With regard to the business focus in connection with the strategic portfolios and also with regard to the statements regarding the strategy in the run-down portfolio, please refer to the comments in the chapter 2.1 "Organisational and legal structure".

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 de-fault (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. This model and the quantification of the economic credit risk are described in chapter 4.3 “Economic capital and risk-bearing capacity” (ICAAP).

Stress testing

The stress tests for the economic capital in the credit risk are discussed in the 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 de-signed to examine the extent to which a certain risk parameter (e. g. rating, loss given default (LGD), currency) may change before a minimum ratio (Common Equity Tier 1 (CET1) ratio, Tier 1 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 (STA).

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. This includes irregularities in connection to the COVID-19 pandemic. 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. Decisions to this effect are made within the scope of the Bank's valid assignment of 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 com- prises amongst others rent assignation as well as the assignation 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 deter-mined when the loan is initially granted, and reviewed on an annual basis. With 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. De-pending 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 counter-party 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. In future, opportunities may also result from a lower than assumed number of migrations to weaker rating classes.

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. 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 € 58,636 million as of 31 December 2020 (31 December 2019: € 56,441 million); of this figure, € 28,937 million (49 %) is attributable to the IRB approach and € 29,700 million (51 %) 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.

Table 21: 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] 31.12.2020	Average net exposures [2] over the period 01.01. to 31.12.2020
		a	b
1	Central governments and central banks	-	-
2	Institutions	-	-
3	Corporates	28,843	28,737
4	thereof: specialised lending	24,873	24,844
5	thereof: small and medium-sized enterprises (SME)	1,751	1,871
6	Retail	-	-
14	Equity	0.03	0.02
14a	Other non credit-obligation assets	94	78
15	**Total IRB approach**	**28,937**	**28,815**
16	Central governments or central banks	14,854	14,430
17	Regional governments or local authorities	6,111	6,419
18	Public sector entities	2114.9	2164
19	Multilateral development banks	798	825
20	International organisations	151	138
21	Institutions	1,127	1,200
22	Corporates	2,429	2,639
23	thereof: small and medium-sized enterprises (SME)	160	180
24	Retail	0.1	0.2
25	thereof: small and medium-sized enterprises (SME)	-	-
26	Secured by mortgages on immovable property	560	605
27	thereof: small and medium-sized enterprises (SME)	333	311
28	Exposures in default	54	60
29	Exposures associated with particularly high risk	266	213
30	Covered bonds	1,136	1,135
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	95	102
35	**Total standardised approach**	**29,700**	**29,934**
36	**Total**	**58,636**	**58,749**

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.

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Table 22: 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	20,433	10,122	3,550	471	3,833	326	86	4,051	1,405	1,168	1,175	74	3,111	2,863	-	-	-	28,843
3a	thereof: specialised lending	16,634	6,691	3,222	471	3,794	326	86	3,884	1,355	1,051	1,170	74	3,111	2,863	-	-	-	24,873
3b	thereof: SMEs	1,629	1,546	84	-	-	-	-	117	-	117	5	-	-	-	-	-	-	1,751
4	Retail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	Equity	0.03	0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.03
5a	Other non credit-obligation assets	94	94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	93.59
6	**Total IRB approach**	**20,526**	**10,216**	**3,550**	**471**	**3,833**	**326**	**86**	**4,051**	**1,405**	**1,168**	**1,175**	**74**	**3,111**	**2,863**	**0**	**0**	**0**	**28,937**
7	Central governments or central banks	14,337	5,792	924	5,427	-	223	1,473	257	256	-	-	42	-	-	218	-	-	14,854
8	Regional governments or local authorities	5,797	2,821	1,731	-	-	832	384	199	-	199	-	-	20	-	94.4	-	-	6,111
9	Public sector entities	2,115	577	1,208	-	-	57	-	-	-	-	-	-	-	-	-	-	-	2,115
10	Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	798	798
11	International organisations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	151	151
12	Institutions	1,079	770	3	306	-	-	-	13	-	11	-	-	35	35	-	-	-	1,127
13	Corporates	1,964	450	442	634	22	-	-	-	-	-	103	74	185	-	103.8	-	-	2,429
14	Retail	0.1	0.0002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1
15	Secured by mortgages on immovable property	482	376	-	-	106	-	-	-	-	-	-	-	77	77	-	-	-	560

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
16	Exposures in default	1	1	-	-	-	-	-	-	-	-	-	-	53	53	-	-	-	54
17	Exposures associated with particularly high risk	266	266	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	266
18	Covered bonds	1,136	-	-	-	-	886	-	-	-	-	-	-	-	-	-	-	-	1,136
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	94.78	94.78	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	94.78
23	**Total standardised approach**	**27,274**	**11,147**	**4,307**	**6,366**	**131**	**1,999**	**1,857**	**469**	**256**	**210**	**104**	**116**	**371**	**165**	**416**	**0**	**949**	**29,700**
24	**Total**	**47,801**	**21,363**	**7,857**	**6,837**	**3,965**	**2,324**	**1,943**	**4,520**	**1,661**	**1,378**	**1,279**	**190**	**3,482**	**3,028**	**416**	**0**	**949**	**58,636**

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".

Table 23: 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	-	-	-	-	-	327	2	-	99	-	905	27,494	4	1	1	0.2	-	0.1	0.2	10	28,843
3a	thereof: specialised lending	-	-	-	-	-	302	-	-	99	-	744	23,728	-	-	-	-	-	-	-	-	24,873
3b	thereof: SMEs	-	-	-	-	-	25	1	-	-	-	161	1,554	3	1	1	0.2	-	0.1	0.2	6	1,751
4	Retail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	Equity	-	-	-	-	-	-	-	-	-	-	0.03	-	-	-	-	-	-	-	-	-	0.03
5a	Other non credit-obligation assets	-	-	-	-	-	-	-	-	-	-	94	-	-	-	-	-	-	-	-	-	94
6	**Total IRB approach**	**0**	**0**	**0**	**0**	**0**	**327**	**2**	**0**	**99**	**0**	**998**	**27,494**	**4**	**1**	**1**	**0.2**	**0**	**0.1**	**0.2**	**10**	**28,937**
7	Central governments or central banks	-	-	-	-	-	-	-	-	-	-	5,377	-	-	-	9,477	-	-	-	-	-	14,854
8	Regional governments or local authorities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6,111	-	-	-	-	-	6,111
9	Public sector entities	-	-	-	-	176	-	-	50	3	-	352	169	-	-	655	80	629	-	-	-	2,115
10	Multilateral development banks	-	-	-	-	-	-	-	-	-	-	798	-	-	-	-	-	-	-	-	-	798
11	International organisations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	151	-	-	-	-	-	151
12	Institutions	-	-	-	-	-	-	-	-	-	-	1,127	-	-	-	-	-	-	-	-	-	1,127
13	Corporates	-	-	51	62	2	110	2	85	73	20	279	471	143	136	894	-	5	94	-	2	2,429
14	Retail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1	0.1
15	Secured by mortgages on immovable property	-	-	-	-	-	15	-	-	5	-	1	487	43	4	-	-	-	-	-	5	560

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	-	-	-	-	-	-	-	-	-	-	53	-	-	-	-	-	-	-	-	1	54
17	Exposures associated with particularly high risk	-	-	-	-	-	93	-	-	-	-	-	173	-	-	-	-	-	-	-	-	266
18	Covered bonds	-	-	-	-	-	-	-	-	-	-	1,136	-	-	-	-	-	-	-	-	-	1,136
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	-	-	-	-	-	-	-	-	-	-	95	-	-	-	-	-	-	-	-	-	95
23	**Total standardised approach**	**0**	**0**	**51**	**62**	**178**	**219**	**2**	**135**	**81**	**20**	**9,221**	**1,300**	**186**	**140**	**17,288**	**80**	**635**	**94**	**0**	**7**	**29,700**
24	**Total**	**0**	**0**	**51**	**62**	**178**	**546**	**3**	**135**	**180**	**20**	**10,219**	**28,794**	**190**	**142**	**17,288**	**80**	**635**	**94**	**0.2**	**17**	**58,636**

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.

Table 24: Exposures by residual maturity (EU CRB-E)

All figures in € million

	Residual maturity	Net value of exposures [1]					
		On demand	≤ 1 year	> 1 year to ≤ 5 years	> 5 years	No stated maturity	Total
		a	b	c	d	e	f
1	Central governments and central banks	-	-	-	-	-	-
2	Institutions	-	-	-	-	-	-
3	Corporates	232	3,034	18,408	7,170	-	28,843
3a	thereof: specialised lending	231	2,916	17,380	4,347	-	24,873
3b	thereof: SMEs	1	99	460	1,191	-	1,751
4	Retail	-	-	-	-	-	-
5	Equity	-	-	-	-	0.03	0.03
5a	Other non credit-obligation assets	18	76	-	-	-	94
6	**Total IRB approach**	**249**	**3,110**	**18,408**	**7,170**	**0.03**	**28,937**
7	Central governments or central banks	-	5,619	1,334	7,901	-	14,854
8	Regional governments or local authorities	-	260	658	5,192	-	6,111
9	Public sector entities	0.03	66	561	1,487	-	2,115
10	Multilateral development banks	-	202	182	414	-	798
11	International organisations	-	6	119	26	-	151
12	Institutions	-	26	0.1	1,073	28	1,127
13	Corporates	0.1	112	820	1,497	-	2,429
14	Retail	-	-	0.1	-	-	0.1
15	Secured by mortgages onimmovable property	-	154	173	233	-	560
16	Exposures in default	0.3	-	19	35	-	54
17	Exposures associated with particularly high risk	-	126	140	-	-	266
18	Covered bonds	-	-	715	421	-	1,136
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	-	-	-	-	95	95
23	**Total standardised approach**	**0.4**	**6,574**	**4,722**	**18,279**	**123**	**29,700**
24	**Total**	**250**	**9,684**	**23,130**	**25,449**	**123**	**58,636**

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 2020 increased by € 2,195 million compared with the end of 2019, by approximately 4 % to a total of € 58,636 million (31 December 2019: € 56,441 million). Major factors for the increase are the new business conducted in the financial year 2020, in particular in commercial real estate financing, as well as the participation of pbb in the TLTRO III programme of the European Central Bank (ECB). This was opposed by repayments and redemptions, including the further reduction in the non-strategic portfolio in line with overall strategy, as well as additional currency effects in the United Kingdom (GBP). This was also opposed by the repayment of the liabilities from the TLTRO II programme of the ECB.

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. € 21.4 billion, Germany continues to account for the main percentage of exposures (36 %). The other countries of the European Monetary Union (excl. Germany) account for € 26.4 billion (45 %), and other EU countries account for € 4.5 billion (8 %). The USA accounts for approximately € 3.0 billion (5 %).

The United Kingdom, which accounts for approximately € 1.4 billion (2 %) left the European Union (EU) on 31 January 2020 (Brexit). However, EU law continued to be valid during a transitional period until 31 December 2020. As of the disclosure reporting date, the United Kingdom accordingly continues to be shown in the table EU CRB-C under the position “Other EU countries”. Since 1 January 2021, EU law has no longer been applicable in the United Kingdom, so that the exposures since that time are shown under the position “Rest of Europe”.

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 € 28.8 billion (49 %), “Public administration, defence, compulsory social security” with € 17.3 billion (29 %) and “Rendering of financial and insurance services” with € 10.2 billion (17 %). 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 the type of risk position, major geographical regions and economic sectors (NACE) code.

The pbb Group has applied the guidelines EBA/GL/2018/10 concerning the disclosure of non-performing and forborne exposures since the reporting date 31 December 2019. As was the case at the end of the previous year, the pbb Group at the end of 2020 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.

The NPL tables also show the credit quality of forborne and non-performing exposures as well as the related 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 2020, the table is not relevant for the pbb Group. The pbb Group had not carried out any salvage acquisitions as of the reporting date.

Table 25: 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]
		Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs in the year 2020	Credit risk adjustment charges in the year 2020 [1]	(a + b - c - d)
		a	b	c	d	e	f	g
1	Central governments and central banks	-	-	-	-	-	-	-
2	Institutions	-	-	-	-	-	-	-
3	Corporates	416	28,660	233	-	2	114	28,843
4	thereof: specialised lending	408	24,694	228	-	1	111	24,873
5	thereof: SMEs	8	1,748	4	-	-	2	1,751
6	Retail	-	-	-	-	-	-	-
14	Equity	-	0.03	-	-	-	-	0.03
14a	Other non credit-obligation assets	-	94	-	-	-	-	94
15	**Total IRB approach**	**416**	**28,754**	**233**	**0**	**2**	**114**	**28,937**
16	Central governments or central banks	-	14,855	1	-	-	1	14,854
17	Regional governments or local authorities	-	6,111	0.3	-	-	0.2	6,111
18	Public sector entities	-	2,115	0.1	-	-	0.1	2,115
19	Multilateral development banks	-	798	-	-	-	-	798
20	International organisations	-	151	-	-	-	-	151
21	Institutions	-	1,127	-	-	-	-	1,127
22	Corporates	53	2,455	25	-	-	12	2,429
23	thereof: small and medium-sized enterprises (SME)	-	160	0.2	-	-	0.1	160
24	Retail	1	0.2	0.01	-	-	-	0.1
25	thereof: small and medium-sized enterprises (SME)	-	-	-	-	-	-	-
26	Secured by mortgages on immovable property	-	560	-	-	-	-	560
27	thereof: small and medium-sized enterprises (SME)	-	333	-	-	-	-	333
28	Exposures in default [3]	54	-	0.02	-	-	-	54
29	Exposures associated with particularly high risk	-	266	0.4	-	-	0.2	266
30	Covered bonds	-	1,137	0.3	-	-	-	1,136
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	-	95	-	-	-	-	95
35	**Total standardised approach**	**54**	**29,673**	**28**	**0**	**0**	**13**	**29,700**
36	**Total**	**470**	**58,427**	**261**	**0**	**2**	**127**	**58,636**
37	thereof: loans	470	40,315	242	-	2	119	40,543
38	thereof: debt securities	-	9,003	2	-	-	-1	9,001
39	thereof: off-balance-sheet exposures	0.4	3,455	17	-	-	9	3,438

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.

Table 26: Credit quality of exposures by industry (EU CR1-B)

All figures in € million

	Significant industries [1]	Gross carrying values of Defaulted exposures	Gross carrying values of Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs in the year 2020	Credit risk adjustment charges in the year 2020 [2]	Net values [3] (a + b - c - d)
		a	b	c	d	e	f	g
1	Agriculture, forestry and fishing	-	-	-	-	-	-	-
2	Mining and quarrying	-	-	-	-	-	-	-
3	Manufacturing	-	51	-	-	-	-	51
4	Electricity, gas, steam and air conditioning supply	-	62	-	-	-	-	62
5	Water supply	-	178	-	-	-	-	178
6	Construction	0.03	548	3	-	-	1	546
7	Wholesale and retail trade	-	3	0.01	-	-	-	3
8	Transport and storage	0.1	135	0.1	-	-	-	135
9	Accommodation and food service activities	-	181	0.46	-	-	0.2	180
10	Information and communication	-	20	-	-	-	-	20
10a	Financial and insurance activities	53	10,171	4	-	-	2	10,219
11	Real estate activities	416	28,606	228	-	2	111	28,794
12	Professional, scientific and technical activities	-	190	0.1	-	-	-	190
13	Administrative and support service activities	0.4	142	1	-	-	0.3	142
14	Public administration and defence, compulsory social security	-	17,313	25	-	-	12	17,288
15	Education	-	80	-	-	-	-	80
16	Human health services and social work activities	-	635	-	-	-	-	635
17	Arts, entertainment and recreation	-	94	0.02	-	-	-	94
18	Other services	-	0.2	0.01	-	-	-	0.2
18a	Activities of households as employers	1	16	0.1	-	-	0.1	17
19	**Total**	**470**	**58,427**	**261**	**0**	**2**	**127**	**58,636**

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).

Table 27: Credit quality of exposures by geographical areas (EU CR1-C)

All figures in € million

	Significant geographical areas [1]	Gross carrying values of: Defaulted exposures	Gross carrying values of: Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs in the year 2020	Credit risk adjustment charges in the year 2020 [2]	Net values [3] (a + b - c - d)
		a	b	c	d	e	f	g
1	Euro area countries	116	47,826	140	-	0.1	68	47,801
2	thereof: Germany	10	21,391	38	-	-	19	21,363
3	thereof: France	-	7,868	10	-	-	5	7,857
4	thereof: Austria	-	6,838	1	-	-	0.3	6,837
5	thereof: Luxembourg	92	3,924	51	-	-	25	3,965
6	thereof: Spain	0.4	2,326	2	-	-	1	2,324
7	thereof: Italy	14	1,940	10	-	0.1	5	1,943
8	Other EU countries	191	4,398	68	-	1	33	4,520
9	thereof: Poland	-	1,666	5	-	-	3	1,661
10	thereof: United Kingdom	176	1,263	61	-	-	30	1,378
11	Rest of Europe	80	1,226	28	-	0.3	13	1,279
12	Africa	-	191	1	-	-	0.4	190
13	America	84	3,421	23	-	-	11	3,482
14	thereof: United States of America	84	2,966	22	-	-	11	3,028
15	Asia	-	416	-	-	-	-	416
16	Oceania	-	-	-	-	-	-	-
17	Other geographical areas [4]	-	949	-	-	-	-	949
18	**Total**	**470**	**58,427**	**261**	**0**	**2**	**127**	**58,636**

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".

Table 28: 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			on performing forborne exposures	on non-performing forborne exposures		thereof collateral and financial guarantees received on non-performing exposures with forbearance measures
				thereof defaulted	thereof impaired				
		a	b	c	d	e	f	g	h
1	Loans and advances	1,207	358	358	334	13	97	1,443	261
2	Central banks	-	-	-	-	-	-	-	-
3	General governments	26	-	-	-	-	-	26	-
4	Credit institutions	-	-	-	-	-	-	-	-
5	Other financial corporations	85	53	53	53	-	-	137	53
6	Non-financial corporations	1,096	306	306	281	12	97	1,280	209
7	Households	-	-	-	-	-	-	-	-
8	Debt securities	-	-	-	-	-	-	-	-
9	Loan commitments given	17	-	-	-	-	-	9	-
10	**Total**	**1,224**	**358**	**358**	**334**	**13**	**97**	**1,453**	**261**

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 (€ 10 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.

Table 29: 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								
			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	Of which defaulted
		a	b	c	d	e	f	g	h	i	j	k	l
1	Loans and advances	40,305	40,077	228	479	219	80	165	0.3	14	0.2	1	479
2	Central banks	-	-	-	-	-	-	-	-	-	-	-	-
3	General governments	10,989	10,989	-	-	-	-	-	-	-	-	-	-
4	Credit institutions	556	556	-	-	-	-	-	-	-	-	-	-
5	Other financial corporations	1,039	1,039	-	53	53	-	-	-	-	-	-	53
6	Non-financial corporations	27,708	27,480	228	425	166	80	165	0.2	14	-	-	425
7	thereof: SMEs	9,104	9,062	41.81	88	8	80	-	0.2	-	-	-	88
8	Households	13	13	0.1	1	0.1	0.02	0.1	0.1	0.1	0.2	1	1
9	Debt securities	9,003	9,003	-	-	-	-	-	-	-	-	-	-
10	Central banks	-	-	-	-	-	-	-	-	-	-	-	-
11	General governments	6,175	6,175	-	-	-	-	-	-	-	-	-	-
12	Credit institutions	2,766	2,766	-	-	-	-	-	-	-	-	-	-
13	Other financial corporations	62	62	-	-	-	-	-	-	-	-	-	-
14	Non-financial corporations	-	-	-	-	-	-	-	-	-	-	-	-

All figures in € million

	Counterparties [1] and instruments	Gross carrying amount / nominal amount of exposures [2) 3)] Performing exposures			Non-performing exposures								
			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	Of which defaulted
		a	b	c	d	e	f	g	h	i	j	k	l
15	Off-balance-sheet exposures	3,486			0.4								0.4
16	Central banks	-			-								-
17	General governments	161			-								-
18	Credit institutions	-			-								-
19	Other financial corporations	151			-								-
20	Non-financial corporations	3,174			0.4								0.4
21	Households	-			-								-
22	**Total**	**52,794**	**49,080**	**228**	**480**	**219**	**80**	**165**	**0.3**	**14**	**0.2**	**1**	**480**

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 (€ 10 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.

Table 30: 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 2020	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 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	o
1	Loans and advances	40,305	31,100	8,726	479	-	455	129	39	90	123	-	114	2	28,342	356
2	Central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	General governments	10,989	10,552	162	-	-	-	23	0.1	23	-	-	-	-	218	-
4	Credit institutions	556	556	-	-	-	-	-	-	-	-	-	-	-	556	-
5	Other financial corporations	1,039	708	331	53	-	53	3.2	0.7	3	-	-	-	-	1,011	53
6	Non-financial corporations	27,708	19,272	8,232	425	-	401	103	38	65	123	-	113	2	26,544	303
7	thereof: SMEs	9,104	6,452	2,497	88	-	88	34	13	21	23	-	23	-	9,002	66
8	Households	13	12	1	1	-	1	0.01	0.01	0.003	0.1	-	0.1	-	13	1
9	Debt securities	9,003	8,865	-	-	-	-	2	2	-	-	-	-	-	1,577	-
10	Central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	General governments	6,175	6,085	-	-	-	-	1	1	-	-	-	-	-	719	-
12	Credit institutions	2,766	2,721	-	-	-	-	0.3	0.3	-	-	-	-	-	857	-
13	Other financial corporations	62	59	-	-	-	-	-	-	-	-	-	-	-	-	-
14	Non-financial corporations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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 2020	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 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	o
15	Off-balance-sheet exposures	3,486	3,008	447	0.4	-	-	17	12	5	-	-	-	-	3,086	-
16	Central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	General governments	161	130	-	-	-	-	-	-	-	-	-	-	-	-	-
18	Credit institutions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	Other financial corporations	151	151	-	-	-	-	1	1	-	-	-	-	-	151	-
20	Non-financial corporations	3,174	2,727	447	0.4	-	-	16	11	5	-	-	-	-	2,935	-
21	Households	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	**Total**	**52,794**	**42,973**	**9,173**	**480**	**0**	**455**	**147**	**52**	**96**	**123**	**0**	**114**	**36**	**33,004**	**356**

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 (€ 10 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 € 58.4 billion and 99.2 % respectively as of the reporting date (31 December 2019: € 56.1 billion or 99.1 % 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 € 470 million as of 31 December 2020 (31 December 2018: € 510 million); of this figure, € 416 million is attributable to the IRB approach and € 54 million is attributable to the standardised approach. A stage 3 impairment of € 113 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 in conjunction with the EBA guidelines EBA/GL/2016/07 as well as the Delegated Regulation (EU) 2018/171 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 € 470 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 2019: 0.9 %); 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 2019: 1.2 %). 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 € 113 million as of 31 December 2020 (31 December 2019: € 55 million) and the gross carrying amount of the impaired exposures was € 455 million (31 December 2019: € 492 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".

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 € 708 million as of the reporting date (31 December 2019: € 550 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 (CRM) of the Group.

The gross carrying amount of the rescheduled (loans) and off-balance-sheet (loan commitments) receivables was stated as € 1,582 million as of the reporting date (31 December 2019: € 323 million); these mostly consist of standstill agreements and the suspension of contractual agreements. An impairment of € 110 million was created in relation to the rescheduled exposures. The rescheduled receivables accounted for approx. 3 % of the total gross carrying amounts (31 December 2019: approx. 1 %).

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 not 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 impair-ment stage 1 and 2.

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
- any forbearance measures were implemented for a performing financial instrument.

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. Also the forbearance criterion may be rebutted in justified individual cases.

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.

pbb Group made the change from Stage 1 to Stage 2 also when the change resulted from the current COVID-19-driven economic recession. If the credit risk of a financial asset 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 2020 and as of 31 December 2019.

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 loss-es 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 factors 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 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 an 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 con-sideration 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 unemployment rate, 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 the unemployment rate, 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 on the financial asset, therefore on the gross book value (book value before risk provision).

In determining point-in-time default probabilities, macroeconomic projections issued, for example, by the ECB or economic research institutions in relation to the unemployment rate and the gross domestic product are used. Only the forecast for the year 2021 is used for transactions included in Stage 1 allowances. The forecasts until the year 2024 are used for transactions of Stage 2 allowances. As from 2025, a model for convergence to the long-term average will be applied. In this respect, pbb Group refrained from smoothing out measurement parameters using long-term observations. In addition, pbb Group did not carry out any management overlays that would have been compatible with the recommendations of the IASB and the European supervisory authorities ESMA, EBA and ECB in March 2020, and that would have led to a reduc-tion in existing loss allowance.

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

Impairments of all three categories according to IFRS 9 on financial assets measured at fair value through other comprehensive income 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 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 of the valuation adjustment regulation of IFRS 9, and are shown on the liabilities side of the balance sheet, under the “Provisions”.

The following tables in accordance with article 442 letter i CRR in conjunction with EU CR2-A and EU CR2-B of the EBA/GL/2016/11 contain information regarding the exposure adjustments of 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.

Table 31: 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 01.01.2020**	**135**	**0**
1a	thereof: stage 1	26	-
1b	thereof: stage 2	46	-
1c	thereof: stage 3	55	-
1d	thereof: provisions in the lending business (off-balance sheet business)	8	-
2	Increases due to new business and acquisition	27	-
3	Decreases due to repayments and disposals	-11	-
4	Changes due to changed credit risk (net, additions less reversals)	111	-
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)	-2	-
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)	1	-
12	**Closing balance 31.12.2020**	**261**	**0**
12a	thereof: stage 1	41	-
12b	thereof: stage 2	90	-
12c	thereof: stage 3	113	-
12d	thereof: provisions in the lending business (off-balance sheet business)	17	-
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 32: 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 01.01.2020**	**510**
2	Loans and debt securities that have defaulted or impaired since the last reporting period [2]	32
3	Returned to non-defaulted status	-0.1
4	Amounts written off	-2
5	Other changes [3]	-70
6	**Closing balance 31.12.2020**	**470**

1) Gross carrying value before deduction of credit losses allowances on financial assets and provisions in the lending business, but after write-offs.
2) Gross carrying amount on the reporting date of the loans and bonds which defaulted in the reporting period.
3) Adjustment item for transfers to restructuring management in the reporting period less workouts/restructurings as well as repayments/redemptions.

In the financial year 2020, net payments of € 126 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) (2019: € 49 million net additions). The included additions to the provisions in lending business (or irrevocable loan commitments) amounted to € 9 million (2019: net additions of € 1 million).

Most of the net additions are attributable to financing without indicators for impaired creditworthiness in accordance with IFRS 9, i.e. from financial instruments of the valuation adjustment categories 1 or 2. In the financial year 2020, the criteria for changing from category 1 to category 2 were applied consistently with the previous years. The additional risk provisioning in particular reflects the deterioration in the economic situation, due to various factors, including the development in gross domestic product and the unemployment rate as well as the forecast as a result of the COVID-19 pandemic. The risk provisioning also includes the effect attributable to changing financing with a gross carrying amount of € 7.8 billion from the valuation adjustment category 1 to category 2. The pbb Group has carried out this category change although the change was mainly attributable to the current COVID-19-induced economic recession.

However, in the case of most of the affected financing arrangements, there is no evidence of any data for for instance significant financial difficulties of the issuer or the borrower. The net additions to value adjustments for category 3 financing instruments are almost exclusively attributable to loans for shopping malls in the United Kingdom, which also reflected the structural changes in retail.

The depreciation and consumption of value adjustments amounted to € 2 million in 2020 (2019: € 36 million). There was a cash inflow of € 1 million to be recognised in the income statement in relation to written down financial assets (2019: € 1 million).

Value adjustments in relation to financial assets amounted to a total of € 261 million as of 31 December 2020 (1 January 2020: € 135 million). This includes a figure of € 113 million (1 January 2020: € 55 million) relating to category 3 value adjustments and € 131 million (1 January 2020: € 72 million) for category 1 and 2 value adjustments. Provisions for off-balance-sheet lending business amounted to € 17 million (1 January 2020: € 8 million).

Total defaulted exposures (on the basis of gross carrying amounts) declined by a total of € 40 million as of 31 December 2020 compared with the end of the previous year, namely to € 470 million (31 December 2019: € 510 million). In Commercial Real Estate Finance (REF), two finance arrangements in a total amount of € 84 million were transferred to restructuring management of non-performing loans; one of these loans (€ 53 million) has already been fully repaid. This is opposed by successful workouts or partial restructurings as well as exchange-rate-related declines for loans denominated in GBP (€ 26 million). In Public Investment Finance (PIF), repayments of export guarantees for receivables backed by the Federal Republic of Germany, incl. currency effects in relation to finance arrangements extended in USD, resulted in a decline of € 45 million.

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 – in part on an IT-supported, automated basis – constantly monitors whether a trigger has been set off. In case of a corresponding indication, the credit exposure is analysed and presented to the Watchlist Committee. Taking into consideration the overall circumstances, the Watchlist Committee then decides whether a prompt transfer of the exposure to watchlist or restructuring and workout loans is appropriate. In this context, the financial instruments are reviewed for credit impairment.

Indicators for Watchlist and non-performing loans (restructuring and workout loans) include amongst others:

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 seg-ment).

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 regula-tory 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 nec-essary.

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 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.

Table 33: 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	11,925	28,618	26,356	1,797	-
1a	Total off-balance-sheet	424	3,014	2,223	19	-
2	Total debt securities	7,515	1,486	-	1,486	-
3	**Total exposures**	**19,864**	**33,118**	**28,578**	**3,303**	**0**
4	thereof: defaulted	0.4	356	301	53	-
5	Central governments and central banks	-	-	-	-	-
6	Institutions	-	-	-	-	-
7	Corporates	138	28,705	28,018	93	-
8	thereof: specialised lending	122	24,751	24,228	15	-
9	thereof: small and medium-sized enterprises (SME)	16	1,736	1,670	4	-
10	Retail	-	-	-	-	-
18	Equity	0.03	-	-	-	-
18a	Other non credit-obligation assets	94	-	-	-	-
19	**Total IRB approach**	**231**	**28,705**	**28,018**	**93**	**0**
20	Central governments or central banks	14,811	42	-	40	-
21	Regional governments or local authorities	6,103	8	-	8	-
22	Public sector entities	1,874	241	-	221	-
23	Multilateral development banks	760	38	-	38	-
24	International organisations	151	-	-	-	-
25	Institutions	54	1,073	-	1,073	-
26	Corporates	289	2,140	-	1,776	-
27	thereof: small and medium-sized enterprises (SME)	25	135	-	1	-
28	Retail	-	0.1	-	-	-
29	thereof: small and medium-sized enterprises (SME)	-	-	-	-	-
30	Secured by mortgages on immovable property	-	560	560	-	-
31	thereof: small and medium-sized enterprises (SME)	-	333	333	-	-
32	Exposures in default	0.4	54	1	53	-
33	Exposures associated with particularly high risk	10	256	-	-	-
34	Covered bonds	1,136	-	-	-	-
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	95	-	-	-	-
39	**Total standardised approach**	**25,287**	**4,413**	**561**	**3,209**	**0**
40	**Total**	**25,518**	**33,118**	**28,578**	**3,303**	**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 initially 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 of individual properties is sufficient.
- 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".

Assessment of real-estate collateral in the light of the Covid-19 pandemic

The outbreak of the new COVID-19 virus was declared to be a global pandemic by the World Health Organisation (WHO) on 11 March 2020. The effects of the virus infection and the measures designed to contain such effects are having a huge influence on the social structure and national and international economic activity. National as well as international real-estate markets are not able to escape the impact of this influence. There are already signs in certain markets of effects on market values, tenant and investor demand as well as investment activity. Further consequences will become evident in the market situation, also with a certain delay, depending on the further measures and the duration of the crisis.

In order to reflect this uncertainty regarding the development of market values, the following procedure in the monitoring process within the pbb Group has been applicable since April 2020 until further notice in accordance with article 208 sentence 3a CRR:

- Monthly monitoring in stage 2: There is a regular (more frequent) monitoring interval (monitoring L2) of one month for all commercial real estate. As a result of the currently stable market situation for residential real estate in Germany, the development of the rent and price level for existing properties (market monitoring) on the regional residential real-estate markets will be monitored monthly until further notice. If the rent and price levels indicate a decline in the market values, a representative residential sample will be monitored.
- The revaluation ("revaluation or stage 3 of monitoring") (internal/external) within the framework of monitoring is carried out, as is the case with the regular monitoring of properties described above, if a market decline of more than 10 % or other considerable deteriorations in the underlying valuation assumptions within the framework of monitoring stage 2 are identified. The revaluations continue to be carried out in accordance with the prevailing legal and market standard with due consideration being given to the prevailing market conditions.

For further information regarding measures of the pbb Group in response to the COVID-19 crisis, please refer to chapter 10 "Information regarding COVID-19 measures".

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 2020, the pbb Group had utilised derivative contractual netting agreements to the extent of € 1.2 billion (31 December 2019: € 1.5 billion) and had utilised security lending/repo transactions to the extent of € 0 million (31 December 2019: € 23 million). As of the reporting date 31 December 2020, the pbb Group had not agreed any security lending/repo transactions.

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 case of derivatives concluded with Eurex Clearing. 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 2020, there was a reduction totalling € 3.3 billion in the balance sheet total for the derivatives concluded via Eurex Clearing (31 December 2019: € 2.4 billion). For further information concerning on-balance-sheet netting, please refer to the notes of the annual report 2020, 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. In the pbb Group, 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 is also 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. For further information, please refer to chapter 5.6 “Counterparty credit risk”, section “Rating-based collateral service agreements”.

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 2020. 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 (RMC) 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 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”.

The net value of the on-balance-sheet and off-balance-sheet exposures amounted to a total of € 58,636 million as of 31 December 2020 (31 December 2019: € 56,441 million); of this figure, the standardised approach accounts for € 29,700 million or 51 % (31 December 2019: € 26,931 million or 48 %).

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)
- 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) 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 34: 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	14,854	-	17,051	-	97	1%
2	Regional governments or local authorities	5,993	118	7,023	69	548	8%
3	Public sector entities	2,061	53	1,860	17	143	8%
4	Multilateral development banks	798	-	760	-	-	-
5	International organisations	151	-	151	-	-	-
6	Institutions	1,127	-	54	-	13	24%
7	Corporates	2,183	247	415	148	541	96%
8	Retail	0.1	-	0.1	-	0.1	75%
9	Secured by mortgages on immovable property	519	40	519	20	219	41%
10	Exposures in default	54	0.4	1	0.4	2	116%
11	Exposures associated with particularly high risk	225	41	225	25	376	150%
12	Covered bonds	1,136	-	1,136	-	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	95	-	95	-	237	250%
17	**Total**	**29,201**	**499**	**29,294**	**280**	**2,318**	**8%**

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).

Table 35a: CRSA exposures before credit risk mitigation (EU CR5)

All figures in € million, unless otherwise stated

	Exposure classes Standardised approach	Risk weight																	
		0%	2%	4%	10%	20%	35%	50%	70%	75%	100%	150%	250%	370%	1.250%	Others	Deducted	Total [1]	Of which unrated [2]
		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r
1	Central governments or central banks	14,338	-	-	-	474	-	-	-	-	42	-	-	-	-	-	-	14,854	5,377
2	Regional governments or local authorities	3,663	-	-	-	2,352	-	20	-	-	16	-	-	-	-	-	-	6,052	1,535
3	Public sector entities	1,272	-	-	-	650	-	124	-	-	42	-	-	-	-	-	-	2,088	1,243
4	Multilateral development banks	760	-	-	-	-	-	-	-	-	38	-	-	-	-	-	-	798	-
5	International organisations	151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	151	-
6	Institutions	-	-	-	-	47	-	1,081	-	-	-	-	-	-	-	-	-	1,127	0.1
7	Corporates	13	-	-	-	223	-	-	-	-	2,096	-	-	-	-	-	-	2,331	2,096
8	Retail	-	-	-	-	-	-	-	-	0.1	-	-	-	-	-	-	-	0.1	0.1
9	Secured by mortgages on immovable property	-	-	-	-	-	337	203	-	-	-	-	-	-	-	-	-	540	540
10	Exposures in default	-	-	-	-	-	-	-	-	-	1	53	-	-	-	-	-	54	54
11	Exposures associated with particularly high risk	-	-	-	-	-	-	-	-	-	-	251	-	-	-	-	-	251	251
12	Covered bonds	-	-	-	886	250	-	-	-	-	-	-	-	-	-	-	-	1,136	-
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	-	-	-	-	-	-	-	-	-	-	-	95	-	-	-	-	95	-
17	**Total**	**20,197**	**0**	**0**	**886**	**3,996**	**337**	**1,428**	**0**	**0.1**	**2,238**	**304**	**95**	**0**	**0**	**0**	**0**	**29,480**	**11,099**

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.

Table 35b: CRSA exposures after credit risk mitigation (EU CR5)

All figures in € million, unless otherwise stated

	Exposure classes Standardised approach	Risk weight																	
		0%	2%	4%	10%	20%	35%	50%	70%	75%	100%	150%	250%	370%	1.250%	Others	Deducted	Total [1]	Of which unrated [2]
		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r
1	Central governments or central banks	16,575	-	-	-	474	-	-	-	-	2	-	-	-	-	-	-	17,051	5,377
2	Regional governments or local authorities	4,444	-	-	-	2,612	-	20	-	-	16	-	-	-	-	-	-	7,091	1,785
3	Public sector entities	1,272	-	-	-	531	-	74	-	-	-	-	-	-	-	-	-	1,877	1,124
4	Multilateral development banks	760	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	760	-
5	International organisations	151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	151	-
6	Institutions	-	-	-	-	47	-	8	-	-	-	-	-	-	-	-	-	54	0.1
7	Corporates	20	-	-	-	2	-	-	-	-	541	-	-	-	-	-	-	563	541
8	Retail	-	-	-	-	-	-	-	-	0.1	-	-	-	-	-	-	-	0.1	0.1
9	Secured by mortgages on immovable property	-	-	-	-	-	337	203	-	-	-	-	-	-	-	-	-	540	540
10	Exposures in default	-	-	-	-	-	-	-	-	-	1	0.4	-	-	-	-	-	1	1
11	Exposures associated with particularly high risk	-	-	-	-	-	-	-	-	-	-	251	-	-	-	-	-	251	251
12	Covered bonds	-	-	-	886	250	-	-	-	-	-	-	-	-	-	-	-	1,136	-
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	-	-	-	-	-	-	-	-	-	-	-	95	-	-	-	-	95	-
17	**Total**	**23,222**	**0**	**0**	**886**	**3,915**	**337**	**305**	**0**	**0.1**	**563**	**251**	**95**	**0**	**0**	**0**	**0**	**29,573**	**9,621**

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 approx. € 93 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, Moody’s and Fitch. 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 € 58,636 million (31 December 2019: € 56,441 million); of this figure, the IRB approach accounts for € 28,937 million or 49 % (31 December 2019: € 29,510 million or 52 %).

Approved IRB approaches

The pbb Group has received approval for applying the advanced IRB approach for the rating systems set out in the following.

With these IRBA rating systems, and as of 31 December 2020, the pbb Group achieves coverage of 78 % with regard to the exposure values (exposure at default, EAD) and 87 % 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.	Para-meter	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	
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 systems

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.

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 for the IRBA risk positions (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 and where it is headquartered, 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 € 28,106 million are spread over the corresponding countries as follows:

- Germany € 27,386 million or 97 %
- France € 411 million or 1 %
- United Kingdom € 308 million or 1 %
- Sweden € 0.8 million or < 0.01 %
- Spain € 0.1 million or < 0.01 %

Due to considerations of materiality, the pbb Group does not disclose the transactions recorded in France, Great Britain, Sweden and Spain in the tables; the percentage of these transactions in relation to the credit risk exposures is 1 % or less than 1 % in each case. Since the year 2016, pbb has been recording its new domestic and international business only in Germany.

Table 36a: IRBA exposures and PD ranges (EU CR6) – Total

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	1,107	37.8	50%	1,056	0.10%	59	9%	4	85	8%	0.1	——
23	0.15 to < 0.25	2,533	83	50%	2,569	0.20%	91	10%	4	300	12%	1	——
24	0.25 to < 0.50	7,688	405	70%	7,923	0.39%	247	21%	3	2,430	31%	6	——
25	0.50 to < 0.75	-	-	-	-	-	-	-	-	-	-	-	——
26	0.75 to < 2.50	9,611	911	69%	10,174	1.38%	229	26%	3	6,288	62%	37	——
27	2.50 to < 10.00	4,658	1,515	81%	5,761	3.84%	104	25%	3	4,378	76%	56	——
28	10.00 to < 100,00	113	-	-	113	14.34%	5	37%	1	154	136%	6	——
29	100.00 (Default)	416	-	-	416	100%	13	26%	1	260	62%	86	——
30	Subtotal	26,126	2,951	75%	28,012	2.97%	748	22%	3	13,896	50%	191	233
31	thereof: specialised lending												
32	0.00 to < 0.15	301	29	50%	316	0.09%	13	25%	3	63	20%	0.1	——
33	0.15 to < 0.25	1,559	80	50%	1,599	0.20%	34	15%	4	260	16%	0.5	——
34	0.25 to < 0.50	6,203	249	66%	6,335	0.39%	138	23%	3	2,120	33%	6	——
35	0.50 to < 0.75	-	-	-	-	-	-	-	-	-	-	-	——
36	0.75 to < 2.50	9,216	825	70%	9,731	1.39%	184	27%	3	6,203	64%	37	——
37	2.50 to < 10.00	4,605	1,515	81%	5,708	3.82%	97	25%	3	4,348	76%	55	——
38	10.00 to < 100,00	112	-	-	112	14.32%	3	37%	1	154	137%	6	——
39	100.00 (Default)	408	-	-	408	100%	8	26%	1	255	62%	84	——
40	Subtotal	22,404	2,698	76%	24,209	3.33%	477	25%	3	13,403	55%	188	228

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												
42	0.00 to < 0.15	49	1.9	50%	50	0.09%	24	3%	4	1	2%	0.001	—
43	0.15 to < 0.25	68	2	50%	68	0.20%	42	4%	4	3	5%	0.01	—
44	0.25 to < 0.50	1,046	112	82%	1,127	0.42%	86	4%	5	89	8%	0.2	—
45	0.50 to < 0.75	-	-	-	-	-	-	-	-	-	-	-	—
46	0.75 to < 2.50	331	86	62%	379	1.04%	38	10%	4	82	22%	0.4	—
47	2.50 to < 10.00	53	-	-	53	5.76%	5	21%	2	30	58%	1	—
48	10.00 to < 100,00	0.2	-	-	0.2	17.50%	1	8%	5	0.1	38%	0.003	—
49	100.00 (Default)	8	-	-	8	100%	4	26%	5	5	62%	2	—
50	Subtotal	1,555	201	74%	1,684	1.18%	200	6%	4	210	12%	3	4
51	thereof: purchased receivables	-	-	-	-	-	-	-	-	-	-	-	-
61	Retail	-	-	-	-	-	-	-	-	-	-	-	-
62	Equity	0.03	-	-	0.03	-	2	-	-	0.1	370%	0.001	—
63	thereof: internal model approach (IMA)	-	-	-	-	-	-	-	-	-	-	-	—
64	thereof: PD-/LGD approach	-	-	-	-	-	-	-	-	-	-	-	—
65	thereof: simple risk-weighting approach	0.03	-	-	0.03	-	2	-	-	0.1	370%	0.001	—
66	Other non credit-obligation assets	94	-	-	94	-	1	-	-	94	1	-	-
67	**Total IRB approach**	**26,220**	**2,951**	**75%**	**28,106**	**2.96%**	**751**	**22%**	**3**	**13,989**	**50%**	**191**	**233**

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).

Table 36b: 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	1,107	38	50%	1,056	0.10%	59	9%	4	85	8%	0.1	—
23	0.15 to < 0.25	2,443	83	50%	2,479	0.20%	90	9%	4	263	11%	0.5	—
24	0.25 to < 0.50	7,448	405	70%	7,683	0.39%	241	20%	3	2,351	31%	6	—
25	0.50 to < 0.75	-	-	-	-	-	-	-	-	-	-	-	—
26	0.75 to < 2.50	9,349	911	69%	9,912	1.38%	222	26%	3	6,105	62%	36	—
27	2.50 to < 10.00	4,623	1,515	81%	5,726	3.85%	103	25%	3	4,355	76%	55	—
28	10.00 to < 100,00	26	-	-	26	10.20%	3	44%	1	42	160%	1	—
29	100.00 (Default)	416	-	-	416	100%	13	26%	1	260	62.5%	86	—
30	Subtotal	25,413	2,951	75%	27,299	2.98%	731	22%	3	13,462	49%	185	231
31	thereof: specialised lending												
32	0.00 to < 0.15	301	29	50%	316	0.09%	13	25%	3	63	20%	0.1	—
33	0.15 to < 0.25	1,469	80	50%	1,509	0.20%	33	13%	4	222	15%	0.4	—
34	0.25 to < 0.50	5,963	249	66%	6,096	0.39%	132	23%	3	2,042	33%	6	—
35	0.50 to < 0.75	-	-	-	-	-	-	-	-	-	-	-	—
36	0.75 to < 2.50	8,954	825	70%	9,469	1.40%	177	27%	3	6,020	64%	36	—
37	2.50 to < 10.00	4,570	1,515	81%	5,673	3.83%	96	25%	3	4,325	76%	55	—
38	10.00 to < 100,00	26	-	-	26	10.00%	1	45%	1	42	164%	1	—
39	100.00 (Default)	408	-	-	408	100%	8	26%	1	255	62%	84	—
40	Subtotal	21,691	2,698	76%	23,496	3.35%	460	24%	3	12,969	55%	181	226

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												
42	0.00 to < 0.15	49	2	50%	50	0.09%	24	3%	4	1	2%	0.001	—
43	0.15 to < 0.25	68	2	50%	68	0.20%	42	4%	4	3	5%	0.01	—
44	0.25 to < 0.50	1,046	112	82%	1,127	0.42%	86	4%	5	89	8%	0.2	—
45	0.50 to < 0.75	-	-	-	-	-	-	-	-	-	-	-	—
46	0.75 to < 2.50	331	86	62%	379	1.04%	38	10%	4	82	22%	0.4	—
47	2.50 to < 10.00	53	-	-	53	5.76%	5	21%	2	30	58%	1	—
48	10.00 to < 100,00	0.2	-	-	0.2	17.50%	1	8%	5	0.1	38%	0.003	—
49	100.00 (Default)	8	-	-	8	100%	4	26%	5	5	62%	2	—
50	Subtotal	1,555	201	74%	1,684	1.18%	200	6%	4	210	12%	3	4
51	thereof: purchased receivables	-	-	-	-	-	-	-	-	-	-	-	-
61	Retail	-	-	-	-	-	-	-	-	-	-	-	-
62	Equity	0.03	-	-	0.03	-	2	-	-	0.1	370%	0.001	—
63	thereof: internal model approach (IMA)	-	-	-	-	-	-	-	-	-	-	-	—
64	thereof: PD-/LGD approach	-	-	-	-	-	-	-	-	-	-	-	—
65	thereof: simple risk-weighting approach	0.03	-	-	0.03	-	2	-	-	0.1	370%	0.001	—
66	Other non credit-obligation assets	86	-	-	86	-	1	-	-	86	1	-	-
67	**Total IRB approach**	**25,499**	**2,951**	**75%**	**27,386**	**2.97%**	**734**	**22%**	**3**	**13,548**	**49%**	**185**	**231**

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).

For IRBA positions (excl. counterparty credit risk exposures), the EAD amounted to € 28,106 million as of 31 December 2020 (31 December 2019: € 28,509 million), and the RWA amounted to € 13,989 million (31 December 2019: € 13,723 million).

The average RWA density for the IRBA loan receivables is 50 % across all IRBA exposure classes (31 December 2019: 48 %). 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 2020 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 2019: 22 %).

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 2.96 % (31 December 2019: 2.80 %).

The unutilised IRBA loan commitments amounted to a total of € 2,951 million (31 December 2019: € 3,258 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 75 % (31 December 2019: 79 %).

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. As of the reporting date, the RWA in the IRB approach amounted to € 13,989 million (31 December 2019: € 13,723 million), and are thus € 266 million higher than at the end of the previous year.

Table 37: 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 31.12.2019**	**13,723**	**1,098**
2	Asset size	682	55
3	Asset quality	312	25
4	Model updates	-	-
5	Methodology and policy	-	-
6	Acquisitions and disposals	-	-
7	Foreign exchange movements	-794	-63.5
8	Other	66	5
9	**RWA on 31.12.2020**	**13,989**	**1,119**

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

A major factor behind the increase of a total of € 266 million in the risk-weighted assets (RWA) is the new business in Commercial Real Estate Finance carried out in the financial year 2020, which exceeded the repayments and redemptions (line 2 of table EU CR8). A further factor were rating downgrades in the Real Estate Finance portfolio, particularly in the United Kingdom and the USA (line 3 of table EU CR8). This was opposed by currency effects in the United Kingdom (line 7 of table EU CR8).

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. The aim is to identify a new model landscape which considerably reduces the complexity. This model revision process is expected to be finalised in the course of 2021 and, due to the Covid-19 pandemic, a regulatory review necessary for the use of the models is expected to be carried out in the first quarter of 2022. 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).

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).

Table 38: Backtesting of probability of default per exposure class (EU CR9)

	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]
					End of previous year[5]	End of reporting year[6]		thereof new obligors[8]	
		S&P	31.12.2019	31.12.2019	31.12.2019	31.12.2020			
		a	b	c	d	e	f	g	h
1	Central governments and central banks		-	-	-	-	-	-	-
11	Institutions		-	-	-	-	-	-	-
21	Corporates								
22	0.00 to < 0.15	AAA to BBB+	0.09%	0.09%	60	53	-	-	0.00%
23	0.15 to < 0.25	BBB to BBB	0.20%	0.20%	104	90	-	-	0.00%
24	0.25 to < 0.50	BBB- to BB+	0.39%	0.39%	266	243	-	-	0.07%
25	0.50 to < 0.75	-	-	-	-	-	-	-	-
26	0.75 to < 2.50	BB to B+	1.33%	1.30%	218	220	-	-	0.37%
27	2.50 to < 10.00	B to B-	3.69%	3.75%	102	104	2	-	1.47%
28	10.00 to < 100.00	CCC+ to CCC-	10.06%	13.50%	5	5	-	-	4.00%
29	Subtotal (without default)		1.38%	1.14%	755	715	2	0	0.37%
30	100.00 (Default)		100%	100%	13	13	-	-	-
31	thereof: specialised lending								
32	0.00 to < 0.15	AAA to BBB+	0.09%	0.09%	12	13	-	-	0.00%
33	0.15 to < 0.25	BBB to BBB	0.20%	0.20%	41	34	-	-	0.00%
34	0.25 to < 0.50	BBB- to BB+	0.38%	0.39%	146	133	-	-	0.00%
35	0.50 to < 0.75	-	-	-	-	-	-	-	-
36	0.75 to < 2.50	BB to B+	1.35%	1.34%	163	176	-	-	0.58%
37	2.50 to < 10.00	B to B-	3.69%	3.80%	87	97	2	-	1.52%
38	10.00 to < 100.00	CCC+ to CCC-	10.04%	11.25%	2	3	-	-	0.00%
39	Subtotal (without default)		1.49%	1.42%	451	456	2	0	0.48%
40	100.00 (Default)		100%	100%	7	8	-	-	-

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]
					End of previous year [5]	End of reporting year [6]		thereof new obligors [8]	
		S&P	31.12.2019	31.12.2019	31.12.2019	31.12.2020			
		a	b	c	d	e	f	g	h
41	thereof: SMEs								
42	0.00 to < 0.15	AAA to BBB+	0.09%	0.09%	28	24	-	-	0.00%
43	0.15 to < 0.25	BBB to BBB	0.20%	0.20%	45	41	-	-	0.00%
44	0.25 to < 0.50	BBB- to BB+	0.42%	0.39%	89	87	-	-	0.24%
45	0.50 to < 0.75	-	-	-	-	-	-	-	-
46	0.75 to < 2.50	BB to B+	1.12%	1.16%	41	37	-	-	0.00%
47	2.50 to < 10.00	B to B-	3.93%	3.40%	10	5	-	-	0.65%
48	10.00 to < 100.00	CCC+ to CCC-	10.00%	10.00%	1	1	-	-	11.11%
49	Subtotal (without default)		1.08%	0.64%	214	195	0	0	0.20%
50	100.00 (Default)		100%	100%	4	4	-	-	-
51	Retail		-	-	-	-	-	-	-
52	Equity [10]		-	-	-	-	-	-	-
56	**Total IRB approach**								
57	**thereof: default**		**100%**	**100%**	**13**	**13**			
58	**thereof: non-default**		**1.38%**	**1.14%**	**755**	**715**	**2**	**0**	**0.37%**

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.

Table 39: 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
		31.12.2020	31.12.2019	31.12.2019	31.12.2019	31.12.2019
		a	b	c	d	e
1	Central governments and central banks	-	-	-	-	-
2	Institutions	-	-	-	-	-
3	Corporates	58.15%	755	13	18.57%	28.20%
4	thereof: specialised lending	16.73%	451	7	23.06%	31.18%
5	thereof: SMEs	-	214	4	12.07%	20.63%
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**	**58.15%**	**755**	**13**	**18.57%**	**28.20%**

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 two defaults in the reporting period. One new obligor, whose financing had not yet been established at the end of 2019, 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 year, there was a default of one customer who had had a credit conversion factor (CCF) of 50 % and who, one year before actually defaulting, had been granted a free line. In the year before default, there was a CCF of 86.96 % for this customer.

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 x PD x 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 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 40: Expected and incurred losses in the lending business per exposure class (EU CR9)

All figures in € million

	Exposure classes IRB approach	Expected loss [1)] 31.12.2019	Incurred loss [2)] (IFRS 9) 2020	Expected loss [1)] 31.12.2018	Incurred loss [2)] (IFRS 9) 2019	Expected loss [1)] 31.12.2017	Incurred loss [2)] (IFRS 9) 2018
		a	b	c	d	e	f
1	Central governments and central banks	-	-	-	-	-	-
2	Institutions	-	-	-	-	-	-
3	Corporates	93	57	52	33	59	24
4	thereof: specialised lending	90	57	49	33	53	23
5	thereof: small and medium-sized enterprises (SME)	3	-	3	-	4	1
6	Retail	-	-	-	-	-	-
7	Equity	-	-	-	-	-	-
8	**Total**	**93**	**57**	**52**	**33**	**59**	**24**

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 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 € 57 million (net additions of stage 3 impairments). The actually incurred loss in the financial year 2020 is thus lower than the figure of € 93 million expected at the end of 2019.

The expected loss for real estate financing loans as of 31 December 2020 for a period of one year - excluding defaulted and impaired non-performing loans of impairment stage 3 - amounted to € 105 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 1.5 % on average.

5.6 Counterparty credit risk

The counterparty credit risk (CCR) defines the risk of default of the counterparty of a transaction before the final settlement of the payments associated with this transaction.

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 2020 (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. However, as of the reporting date 31 December 2020, the pbb Group had not agreed any security lending/repo transactions.

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 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.

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 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).

Table 41: 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	2,388	1,168	1,220	1,051	169
1a	Interest risk rate	2,326				
1b	Foreign exchange rate risk	37				
1c	Exchange/ index-related risk	-				
1d	Credit derivatives	-				
1e	Commodity-based risk	-				
1f	Others [4]	25				
2	Securities financing transactions (SFT) [5]	-	-	-	-	-
3	Cross-product netting [6]	-	-	-	-	-
4	**Total**	**2,388**	**1,168**	**1,220**	**1,051**	**169**

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) Cross currency basis swaps (hedging of interest and exchange rate risks)
5) 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 CRR
6) pbb Group does not apply cross-product netting (e.g. derivatives and securities financing transactions).

Table 42: 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	-	1,128	-	1,961	-	-
2	thereof: EUR	-	1,096	-	1,900	-	-
3	thereof: USD	-	32	-	-	-	-
4	thereof: GBP	-	-	-	61	-	-
5	thereof: CHF	-	0.2	-	-	-	-
6	Securities	-	-	37	-	-	-
7	**Total**	**0**	**1,128**	**37**	**1,961**	**0**	**0**

1) Total collateral received / posted as of 31 December 2020.
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 € 2,388 million as of 31 December 2020 (31 December 2019: € 2,916 million). The decline of € 528 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. In the financial year 2020, 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 € 2,388 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 € 1,168 million.

The pbb Group has concluded collateral agreements with its business partners to hedge the net receivable in the amount of € 1,220 million remaining after netting. Most of the eligible collateral received (€ 1,051 billion) is in the form of cash collateral. Overall, the pbb Group has received collateral in the amount of € 1,128 million. By hedging, the credit risk and the net default risk respectively is reduced to € 169 million (31 December 2019: € 182 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.

Table 43: 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	———	163	214	———	———	377	268
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)	———	———	———	———	———	-	-
10	VaR for SFTs	———	———	———	———	———	-	-
11	**Total**	———	———	———	———	———	———	**268**

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 44: 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:	103	2
3	i) OTC derivatives	103	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	-	-

All figures in € million

	Exposures to central counterparties (CCP)	EAD post CRM 1)	Risk-weighted assets (RWA)
		a	b
17	Segregated[2] initial margin	-	—
18	Non-segregated[3] initial margin	-	-
19	Prefunded default fund contributions	-	-
20	Unfunded default fund contributions	-	-

1) Regulatory exposure value (exposure at cefault, 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 € 480 million at the end of 2020 (31 December 2019: € 522 million); of this figure, € 103 million (31 December 2019: € 101 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 of an IRBA credit risk exposure to the rating systems are explained in the chapter 5.5 “IRB approach”.

Table 45: 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	l	m
1	Central governments or central banks	-	-	-	-	-	-	-	-	-	-	-	-	-
2	Regional governments or local authorities	1	-	-	-	-	-	-	-	-	-	-	1	1
3	Public sector entities	0.2	-	-	-	-	-	-	-	-	-	-	0.2	0.2
4	Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-	-	-
5	International organisations	-	-	-	-	-	-	-	-	-	-	-	-	-
6	Institutions	-	103	-	-	19	185	-	-	-	-	-	307	107
7	Corporates	24	-	-	-	-	-	-	-	6	-	-	30	6
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**	**26**	**103**	**0**	**0**	**19**	**185**	**0**	**0**	**6**	**0**	**0**	**339**	**115**

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 46: 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	4	0.10%	4	56%	5	2	56%
23	0.15 to < 0.25	18	0.20%	10	56%	4	13	69%
24	0.25 to < 0.50	25	0.40%	42	56%	3	20	80%
25	0.50 to < 0.75	-	-	-	-	-	-	-
26	0.75 to < 2.50	66	1.39%	50	56%	3	85	129%
27	2.50 to < 10.00	28	3.63%	18	56%	3	46	160%
28	10.00 to < 100.00	0.02	10.00%	1	56%	1	0.04	204%
29	100.00 (Default)	-	-	-	-	-	-	-
30	Subtotal	142	1.47%	125	56%	3	166	117%

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
31	thereof: specialised lending							
32	0.00 to < 0.15	2	0.09%	3	56%	4	1	50%
33	0.15 to < 0.25	12	0.20%	9	56%	4	9	76%
34	0.25 to < 0.50	24	0.39%	41	56%	3	19	82%
35	0.50 to < 0.75	-	-	-	-	-	-	-
36	0.75 to < 2.50	66	1.39%	50	56%	3	85	129%
37	2.50 to < 10.00	23	3.04%	17	56%	4	37	163%
38	10.00 to < 100.00	0.02	10.00%	1	56%	1	0.04	204%
39	100.00 (Default)	-	-	-	-	-	-	-
40	Subtotal	126	1.36%	121	56%	3	151	120%
41	thereof: SMEs							
42	0.00 to < 0.15	-	-	-	-	-	-	-
43	0.15 to < 0.25	-	-	-	-	-	-	-
44	0.25 to < 0.50	1	0.45%	1	56%	1	1	54%
45	0.50 to < 0.75	-	-	-	-	-	-	-
46	0.75 to < 2.50	-	-	-	-	-	-	-
47	2.50 to < 10.00	6	6.00%	1	56%	2	9	152%
48	10.00 to < 100.00	-	-	-	-	-	-	-
49	100.00 (Default)	-	-	-	-	-	-	-
50	Subtotal	7	5.05%	2	56%	2	9	135%
51	Retail	-	-	-	-	-	-	-
52	Equity	-	-	-	-	-	-	-
56	**Total**	**142**	**1.47%**	**125**	**56%**	**3**	**166**	**117%**

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-Risiko

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 47: 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	204	181
EU4	Based on the original exposure method	-	-
5	**Total subject to the CVA capital charge**	**204**	**181**

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 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. However, as of the reporting date, the collateral agreements do not have any provision for threshold amounts according to which pbb would have to make a correspondingly higher collateral contribution in the event of an adjustment to the threshold amount.

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 48: Threshold amounts and minimum transfer amounts in the derivatives business

All figures in € million

	Threshold amounts	Minimum transfer amounts
Deutsche Pfandbriefbank AG	-	22
Total	**0**	**22**

The figure of € 22 million (31 December 2019: € 34 million) in the above table comprises the minimum transfer amounts which are agreed in the collateral agreements and which are still relevant in conjunction with current ratings. In a small number of cases, these amounts depend on the rating. No threshold amounts have been agreed at present. The impact of a rating downgrade on the liquidity of the pbb Group is accordingly not material. 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. The regulatory and economic conditions which are continuing to change, as well as possible turmoil, for instance in connection with Brexit or the COVID-19 pandemic, may result in pressure on ratings going forward.

Table 49: 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 "Economic capital and risk-bearing capacity"). In all other respects, the methods of regulatory large credit management are applicable. Risk Management & Control (RMC) 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.

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 as of 31 December 2020 are detailed in the notes to the annual report 2020 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 2020, the pbb Group did not have any non-consolidated subsidiaries (unchanged compared to the previous year).

Associated companies

As of 31 December 2020 (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 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 50: 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	-	-	-
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. As was the case at the previous year's end, the carrying amounts of the companies in the regulatory consolidation scope (excl. pbb itself) are stated as a total of € 14 million (31 December 2019: € 14 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 2020, 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 2020.

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 2020 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 2020, 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 2020, there were no changes in the regulatory and also in the accounting scope of consolidation of the pbb Group.

5.8 Securitisations

As of the reporting date 31 December 2020, the pbb Group does not have any exposures in relation to securitisations in the portfolio. A disclosure in accordance with article 449 CRR is thus not relevant for the pbb Group.

As described in the Disclosure Report as of 31 December 2019 (chapter 5.8 “Securitisations”), the last remaining securitisation transaction expired and was repaid on 20 March 2020. There are no plans for any new securitisations of own receivables for the financial year 2021. According to the pbb Group’s business strategy, new securitisations are not a company objective.

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).

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 monitoring of interest rate risk of quarterly net interest income.
- Besides interest rate risks in the banking book, credit spread risks in the banking book (CSRBB) are included in the regular risk measurement, controlling and monitoring as well.

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, in-cludes:

- 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.

pbb provides quarterly reports on changes in effects on income, and effects on accumu-lated other comprehensive income (recognised directly in equity), given pre-defined inter-est rate scenarios and assuming a dynamically changing balance sheet, to monitor inter-est rate risk for the period.

Risk quantification – Market risk measurement and limits

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. The essential parameters of the market risk VaR model can be summarised as follows:

- The simulation model is based on a one-year market data history which is included in the simulation on an equally weighted basis.
- 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 one day and a 99 % confidence interval.

As at 31 December 2020, market risk VaR amounted to € 51 million, taking diversification effects between the individual market risk types into consideration (31 December 2019: € 65 million). The decline was largely due to an adjustment carried out to the VaR model on 16 March 2020. The reduction of the holding period from ten days to one day to avoid autocorrelation effects deserves particular mention here and increased granularity of the credit spread risk factors in relation to country, sector, rating class and term. On the other hand, increased market volatility on the back of the COVID-19 pandemic has led to higher VaR indicators. The VaR limits were recalibrated accordingly in the course of adjusting the VaR model. Accord-ingly, the total market risk VaR limit was reduced from € 120 million (as at year-end 2019) to € 100 million (as at year-end 2020).

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 € 17 million and CSRBB VaR amounted to € 48 million (both as at year-end 2020). As well as limiting market risk VaR, specific limits have been monitored daily for IRRBB VaR (limit as at the 2020 year-end: € 30 million) and CSRBB VaR (limit as at the 2020 year-end: € 90 million).

During the reporting period, market turbulence – particularly in March 2020 – led to significantly higher credit spread volatility, which resulted in a significant increase in market risk VaR. As a result, the market risk VaR limits were exceeded at pbb Group level between 16 and 23 March 2020, which was resolved by further recalibrating the VaR limits within the scope of the existing risk appetite determined in the risk strategy. The new VaR limits now reflect the higher level of market volatility.

The VaR assessment is complemented by additional tools, such as sensitivity analyses and stress testing.

Sensitivity analyses

Overnight yield curves are used for the purposes of measurement relevant to sensi-tivity 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 econom-ic present value which results from a, isolated one basis point increase in the credit spreads which are relevant for measurement purposes.

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 (€ 3 million) and cross-currency spread risks (€ 2 million) were shown at the reporting date.

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 as well as 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 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 select-ed internal and external stress scenarios have also been monitored through specific limits or triggers.

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 trad-ing days are counted. As at end of 2020, based on a data history of 250 trading days, a total of three outli-ers were observed, all of which occurred before the aforementioned adjustment of the VaR model. The risk model employed by pbb Group therefore has “green” status, as defined in the “traffic light” system of the Basel Capital Accord.

Periodic interest rate risks

pbb uses a dynamic model for measuring and monitoring period 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. Meas-urement and monitoring of periodic interest rate risks was carried out at the end of each quarter, for a simu-lation 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

Details for calculating the economic capital from market risks as well as the quantification of economic capital from market risks are described in chapter 4.3 “Economic capital and risk-bearing capacity” (ICAAP).

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 recog-nised on the balance sheet.

Risk management, monitoring and reduction

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 € 17 million as at year-end 2020 and was thus below the figure seen at year-end 2019 (€ 40 million). The decline is primarily attribut-able to the above-mentioned reduction of the holding period from ten days to one day.

Volatility risk

Volatility risk amounted to € 1 million as at end of December 2020 (end of 2019: € 2 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 sys-tems in place for calculating credit spread risk for all relevant exposures. The VaR limit applies 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). In addition, the credit spread risks of those securities held as assets are measured at amortised cost. The credit spread risk amounted to € 48 million as at the end of December 2020 (year-end 2019: € 64 million). The reduction in credit spread VaR was primarily caused by the above-mentioned adjustment of the VaR model in March 2020.

Foreign currency risks

The present value of foreign currency risk amounted to € 1 million as at end of 2020 (year-end 2019: € 1 million).

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, 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 exam-ple.

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 € 8 million as of the reporting date (31 December 2019: € 12 million).

Table 51: 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	98	8
4	Commodity risk	-	-
	Options		
5	Simplified approach	-	-
6	Delta-plus method	-	-
7	Scenario approach	-	-
8	Securitisation (specific risk)	-	-
9	**Total**	**98**	**8**

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 ECB and 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, pbb also considers the periodic interest rate risks in addition to the present-value interest rate risks, and measures, manages and monitors these risks on a regular basis.

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 0.9 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 □ NII in the following table “Present-value interest rate risk and change in the net interest income in the banking book”.

In addition, the dynamic earnings model is used for managing the periodic interest rate risk (in accordance with EBA/GL/2018/02). Contrary to the static net interest income, a constant balance sheet total is not assumed in this case; 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 1 January 2020 to 31 December 2020, the triggers were complied with at all times in eight different interest stress scenarios of pbb (incl. the scenarios specified by the EBA).

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 the EBA guidelines EBA/GL/2018/02.

Table 52: Present-value interest rate risks in the banking book according to currencies

All figures in € million, unless otherwise stated

		Present value change 31.12.2020		Present value change 31.12.2019	
	Supervisory standard test by currencies	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	64	-316	102	-229
2	USD	29	-16	41	-11
3	SEK	3	-1	-	-
4	CHF	-	-	-	-
5	GBP	28	-6	38	-
6	JPY	-	-	-	-
7	Other [1]	-	-	-	-
8	**Total**	**124**	**-340**	**181**	**-241**

All figures in € million, unless otherwise stated

Supervisory standard test by currencies		Present value change 31.12.2020		Present value change 31.12.2019	
		Decline in interest - 200 Bp	Increase in interest + 200 Bp	Decline in interest - 200 Bp	Increase in interest + 200 Bp
		a	b	c	d
9	Total capital (TC)	3,798	3,798	3,733	3,733
10	**Present value change in % of total capital**	**3.3%**	**9.0%**	**4.8%**	**6.5%**

1) Foreign currencies with intangible present-value changes in the stress case (where relevant) are summarised under the heading “Other”.

Table 53: 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)	
		31.12.2020	31.12.2019	31.12.2020	31.12.2019
		a	b	c	d
1	Parallel up	-340	-241	150	2
2	Parallel down	61	181	31	8
3	Steepener	1	-8	—	—
4	Flattener	-1	3	—	—
5	Short rate up	-125	-67	—	—
6	Short rate down	61	86	—	—
7	**Maximum**	**-340**	**-241**		
8	Tier 1 capital (T1)	3,152	3,109	—	—
9	**Present value change in % of tier 1 capital**	**10.8%**	**7.8%**	—	—

1) Δ EVE: Parameter for changes in the present value of all interest-sensitive instruments in the banking book resulting from sudden interest rate movements, on the assumption that all positions in the banking book expire without replacement.

2) Δ NII: The change in NII is an earnings-based parameter and measures the change in net interest income resulting from a sudden interest rate movement within the following four quarters. The detailed Δ NII figures related to a parallel shift of +/- 200 basis points in the rate structure curves.

Overall, as of 31 December 2020, 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 € 340 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 2020, the change in delta static NII amounted to a total of € 150 million in the case of a parallel shift of + 200 basis points in the rate structure curves, and amounted to € 31 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). The increase in the delta is mainly due to the participation of pbb in the ECB series of targeted longer-term refinancing operations III (TLTRO III) and the associated special conditions as well as the associated considerable increase in cash reserve. 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 adequacy assessment 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 mod-ules (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 Manage-ment Board.

Organisation

RMC identifies, measures, reports and monitors liquidity risk. The Treasury department, which is independ-ent 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 calcu-lated 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 to the 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 limits

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 projec-tions assume

- unchanged market and funding conditions (base scenario),
- a risk scenario (modified [historic] stress scenario) and
- liquidity stress ([historic] stress scenario).

For instance, the risk and the [historic] stress scenario simulate possible client behaviour in “stress situa-tions”. Historic time series are used to calculate 95 % and 99 % quantiles.

Liquidity risk triggers (early warning indicators) have been defined for a 24-month horizon in the base sce-nario. Limits in the risk and the [historic] stress scenario are applicabel for a six- respectively three-month horizon.

The limit system consists of:

- limits relating to the liquidity stress profile (risk scenario and [historic] stress scenario); and
- triggers for the base scenario as well as the six-month bucket of [historic] stress-scenario.

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 Su-pervisory Team (JST) of ECB and national competent authorities.

Risk monitoring and 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 man-agement 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 € 5.7 billion in the base scenario over a 12-month horizon, which is described in chapter 7.2 “Development of liquidity risks”, section “Development of risk positions within pbb Group”, as of 31 December 2020 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 “Development of liquidity risks” in the section “Anticipated 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 2020 amounted to € 5.7 billion for a 12-month horizon in the base scenario – a € 0.7 billion decrease compared to the previous year (based on the same projection horizon). As at 31 December 2020, the cumulative liquidity position for a six-month horizon amounted to € 2.8 billion in the risk scenario (31 December 2019: € 2.9 billion). The cumulative liquidity position in the stress scenario for a six-month horizon amounted to € 1.4 billion as of 31 December 2020 (31 December 2019: € 1.0 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 2020 were at any time clearly in excess of 100 %. The Liquidity Coverage Ratio as at 31 December 2020 was 279 %. Weitere detaillierte Informationen hierzu finden sich im Kapitel 7.3 „Liquiditätsdeckungsquote“.

Funding markets

Please refer to the chapter Development in financial position in the Report on the Economic position, for details concerning developments on funding markets and changes in pbb's funding volumes during the period under review.

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, negotiations on Brexit, COVID-19 pandemic 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 funding risk as part of the business and strategic risk is described in chapter 4.3 "Economic capital and risk-bearing capacity" (ICAAP).

Market liquidity risk

For financial instruments, quantitative details for a better assessment of market liquidity risk can be ob-tained from the presentation of the three levels of the fair value hierarchy in the notes. 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 in-cluded 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 %.

According to the Delegated Regulation (EU) 2015/61, a minimum value of 100 % is applicable for the liquidity coverage ratio. As was the case in the previous year, the figures for 2020 determined for the pbb Group were considerably higher than 100 %. The liquidity coverage ratio was 279 % as of 31 December 2020 (31 December 2019: 182 %).

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 2020. 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.

Table 54: 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:	31.12.2020	30.09.2020	30.06.2020	31.03.2020	31.12.2020	30.09.2020	30.06.2020	31.03.2020
	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)	—	—	—	—	5,292	4,924	4,961	5,329
Cash-outflows									
2	Retail deposits and deposits from small business customers	706	722	739	758	145	147	150	153
3	Stable deposits	-	-	-	-	-	-	-	-
4	Less stable deposits	701	718	736	756	140	144	147	151
5	Unsecured wholesale funding	626	576	648	699	436	373	436	505
6	Operational deposits (all counterparties) and deposits in networks of cooperative banks	-	-	-	-	-	-	-	-
7	Non-operational deposits (all counterparties)	395	414	427	460	205	211	215	266
8	Unsecured debt	231	162	221	239	231	162	221	239
9	Secured wholesale funding	—	—	—	—	-	-	-	-
10	Additional requirements	446	451	459	463	446	451	459	463
11	Outflows related to derivative exposures and other collateral requirements	446	451	459	463	446	451	459	463
12	Outflows related to loss of funding on debt products	-	-	-	-	-	-	-	-
13	Credit and liquidity facilities	-	-	-	-	-	-	-	-
14	Other contractual funding obligations	67	61	46	66	51	45	30	51
15	Other contingent funding obligations	3,915	4,113	4,342	4,487	1,091	1,160	1,278	1,366
16	**Total cash outflows**	—	—	—	—	**2,171**	**2,177**	**2,352**	**2,537**
Cash-inflows									
17	Secured lending (e.g. reverse repos)	42	42	-	-	-	-	-	-
18	Inflows from fully performing exposures	505	359	267	203	310	234	194	173
19	Other cash inflows	200	190	186	191	200	190	186	191
EU-19a	(Difference between total weighted inflows and total weighted out-flows 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**	**748**	**591**	**453**	**395**	**510**	**424**	**380**	**364**
EU-20a	Fully exempt inflows	-	-	-	-	-	-	-	-
EU-20b	Inflows subject to 90% cap	-	-	-	-	-	-	-	-
EU-20c	Inflows subject to 75% cap	748	591	453	395	510	424	380	364
21	**Liquidity buffer**	—	—	—	—	**5,292**	**4,924**	**4,961**	**5,329**
22	**Total net cash outflows**	—	—	—	—	**1,660**	**1,753**	**1,972**	**2,173**
23	**Liquidity Coverage Ratio (in %)**	—	—	—	—	**325%**	**297%**	**263%**	**251%**

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. On 18 October 2021, the LCR amounts were corrected. The original publication of the Disclosure Report as of 31 December 2020 of 13 April 2021 was accordingly replaced.

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 the disclosure date 31 December 2020, the liquidity reserves amounted to € 5,292 million (average value), consisting of highly liquid level 1 assets. Level 1 assets comprise deductible deposits with the Deutsche Bundesbank, bonds issued by central governments, regional or local authorities, public bodies, multilateral development banks or international organisations as well as credit institutions with government backing.

In 2020, 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 € 446 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 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”. pbb recognises the following risks within the operational risk category: legal risk, behavioural risk, reputational risk, out-sourcing 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 record-ing 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, whilst the IT division is responsible for managing ICT systems risk.

Compliance and RMC form the second line of defence, together with further functions of pbb Group, such as Outsourcing Risk Management in Finance, the Information Security Office in the Corporate Office, Business Continuity Management and IT Risk Management in IT. Within RMC, the Operational Risk unit is responsi-ble for uniform procedures and methods for identifying, assessing, quantifying, monitoring and reporting 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 compre-hensive 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. Opera-tional 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 are 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 of the HGB if (a) an obligation of pbb Group is more probable than not, (b) the outflow of resources to meet this obligation is probable and (c) an estimate can be made con-cerning 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 and provisions 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

Chapter 4.3 “Economic capital and risk-bearing capacity” (ICAAP) provides details concerning the quantification of the operational risk including the legal risk as well as the calculation results for the economic capital for operational risk.

The regulatory capital backing for operational risk, which is calculated annually at the end of each year, amounted to € 70 million as of 31 December 2020 in accordance with the standrd approach as per article 317 et seq. CRR (€ 70 as of 31 December 2019); it is described in greater detail in the following chapter 8.3 “Capital 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 € 1 million from operational risks during 2020 (2019: € 8 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 compared with the previous year's end, 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 2020 (31 December 2019: € 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. Therefore, a disclosure in accordance with article 454 CRR is not relevant for the pbb Group.

9 Sustainability risks

According to the "information sheet regarding the handling of sustainability risks" of the BaFin of 20 December 2019 (amended on 13 January 2020), sustainability risks (environmental, social and governance risks, ESG risks) are defined as events or conditions relating to environmental, social or governance aspects, the occurrence of which may actually or potentially have negative effects on the net assets, financial position and results of operations as well as the reputation of an enterprise. It is accordingly to be understood as the risk of negative effects which result from climate change and the violation or inadequate recognition of social as well as sustainability aspects during the exercising of the business activity of the pbb Group.

Sustainability strategy

pbb is a leading specialist bank for the financing of investments in commercial real estate and public infrastructure in Europe and the USA. As a financing partner for the real-estate sector and the public sector, it performs an important macro-economic function as well as for the real economy. At the same time, pbb is one of the largest Pfandbrief issuers in terms of the volume of outstanding Pfandbriefe, and is thus also an important issuer of covered bonds in Europe. In this way, it pools resources for lending and transforms illiquid loans with concentrated risks into investment opportunities with a diversified risk structure and high fungibility.

When carrying out its business activities, pbb Group is responsible for its environment:

- Employees
- Clients and banking partners
- Equity and debt investors
- Service providers and suppliers
- Society and the environment.

Sustainability is our guiding principle. pbb Group defines sustainability as the self-conception, that its own actions provide an essential contribution to securing a long-term future and to consider the consequences for all stakeholders and the environment. pbb Group is convinced that law-abiding and honest conduct, responsible corporate governance, and adherence to high ethical principles are essential prerequisites for sustainability. pbb Group aims to combine ongoing economic success with sustainability aspects in the best way possible, thereby creating long-term value for all stakeholders, establishing benefits to society, and protecting natural resources. Given ongoing changes of markets and stakeholder requirements, pbb Group deems a regular and open dialogue to be essential for identifying the needs of all stakeholder groups at an early stage, and being able to include these needs in decision-making processes.

For pbb Group, the active support of the development process towards sustainability is of special concern. That is why pbb Group's sustainability strategy is designed to continuously strengthen and extend sustainability awareness by implementing appropriate measures, as well as embedding sustainability aspects as an integral element within the company. pbb Group makes an express commitment to the Paris Agreement, aiming to contribute to reaching the climate goals.

The sustainability strategy focuses on aspects which, on the one hand, have a material impact on pbb Group's business activities and business success, and which pbb Group, on the other hand, can itself significantly influence. Such material aspects are determined via a materiality analysis. In 2020, the materiality analysis performed in the previous year was reviewed as to its validity, and adjusted. For further information regarding the sustainability analysis, please refer to the non-financial report in the annual report 2020 of the pbb Group, published on the website of pbb.

Risk management

All potential risks are identified, analysed and monitored within the framework of the group-wide risk management and risk controlling system implemented in the pbb Group. In 2020, ESG risks were explicitly embedded in the business and risk strategy. The risks are defined in the risk inventory of the pbb Group, and are assessed annually. All components, i.e., the environmental risk, the social risk and the governance risk, are taken into consideration. ESG risks are overall classified as material. However, they are already covered by the other risk types, the business and strategic risk, the operational risk, the market or the credit risk.

As of the reporting date, the pbb Group had not yet defined independent quantitative indicators for ESG risks. However, the pbb Group intensively addresses the sustainability issues and participates in the survey of the ECB regarding the plans of the institutes in relation to the implementation of the expectations specified in the “Guideline for climate and environment risks” of November 2020. The pbb Group aims to define one or more performance indicators in 2021 or 2022.

The pbb Group aims to take account of sustainability aspects in all business activities and to minimise the risk of negative consequences resulting from ESG risks.

Managing the environmental risk focuses on two main aspects: climate-related/environmental risks directly linked to pbb, and aspects linked to the financed real estate properties, whereby physical and transitory risks are considered. Managing the social and governance risk is mainly based on the Code of Conduct which determines the binding ethical and legal framework governing conduct within pbb Group together with its dealings concerning clients, business partners, competitors, and the general public. A Human Rights Guideline stipulates the additional indispensable principles for respecting and adhering to human rights. In addition, pbb Group has created a Code of Conduct for suppliers. These relevant principles are reflected in our organisational, management, and control structures, as well as in our guidelines, instructions, and processes.

A system has been established to monitor the various ESG risk aspects, including risk indicators, as well as amber and red threshold values. As such, an eye is kept on employees’ use of resources (e.g. electricity, paper, company cars) and on business travel (e.g. train and air travel) to monitor the environmental risk, whilst indicators on diversity, operational safety, and personnel development have been established to monitor the social risk; and governance risk is monitored by compliance-relevant cases. Adherence to the self imposed internal targets can be monitored by the amber and red threshold values determined for the risk indicators.

Both the risk indicators and the internal targets for the various aspects of ESG risk are continuously developed, enhanced and specified.

Risk indicator reporting is performed within the scope of the Key Risk Indicator (KRI) report for non-financial risks to the Management Board and division heads on a quarterly basis. In addition, existing sustainability benchmarks in the form of external sustainability ratings are likewise an integral part of regular internal reporting to the Bank's management.

Given its key importance for pbb Group, the risk management function is anchored as an integral component of the Group, both in terms of organisation and concerning processes.

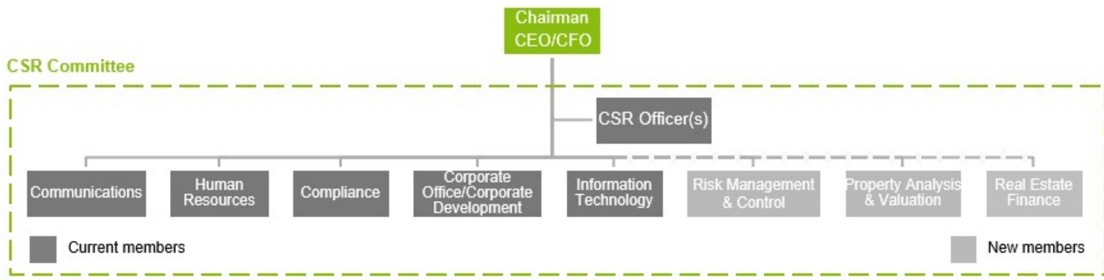
CSR Committee and Corporate Governance Officer

Established in 2017, the CSR Committee is a vital instrument for embedding sustainability topics in pbb Group. Internal rules of procedure determine the purpose and scope of action of the Committee.

The Management Board appoints the CSR Committee members. The Committee comprises of the division heads of Communications, Compliance, Corporate Office/Corporate Development, Human Resources, Information Technology and the CSR Officer appointed by the CSR Committee. In 2020, the decision was made to expand the CSR Committee to include members of the Risk Management & Control, Property Analysis & Valuation and Real Estate Finance departments. The new composition is designed to take account of the sustainability requirements in pbb’s core business, but also in the management of ESG risks.

Membership is linked to the respective function, ensuring that the different divisions are always represented within the Committee. The division head of Communications is the chairman of the CSR Committee.

Figure 6: CSR Committee



The chief responsibility of the CSR Committee is to develop a sustainability strategy, and to monitor its implementation. In addition, it determines sustainability targets and the measures necessary to achieve them. Within the scope of an ordinary meeting, held at least once a year, the CSR Officer(s) provide(s) information about current legal developments and market requirements, as well as about the status of implementation and the level of completion of measures and targets determined. Based on this, the CSR Committee may approve new measures and targets where appropriate. The CSR Committee generally follows the principle of materiality when assessing and prioritising measures and targets.

Minutes shall be prepared for any and all meetings. The Management Board shall be informed about the date and time of meetings in a timely manner, and may attend them if desired. Furthermore, the Management Board may obtain further reports and recommendations by the CSR Committee at any time.

Andreas Arndt (CEO/CFO), Member of the Management Board responsible for Corporate Governance, is the Bank's Corporate Governance Officer.

For further information regarding the subject of sustainability in the pbb Group, please refer to the non-financial report 2020 or the non-financial report in the annual report 2020 of the pbb Group, both published on the website of pbb.

Green Bond and Green Loan Framework

In January 2021, pbb successfully placed its first green bond on the market as a senior preferred benchmark with a volume of € 500 million. The bond comes with a coupon of 0.10 %, and has a duration of five years. The issue encountered a very good reception from the constantly expanding number of sustainability investors.

In 2020, the pbb Group further expanded the process of recognising sustainability criteria. The data situation created in this way serves to identify “green” properties in new business. On this basis, the pbb Group has developed a green bond framework which follows the ICMA Green Bond Principles and which focuses on real estate with a comparatively low energy consumption or very good building certification. The properties identified in accordance with these criteria serve as a reference portfolio for issuing “green” bonds of the pbb Group. The properties are selected by a Green Bond Committee, whose members take decisions regarding the inclusion of loans in the reference portfolio, whereby such inclusion requires a unanimous resolution. In accordance with the green bond framework of the pbb Group, green bonds can be issued as Pfandbriefe and senior unsecured (preferred and non-preferred) bonds. With the issue of green bonds, the pbb Group enables investors to channel targeted investments into sustainable capital market products.

In a further stage, the pbb Group is currently working on developing a concept for “green” financing arrangement (so-called green loan framework). The sustainability criteria used for a green loan should follow the “ICMA Green Loan Principles” and be consistent with the EU taxonomy.

10 Information regarding Covid-19 measures

In accordance with the guidelines EBA/GL/2020/07 “Guidelines on reporting and disclosure of exposures subject to measures applied in response to the COVID-19 crisis” of 2 June 2020, the following chapter contains the disclosure information regarding measures of the pbb Group applied in response to the COVID-19 crisis.

In the reporting year, the corona virus SARS-CoV-2 resulted in the global proliferation of the COVID-19 virus. As a result of the pandemic and the associated protection measures, global economic performance measured in terms of gross domestic product has suffered a dramatic decline, and unemployment has increased.

In view of its good capital and liquidity backing and its risk-conservative business model, the pbb Group considers that it is in a good position. Despite the crisis, the operational stability and internal procedures of the pbb Group were not significantly impaired at any time. The Group’s immediate response to the changed situation had an impact in this respect. For instance, the Group implemented protection measures for its employees and also utilised mobile and flexible work opportunities.

In order to mitigate the impact of the COVID-19 pandemic, various decisions were adopted in Germany and in other countries in different forms, including legally stipulated deferrals of certain due loan instalments in the event of a customer having to contend with an emergency situation due to the impact of the crisis. In Germany, the corresponding regulations relate exclusively to loan contracts with consumers and micro-enterprises, and are accordingly not relevant for the pbb Group. Similar criteria are applicable for moratoria of other countries to the extent that they relate solely to consumer business and also for private moratoria initiated by the bank associations which pbb has not joined.

In accordance with the guidelines EBA/GL/2020/07 of the European Banking Authority, the following table shows the new financing arrangements extended to customers who are secured by public guarantees and which have been carried out by the pbb Group in response to the COVID-19 crisis.

The pbb Group does not apply general payment moratoria in accordance with recital 10 of the guidelines EBA/GL/2020/02 in conjunction with EBA/GL/2020/02, EBA/GL/2020/08 and EBA/GL/2020/15; this is applicable for legislative moratoria (such as the payment moratorium of the BaFin for extended consumer loans) as well as for non-legislative moratoria (for instance the “vdp moratorium redemption” for loans backed by property charges/real estate). Accordingly, the further tables of the guidelines EBA/GL/2020/07 “Information on exposures subject to legislative and non-legislative moratoria” and “Break-down of exposures subject to legislative and non-legislative moratoria, according to remaining terms of the moratoria” are not relevant for the pbb Group.

Table 55: Information on newly originated loans and advances provided under newly applicable public guarantee schemes introduced in response to COVID-19 crisis

All figures in € million

	Measures in response to the COVID-19 crisis	Gross carrying amount 1)		Maximum amount of the guarantee that can be considered 2)	Gross carrying amount 1)
			thereof: forborne	Public guarantees received	Inflows to non-performing exposures
		a	b	c	d
1	**Newly originated loans and advances subject to public guarantee schemes**	0.9	-	0.8	-
2	thereof: Households	-			-
3	thereof: Collateralised by residential immovable property	-			-
4	thereof: Non-financial corporations	0.9	-	0.8	-
5	thereof: Small and Medium-sized Enterprises	0.5			-
6	thereof: Collateralised by commercial immovable property	0.9			-

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 reported amount of the state guarantee is limited to the gross carrying amount of the asset. Other securities or warranties/guarantees have not been considered.

With its portfolio of existing properties, pbb instead has operated actively on an individual basis in order to work together with customers to identify viable solutions. In the case of a small number of finance arrangements, the contractual payment streams were adjusted in the reporting year in processes agreed with the customer. In general, contractual agreements regarding the measurement of financial ratios were suspended or eased for a certain period or current redemption payments were deferred in the adjustments to the contractual payment streams.

These contract modifications have not had a significant impact on the income statement. None of the modifications was so extensive as to result in a new financing arrangement in reality in accordance with the requirements of IFRS 9. Accordingly, it was not necessary for the previous finance arrangement to be derecognised or for the modified finance arrangement to be recognised.

The number and extent of financing increases to customers - guaranteed by the Kreditanstalt für Wiederaufbau (KfW) or other development banks - were also very low; as of 31 December 2020, the volume amounted to € 0.9 million. These are finance arrangements extended by pbb which are guaranteed by the KfW. The complete or partial liability exemption provided by the KfW enables pbb, among other measures, to waive the requirement for backing with own resources.

The current developments are regularly discussed in the Management Board and the Supervisory Board. In addition, a task force for clarifying questions in connection with the COVID-19 pandemic and for strengthening processing capacity has been initiated on a group-wide basis. For the target markets of pbb, this task force is particularly responsible for the observation and analysis of current market developments, monitoring of certain market segments which are particularly affected by the impact of the COVID-19 pandemic, as well as the analysis and assessment of state protection and support measures in relation to their relevance for our borrowers. In the pbb Group, the current development continues to be closely monitored at the level of individual exposures, specifically in relation to the cash flow and collateral values.

11 Outlook

CRR Amending Regulation

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 EBA published the final standard EBA/ITS/2020/04, the so-called new Pillar 3 framework, on 24 June 2020. The standard was accepted by the EU Commission on 15 March 2021. However, it has not yet been published in the Official Gazette of the European Union.

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.

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 challenges in connection with the COVID-19 crisis, the BCBS decided in March 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. On the occasion of the G20 Summit in November 2020, the Basel Committee confirmed that it intended to stick to this COVID-19-induced amended schedule. Accordingly, the BCBS members expect to see complete implementation of the Basel III (IV) standards by 1 January 2023.

At present, it is not yet possible to make a reliable estimate for a transportation of the BCBS requirements into European law, probably within the framework of a CRR III and amendment of the Pillar 3 framework (EBA/ITS/2020/04) applicable starting 28 June 2021.

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