Disclosure Report

In accordance with Part 8 of the Capital Requirements Regulation (CRR)

as at 31 December 2022

Deutsche Pfandbriefbank Group

Overview

Deutsche Pfandbriefbank Group („pbb Group“)

EU KM1: Key metrics

All figures in € million, unless otherwise stated		a 31.12.2022	b 30.09.2022	c 30.06.2022	d 31.03.2022	e 31.12.2021
	Available own funds (amounts)					
1	Common Equity Tier 1 (CET1) capital	2,843	2,823	2,841	2,824	2,875
2	Tier 1 capital	3,141	3,121	3,139	3,122	3,173
3	Total capital	3,707	3,715	3,703	3,700	3,766
	Risk-weighted exposure amounts					
4	Total risk-weighted exposure amount	17,017	17,279	16,481	16,726	16,792
	Capital ratios (as a percentage of risk-weighted exposure amount)					
5	Common Equity Tier 1 ratio (%)	16.7	16.3	17.2	16.9	17.1
6	Tier 1 ratio (%)	18.5	18.1	19.0	18.7	18.9
7	Total capital ratio (%)	21.8	21.5	22.5	22.1	22.4
	Additional own funds requirements to address risks other than the risk of excessive leverage (as a percentage of risk-weighted exposure amount)					
EU 7a	Additional own funds requirements to address risks other than the risk of excessive leverage (%)	2.5	2.5	2.5	2.5	2.5
EU 7b	thereof: to be made up of CET1 capital (percentage points)	1.4	1.4	1.4	1.4	1.4
EU 7c	thereof: to be made up of Tier 1 capital (percentage points)	1.9	1.9	1.9	1.9	1.9
EU 7d	Total SREP own funds requirements (%)	10.5	10.5	10.5	10.5	10.5
	Combined buffer and overall capital requirement (as a percentage of risk-weighted exposure amount)					
8	Capital conservation buffer (%)	2.50	2.50	2.50	2.50	2.50
EU 8a	Conservation buffer due to macro-prudential or systemic risk identified at the level of a Member State (%)	-	-	-	-	-
9	Institution specific countercyclical capital buffer (%)	0.22	0.09	0.02	0.02	0.02
EU 9a	Systemic risk buffer (%)	-	-	-	-	-
10	Global Systemically Important Institution buffer (%)	-	-	-	-	-
EU 10a	Other Systemically Important Institution buffer (%)	-	-	-	-	-
11	Combined buffer requirement (%)	2.72	2.59	2.52	2.52	2.52
EU 11a	Overall capital requirements (%)	13.22	13.09	13.02	13.02	13.02
12	CET1 available after meeting the total SREP own funds requirements (%)	10.6	10.2	11.2	10.8	10.4
	Leverage ratio					
13	Total exposure measure	53,419	56,138	55,210	51,645	52,549
14	Leverage ratio (%)	5.9	5.6	5.7	6.0	6.0
	Additional own funds requirements to address the risk of excessive leverage (as a percentage of total exposure measure)					
EU 14a	Additional own funds requirements to address the risk of excessive lever-age (%)	-	-	-	-	-
EU 14b	thereof: to be made up of CET1 capital (percentage points)	-	-	-	-	-
EU 14c	Total SREP leverage ratio requirements (%)	3.0	3.0	3.0	3.1	3.1
	Leverage ratio buffer and overall leverage ratio requirement (as a percentage of total exposure measure)					
EU 14d	Leverage ratio buffer requirement (%)	-	-	-	-	-
EU 14e	Overall leverage ratio requirements (%)	3.0	3.0	3.0	3.1	3.1
	Liquidity Coverage Ratio					
15	Total high-quality liquid assets (HQLA) (Weighted value - average)	5,588	5,784	5,837	5,961	5,808
EU 16a	Cash outflows - Total weighted value	2,670	2,722	2,703	2,693	2,346
EU 16b	Cash inflows - Total weighted value	339	303	292	323	370
16	Total net cash outflows (adjusted value)	2,331	2,419	2,411	2,368	1,978
17	Liquidity coverage ratio (%)	254	250	254	270	308
	Net Stable Funding Ratio					
18	Total available stable funding	40,584	43,379	44,293	48,602	49,781
19	Total required stable funding	36,655	38,798	38,887	40,986	42,030
20	NSFR ratio (%)	111	112	114	119	118

Please note:

The monetary values reported in pbb Group's Disclosure Report are stated in millions of euros, in accordance with Article 19 no. 4 of Implementing Regulation (EU) 2021/637 (Pillar 3 framework). The figures have been rounded in line with standard commercial practice. Rounding means that the totals shown in the tables may differ slightly from the totals calculated by adding up the individual values shown. Individual values of less than € 500,000 are generally not disclosed due to commercial rounding, instead shown as zero or as zero balances indicated by a hyphen. The principle of materiality pursuant to Article 432 (1) of the CRR is observed when disclosing information.

With regard to the CRR and CRD regulations, uncertainty remains as to how some of the regulations are to be interpreted, and the final versions of some of the related mandatory regulatory technical standards are still unavailable. As a result, Deutsche Pfandbriefbank AG ("pbb") will adjust its assumptions and models on an ongoing basis as its understanding and interpretation of the rules, and those of the sector as a whole, evolve. With this in mind, current CRR/CRD metrics cannot be comparable to previous expectations. CRR/CRD metrics may also not be comparable to metrics reported by competitors with similar designations, as their assumptions and estimates may differ from those of pbb.

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Introduction

Deutsche Pfandbriefbank („pbb“)

Deutsche Pfandbriefbank Group (“pbb Group”) consists primarily of the parent entity Deutsche Pfandbriefbank AG (“pbb”). pbb, which has its registered office in Munich/Garching, is a leading European specialist lender for commercial real estate finance and also for public investment finance, focusing on business eligible for inclusion in Pfandbrief cover. The geographic focus is on Europe and the US. It issues Mortgage Pfandbriefe, collateralised by real property liens, as well as Public Sector Pfandbriefe, collateralised by claims against the public sector, and, measured by outstanding volume, is one of the largest issuers of Pfandbriefe, which also makes it an important player in the European covered bond markets. In its core markets, pbb maintains a strong local presence for its clients, covering all functions of the financing process. Thanks to its loan structuring expertise, its cross-border business approach, and cooperation with other financing partners, pbb is in a position to provide complex financings as well as cross-border transactions. The business model will be expanded to include Real Estate Investment Management in 2023.

pbb is listed in the Prime Standard segment of the Regulated Market at the Frankfurt Stock Exchange. Its shares are included in the SDAX® index.

pbb is classified as a significant supervised institution in a euro area member state under the Single Supervisory Mechanism (SSM), meaning that it is subject to direct supervision by the European Central Bank (ECB). pbb is not, however, classed as a Global Systemically Important Institution (G-SII). Disclosure pursuant to Article 441 of the CRR (Indicators of global systemic importance) is not relevant for pbb Group.

Objective of the Disclosure Report

As the parent company of the regulatory group of institutions, pbb (LEI code: DZZ47B9A52ZJ6LT6VV95) uses this Disclosure Report to implement the disclosure requirements pursuant to Part 8 of the Capital Requirements Regulation, Regulation (EU) 2019/876 amending Regulation (EU) 575/2013, for pbb and its subordinated affiliated companies (pbb Group) as at 31 December 2022.

Provisions on the disclosure requirements are set out in Articles 431 to 455 of the CRR; additional requirements can be found in section 26a (1) sentence 1 of the German Banking Act (Kreditwesengesetz – “KWG”). To comply with these disclosure requirements, pbb applies the uniform disclosure formats of the European Banking Authority (EBA) in accordance with Implementing Regulation (EU) 2021/637 (Pillar 3 framework). Reporting currency is the euro. pbb is classed as a large institution pursuant to Article 4 (1) no. 146 of the CRR, meaning that it implements the frequency requirements pursuant to Article 433a of the CRR. This report generally covers the disclosure period from 30 September 2022 to 31 December 2022, although the reference period for certain tables and information may differ, depending on the relevant disclosure cycle pursuant to Article 433a of the CRR. The reference reporting date for information to be disclosed only on an annual basis is 31 December 2021. The reference reporting date for information to be disclosed on a semi-annual basis is 30 June 2022.

Unlike the Annual Report under commercial law, the Disclosure Report focuses primarily on the regulatory perspective. Together with pbb Group’s Annual Report, it gives the reader a comprehensive overview of pbb Group’s current risk profile and risk management. In accordance with Article 433a (1) (a) of the CRR, this Disclosure Report especially includes information on:

- pbb Group’s regulatory and balance sheet structure (scope)
- the principles of corporate governance
- regulatory capital (own funds) and capital ratios

- regulatory capital (own funds) requirements and risk-weighted exposure amounts
- debt and asset encumbrance
- pbb Group's general risk management system (risk management objectives and policy)
- risk management with regard to individual risk types.

Institutions may, in accordance with Article 432 of the CRR, omit one or more items of information referred to in Part 8 Titles II and III of the CRR where the information provided by those disclosures is not regarded as material or those items include information that is regarded as proprietary or confidential. pbb has not made use of this option.

The information pursuant to Article 450 of the CRR on the main features of pbb Group's remuneration policy and practices will be published as an appendix to this Disclosure Report on pbb's website (www.pfandbriefbank.com) under Investors / Mandatory Publications / Disclosure Report in accordance with Part 8 of the CRR following completion of the 2022 remuneration review, which is scheduled for the second quarter of 2023.

Formal procedures and regulations to comply with disclosure requirements

One major element for complying with the Pillar 3 disclosure requirements, apart from the Disclosure Report itself, is the written documentation of the procedures and regulations used in the course of the disclosure process. According to Article 431 (3) of the CRR, pbb Group has thus adopted formal procedures and regulations designed to assure (adequate) compliance with the disclosure requirements in accordance with the CRR, 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 nature and scope of disclosure, including the use of disclosure waivers, the adequacy of information, the disclosure medium and disclosure deadlines, the frequency of publication, responsibilities and the integration of the disclosure process into internal bank processes and structures. The policy also contains directives on the regular verification of the adequacy and practicality of disclosure practices applied within pbb Group, as well as defined disclosure standards and processes. The Disclosure Policy is reviewed and aligned with current market requirements on a regular basis.

As part of the disclosure process, pbb Group has established various control procedures which are used to check whether the data disclosed is complete, accurate and adequate. The procedures and regulations implemented for disclosure are also subject to regular monitoring by Internal Audit and review by the external auditors. The Disclosure Report itself is not audited by pbb Group's external auditors; therefore, the Pillar 3 disclosures in this report are not certified.

The Disclosure Report is approved by the entire Management Board. An attestation issued by the Management Board pursuant to Article 431 (3) of the CRR can be found at the end of this Disclosure Report.

Means of disclosure

In accordance with Article 434 of the CRR, the Disclosure Report is published as a standalone report on pbb's website (www.pfandbriefbank.com) under Investors / Mandatory Publications / Disclosure Report in accordance with Part 8 of the CRR. pbb informs the European Central Bank (ECB), Deutsche Bundesbank and the German Federal Financial Supervisory Authority (BaFin) of the date and medium of publication.

Scope of application

In accordance with Article 13 (1) of the CRR, the Disclosure Report includes the disclosure on the basis of the consolidated situation for pbb Group. Additional disclosure at individual institution level or on a sub-consolidated basis in accordance with Articles 6 and 13 of the CRR is not required for pbb as the ultimate parent institution of the regulatory group of institutions. pbb is itself an EU parent institution pursuant to Article 4 (1) no. 29 of the CRR.

The basis is the scope of prudential consolidation pursuant to Articles 18 to 24 of the CRR. There are no differences between the scope of prudential consolidation and the accounting scope of consolidation for pbb's consolidated financial statements (IFRS) as at the disclosure date. Disclosure on the basis of the consolidated situation requires that business relationships

within pbb Group are offset and that intra-group transactions are eliminated. The regulatory values and indicators are calculated on the basis of the International Financial Reporting Standards (IFRS) and the International Accounting Standards (IAS).

Waiver pursuant to the CRR

In the 2022 financial year, as in the previous year, pbb made use of the relief provided by the waiver pursuant to Article 7 (3) of the CRR. Pursuant to a decision made by the European Central Bank (ECB), pbb, as the supervised parent entity of pbb Group, is permitted to include certain prudential requirements only on a consolidated group basis and not on an individual institution level.

pbb continues to meet the requirements set out in Article 7 (3) of the CRR:

- There is no current or foreseen material practical or legal impediment within pbb Group to the prompt transfer of own funds or repayment of liabilities to the parent institution (pbb). The company that is key to pbb Group's financial stability, pbb, has its registered office in Germany. pbb is also pbb Group's only credit institution. pbb's stake in those subsidiaries consolidated for prudential purposes regularly exceeds 50% of the voting rights (100% at one subsidiary and 71.43% in the case of CAPVERIANT GmbH). pbb has a controlling influence over each subsidiary. In addition, a formal intra-group decision-making process for the transfer of own funds between pbb as the parent entity and superordinate institution of pbb Group and the subsidiaries enables prompt transfer. As in the previous year, there were no transfers of own funds or repayments of liabilities as defined by Article 7 (1) (a) of the CRR in the 2022 reporting year.

- pbb Group has an integrated risk management system that encompasses the entire Group and includes pbb and its subsidiaries that are included in the scope of prudential consolidation of pbb Group. pbb's Management Board is responsible for the risk management system and makes decisions on the strategies and key issues relating to risk management and risk organisation. The principles, methods and processes that make up pbb Group's risk management system are defined centrally by pbb and are applied within pbb Group (subject to the implementation required under company law and any necessary modifications at the level of individual group companies). pbb employees are involved in all decision-making bodies of pbb Group companies as members of the companies' executive bodies, enabling sufficient involvement in all strategic decisions of pbb Group. This also allows risk appetite and risk management to be addressed in a uniform manner across all pbb Group companies. pbb also has a Risk Control unit which is responsible for the uniform application of risk management within pbb Group, thereby ensuring that risk measurement procedures and risk reporting are uniform, and that risk indicators are comparable, within pbb Group.

In addition, and as in the previous year, pbb made use of a waiver granted by the ECB pursuant to section 2a (2) of the KWG in the 2022 financial year. This waiver means that pbb is exempt, at individual institutional level, from applying the requirements set out in section 25a (1) sentence 3 nos. 1, 2 and 3 (b) and (c) of the KWG with regard to the risk control function for the management of risks, with the exception of the liquidity risk. The requirements for applying the waiver set out in Article 7 (3) of the CRR are met: there is no current or foreseen material practical or legal impediment to the prompt transfer of own funds or repayment of liabilities to the parent institution in a member state. The risk evaluation, measurement and control procedures relevant for consolidated supervision cover the parent institution in a member state.

pbb Group has not made use of individual consolidation in accordance with Article 9 of the CRR.

Scope of application

Organisational and legal structure

This chapter contains information on the legal and organisational structure of pbb Group pursuant to section 26a (1) sentence 1 of the KWG and, within this context, on the key criteria of pbb Group's business model and strategy, strategic focus and management system.

pbb Group consists primarily of the parent entity pbb. At the same time, in accordance with Article 4 (1) of the CRR, pbb is the parent company of the regulatory group as defined in section 10a of the KWG in conjunction with Articles 11 et seqq. of the CRR, meaning that it is responsible for meeting the regulatory disclosure requirements. pbb is a public limited company (Aktiengesellschaft) under German law, registered in the commercial register of the Local Court (Amtsgericht) of Munich, Germany (HRB 41054).

pbb's headquarters are located in Garching, near Munich. The address of the principal place of business is Parkring 28, 85748 Garching, Germany. pbb also has offices at four locations across Germany (Eschborn, Dusseldorf, Hamburg and Berlin). Outside Germany, pbb has branch offices in London, Madrid, Paris and Stockholm, as well as a representative office in New York City. pbb Group operates the vast majority of its international financing activities from these locations.

Business model

During the 2022 financial year, the strategic business segments of pbb Group were Real Estate Finance (REF), supplemented by Public Investment Finance (PIF); the focus is on business eligible for inclusion in Pfandbrief cover. pbb plans to combine the PIF business segment with the Value Portfolio segment during the 2023 financial year, to create a Non-Core Unit that bundles the Group's non-strategic business activities. On another front, the business model will be expanded to include Real Estate Investment Management in 2023. The geographic focus is on Europe and the US. pbb's significant European core markets are Germany, France, the United Kingdom, the Nordic countries, selected Central and Eastern European countries, Spain and the Benelux countries. In the US, pbb currently focuses on the metropolitan areas of New York, Washington D.C., Boston, Chicago, San Francisco, Seattle and Los Angeles, with the potential to add Denver and Austin going forward.

Lending is pbb's core business: it plays an important role in this area, supplying credit to the real estate sector and supporting the public sector on selective project financings for the provision and improvement of public infrastructure. In the context of enshrining ESG concepts in its business model, multi-year planning and portfolio management, pbb has further intensified its Green Loan Programme. Accordingly, the Bank will further increase the share of green loans in new business – with a view towards financing not only green properties but also the transformation of existing properties. pbb focuses in particular on primary client business and syndications. Besides traditional financing solutions tailored to clients' needs, pbb offers its clients derivative products 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 from its wide network of banks and other partners, including insurance companies, pension funds and private equity firms. In this syndicate business, when acting as an arranger, pbb takes over the complete coordination between the syndicate members and the borrower or, in the role of an agent, deals with tasks related to the management of syndicated loans.

In addition, pbb acts as an underwriter, providing financing to borrowers as a sole lender or together with other market participants, and then selling parts of such loans to interested partners within the scope of syndications.

In December 2022, pbb announced its intention to expand the business model to include the new area of Real Estate Investment Management. By expanding into Real Estate Investment Management, pbb continues to diversify its business model and aims to tap new sources of income. The plan is to create the prerequisites for the launch of a debut open-ended real estate special investment fund during the first half of 2023. Moreover, the Bank is exploring cooperations with other market participants. The new Real Estate Investment Management division is set to operate as an independent unit from 2024 onwards; up until then, income and expenses will be reported in the REF segment.

Following the orderly Brexit (and the subsequent transitional period), pbb has submitted an application to the UK Financial Conduct Authority (FCA) for authorisation to continue conducting business in the United Kingdom after expiry of the so-called Temporary Permissions Regime. pbb assumes that the FCA will grant this authorisation during the 2023 financial year.

pbb’s subsidiary CAPVERIANT GmbH (“CAPVERIANT”) operates a digital platform that brings together public-sector borrowers and institutional investors within the scope of pbb Group’s digitalisation strategy. In addition to its loan brokerage licence according to the German Trade Code (Gewerbeordnung – “GewO”), CAPVERIANT was granted the licence to operate as an investment firm (offering investment broking and investment advice) by BaFin in spring 2022, and is now authorised to broker financial instruments, including more complex loans. To date, volumes transacted via the platform have failed to match expectations.

Strategic portfolios

In Commercial Real Estate Finance, pbb's range of services is targeted primarily at professional real estate investors (both national and international) such as real estate companies, institutional investors, real estate funds as well as – particularly in Germany – SMEs and clients with a regional focus on Germany. pbb targets complex transactions with medium-sized to larger financing volumes. Financed objects mainly involve office buildings, properties for residential use, retail and logistics properties. Other proper-ty types are financed as portfolio additions. pbb is once again considering financing retirement and nursery homes in Germany. The regional focus is on the core markets eligible for inclusion in Pfandbrief cover in Europe and in certain US metropolitan areas, where pbb offers both local and cross-border financing expertise. A majority of the loans granted are investment financings, i.e. loans for the acquisition or follow-up financing of existing properties generating cash flows. Development financings (including for residential real estate in Germany) are of complementary significance.

In Public Investment Finance, pbb exploits opportunities to finance projects eligible for inclusion in Pfandbrief cover, for the provision and improvement of public infrastructure. Clients in this segment include regional or provincial governments, municipalities, urban development companies, and publicly-owned hospitals – as well as investment or real estate holding companies. Additionally, pbb pursues public/private partnerships and other structured transactions. The regional focus in primary new business is on France. This segment is complemented by purchasing bonds of European issuers, in particular for cover pool and liquidity management purposes. pbb did not transact any business in this segment during 2022.

Aiming to further sharpen the focus on its core Commercial Real Estate Finance business, pbb plans to combine the Public Investment Finance segment and the Value Portfolio (described below) to create a Non-Core Unit that bundles the Group’s non-strategic business activities. The objective is to optimise the balance sheet structure, and to continue the value-preserving reduction of segments, taking opportunistic options for accelerating this exercise into consideration.

Value Portfolio

The Value Portfolio (VP) consists almost entirely of existing financings to the public sector which are not linked to specific projects (budget financing). pbb does not originate any new business in this area. The portfolio is primarily refinanced at matched maturities. It generates interest income, and matures in accordance with the underlying fixed terms. If and when economically feasible, pbb also uses portfolio or individual asset sales to bring about a more rapid reduction. pbb plans to combine this segment with the Public Investment Finance segment, to form a Non-Core Unit.

Consolidation & Adjustment (C&A)

IFRS 8.28 stipulates that an entity shall provide reconciliations of the reportable segments' profit/loss, assets/liabilities etc. to the respective items in the consolidated financial statements. At pbb Group, this reconciliation is carried out in the C&A column and does not comprise any operating business. For example, this column includes consolidation items arising from the elimination of intra-group relationships between pbb and its fully-consolidated subsidiaries, or between the fully-consolidated subsidiaries themselves (to a minor extent).

Funding

Loans are largely funded using matching maturities and primarily via the Pfandbrief market, supplemented with unsecured funding. Issues are regularly placed on the international capital markets in benchmark format, and via private placements. pbb structures private placements as bearer or registered securities in accordance with investors' requirements, or in the form of fixed-rate deposits – meaning that term and interest structure can be negotiated on an individual basis. In line with the lending business, issues are predominantly conducted in euros; pbb prefers to refinance any lending in the US, the UK and Sweden directly in the respective currency. Foreign exchange swaps are thus avoided as far as possible, reducing the need for excess Pfandbrief cover to be funded on an unhedged basis.

pbb is one of the largest issuers of Mortgage Pfandbriefe and Public Sector Pfandbriefe (measured by outstanding volume – source: Association of German Pfandbrief Banks).

The main vehicles used for unsecured funding are promissory notes, bearer bonds, and fixed-rate deposits as senior-preferred issues.

Banks, funds and insurance companies, but also central banks and government funds, are investors in debt instruments. In this segment, pbb's particular strategic focus is on developing its funding franchise, with the objective of further diversifying and expanding its investor base. The Bank has been issuing green bonds since the beginning of 2021, offering an investment opportunity for investors applying sustainability requirements.

In addition, the Bank is active in the retail deposit-taking business with private investors in Germany. Via its online platform (pbb-direkt.com) as well as through third-party providers, pbb offers overnight and fixed-term deposits denominated in euros and US dollars.

Regarding measures provided by the European Central Bank (ECB), pbb participated in the ECB's targeted longer-term refinancing operations (TLTRO III) in 2020 and 2021 due to the attractive conditions offered. With the ECB's decision dated 27 October 2022, conditions have been adjusted and have lost a lot of their future appeal.

Strategic focus

pbb Group's strategy focuses on continued, value-creating 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 Management Board of pbb has committed itself to further strengthening Group profitability in the financial years 2023 to 2025, consistent with the Bank's profile as a dividend stock. Strategically, the focus concerning income lies particularly on the aforementioned business activities in the REF core segment. The Group aims to further boost profitability by expanding the product range, including the new Real Estate Investment Management division which is being set up, while strictly adhering to cost targets.

Its risk-conservative approach remains the cornerstone of pbb's core business as well as the new strategic initiatives, based on pbb's expertise in its markets. Within its strategic planning, pbb examines, plans and implements measures – in order to improve and grow, based on expertise in its core business, and in order to be prepared for existing and expected challenges.

Ultimately, the common objective of these strategic measures is to sustainably strengthen the business model and make a positive contribution to profitability.

Specifically, this entails responding to changing market parameters and outlooks, e.g. by taking measures to broaden the Bank's range of funding sources. pbb consciously continues to analyse and implement business options alongside senior lending on CRE markets. Certain measures taken (e.g. within the scope of digitalisation) are intended to tackle general cost inflation whilst pbb continues to invest into its long-term strategic development.

Specifically, pbb plans to launch new products, to extend the US business, and to grant more green loans, maintaining its focus on top locations.

By expanding into Real Estate Investment Management, pbb is consistently pursuing the diversification of its business model. The new division is set to increase potential for growth, boosting the Bank's earnings power – whilst strictly adhering to cost targets. Leveraging its extensive market expertise, global presence and superior risk competency, the Bank intends to bring attractive real estate investment products to the market for institutional investors. The plan is to create the prerequisites for the launch of a debut open-ended real estate special investment fund during the first half of 2023. Moreover, the Bank is exploring cooperations with other market participants. The Real Estate Investment Management division will operate as an independent unit within the Bank.

In 2021, pbb launched a comprehensive ESG programme to address new regulatory requirements, and to capture market opportunities and risks arising in the context of ESG. This programme encompasses all ESG topics that are relevant to pbb in projects and working groups. With specific regard to sustainability, which forms an essential element of the ESG Programme (including green finance), environmental sustainability issues will be reviewed in relation to the business activities (lending with green loans and refinancing with green bonds in particular, based on an in-house scoring model) as well as to operations. As part of the ESG operationalisation process, pbb has started passing ESG topics already developed on to the relevant departments for integration into standard processes. The Bank has also established ESG teams within the divisions, as well as an ESG Office. ESG is seen as a Bank-wide task: instead of managing ESG aspects through a centralised ESG division, individual topics are continuously handed over to regular processes as soon as this is feasible. In this context, the ESG Office serves as a central coordinator preparing the handover of change topics to current operations. The need to transform the real economy and the real estate industry creates tasks, business potential and challenges arising from the substantial investment requirements of our clients. In future, pbb Group aims to act not only primarily as a capital provider, but also as a transformation partner for its clients and the commercial real estate industry. With this in mind, pbb Group has set itself the goal of understanding both the opportunities and challenges facing its clients - in the context of sustainability and the associated pressure to transform - in line with its strategic client orientation, and of supporting clients as an active partner in the transformation process, also making use of pbb's extensive network as well as its proprietary ESG Analytics tool. This includes providing support for financing the acquisition of green properties and green developments, but in particular transformation projects such as refurbishment work on existing buildings, with the associated improvements to energy efficiency. The "green loan" and the "transition loan" were established for this as an important basis and have been available to clients as new products since 2021. Equally relevant in this context is transparency for the existing portfolio. Significant improvements were achieved in 2022 through an all-out, ex-post data capture process in the REF portfolio.

pbb has expressly undertaken to adhere to the Paris Climate Agreement, which targets a limitation of global warming to 1.5 degrees compared to the pre-industrial age. Accordingly, the Bank is working to align its credit portfolios and its operations to the 1.5-degree target: with the goal of achieving this by 2050, pbb has set itself a fundamental long-term climate target against which the Bank will be strategically managed. A corresponding approach for portfolio and new business management will be established on this basis, going forwards. In addition, pbb is evaluating further targets stipulated by the Paris climate accord – as well as measures derived therefrom – which relate to further sustainability aspects regarding social matters.

Specific measures will be taken to back up the stated ambition. The focus is on meeting all common client needs in the context of sustainability and sustainable financial solutions. Where pbb Group has a chance to set itself apart from its peers by offering selected additional products and services, it takes a proactive approach to examining their introduction. To achieve this, pbb intends to expand its internal expertise in the real estate arena, as well as property scoring and potential analysis, and complementing it by entering into targeted use partnerships.

Economic aspects (such as securing long-term income streams) and ecological considerations (such as the type of heating, building materials) all play an important role for the financing of commercial building projects. Taking ESG aspects into account not only makes a positive contribution to the overarching sustainability targets, but also serves to help avoid ESG/ sustainability risks in the business model. Against this background, pbb Group is consistently increasing the share of sustainable financings in the REF portfolio and continues to pursue the selection process in this portfolio. pbb has defined specific indicators and targets for the active and strategic management of its assets. By 2026, pbb is planning that assets eligible for green loan financing will account for 30% of the REF portfolio (based on the requirements set out in pbb's Green Loan Framework).

To meet ppb Group's responsibility as a transformation partner and the expectations of its stakeholders, pbb Group concerns itself intensively with the topic of sustainability, also within the Company itself. As part of a regularly conducted materiality analysis, the most relevant sustainability topics are identified and corresponding targets and measures derived from it. Besides industry-specific aspects, such as the role of pbb Group as a transformation partner and the long-term transformation of the business portfolio and business operations, pbb Group pays special attention to strong corporate governance, social issues and its employees.

As a company with global operations, pbb Group is fully committed to respecting, upholding and strengthening human rights and to preventing abuses thereof. The Human Rights Policy and the Code of Conduct determine a corresponding framework. pbb has been a participant of the UN Global Compact since February 2022, committing itself to the ten universal principles in the areas of human rights, labour, environmental protection and anti-corruption. As part of this commitment, pbb published its first Communication of Progress in April 2022.

pbb Group also intends to further advance its digital transformation. The approach chosen for this comprises three main thrusts; focusing on further development of client interfaces, enhancing process efficiency, and on exploring new sources of income. Our Client Portal, providing a digital interface with our clients, has been in operation since 2021.

As a next step, pbb is now working on the digitalisation of client and loan processes; the aim is to create a modular system with a consistent workflow that is efficient and improves transparency, not least for the Bank's clients. SAP Fioneer, the specialist software developer for financial services providers, has joined forces with pbb as a strategic partner in the development of a digital Credit Workplace. The first version of this solution will be focused on commercial real estate finance. The digital Credit Workplace will support both new business origination and existing exposure management in the front and back offices, whilst further optimising existing processes and enhancing process scalability.

Moreover, the Management Board and Supervisory Board have resolved to maintain the dividend policy communicated to date, which provides for distribution of a regular dividend of 50% plus a special dividend of 25% for the financial years 2023 through 2025, subject to slight adjustments. The payout ratio is based on consolidated net income attributable to ordinary shareholders after taxes and the AT1 coupon in line with International Financial Reporting Standards (IFRS).

As a rule, distributions are made subject to and depending upon economic viability, macroeconomic and sector-specific risks, including ESG risks, along with existing and anticipated regulatory requirements and future growth and investment plans. A CET1 ratio of at least 14.0% is seen as an adequate benchmark for special distributions, especially in the context of the current geopolitical, macroeconomic and sector-specific uncertainty.

pbb continues to strive for a long-term stable payout ratio, which it will review on a regular basis.

Further-reaching, longer-term strategic measures

Within its strategic planning, pbb examines, plans and implements measures – in order to improve and grow, based on expertise in its core business, and in order to be prepared for existing and expected challenges as well as changing market parameters and forecasts. For this purpose, pbb has consistently expanded its existing strategic initiatives, setting out details and defining further specific objectives as a foundation. The goals for the financial years 2023 to 2025 are unchanged: a sustainable increase in Group profitability, and a sharper profile for the pbb share as a dividend stock. Its risk-conservative approach remains the cornerstone of pbb's core business as well as the new strategic initiatives, based on pbb's expertise in its markets.

The objective of these further-reaching measures is to increase pbb's return on CET1 capital by 2026. By maintaining pbb's conservative risk profile, together with a solid capitalisation and preserving the Bank's traditional, strong cost discipline, the objectives are set to be reached by the year 2026.

Specifically, the measures provide for analysis and implementation of business options – deliberately besides senior lending on CRE markets. Furthermore, pbb will focus on expanding the capital-light commission-based business and on the continued evolution of pbb into the leading bank for green transformation in the commercial real estate finance business. Beyond this, pbb plans to further sharpen the focus on its core Commercial Real Estate Finance business, by combining the Public Investment Finance and Value Portfolio segments to form a Non-Core Unit. The Bank also aims to further diversify its range of funding sources.

pbb plans to build on its expertise and strong capital base in the core strategic Real Estate Finance business with the aim of in-creasing financing volumes between now and 2026 whilst continuing to improve margins. Amongst other measures, this will be achieved through strict management of individual transactions. Within this framework, and given the prevailing market environment, pbb wants to actively exploit any opportunities arising across the entire commercial real estate markets, based on the Bank's existing strategy. At the same time, pbb strives for further geographic diversification into higher-margin market segments such as the US, the UK or (on a selective basis) the CEE countries, with an enhanced focus on higher-margin product types combined with green financings (e.g. for developments). In this exercise, pbb is determined to preserve its conservative risk profile, remaining within its typical range of risk.

The Bank is pursuing two approaches to diversify its business model and expand capital-light commission-based business: firstly, the new Real Estate Investment Management division is being set up, and secondly, a new originate-to-distribute platform is being created in order to further grow the business with institutional investors. Based on investors' needs, pbb is looking to use its existing market access to originate CRE financings and to place them in the desired formats.

On the funding side, pbb is planning to make an important step towards increasing profitability by expanding its funding base. Early strategic decisions made in the deposit-taking business are increasingly bearing fruit: the volume of retail deposits increased significantly in 2022 – following the turnaround in interest rates. pbb is determined to continue exploiting this positive momentum.

Whilst capital expenditure will rise in 2023 due to various growth initiatives, the Bank wants to maintain its strict cost discipline. pbb considers 2023 to be a year of investment into strategic growth initiatives, looking for first successes to become visible in 2024 and 2025. The Bank plans to achieve its ambitions by 2026: by then, pbb is looking to operate on a sustainably higher profitability level which provides the basis for further growth, creating economies of scale.

Internal management system

pbb Group has established an internal management system aimed at sustainably enhancing the Group's value, whilst taking into account risks and regulatory requirements. Key objective is a balanced risk/return ratio. Risks should be compatible with external and internal risk-bearing capacity guidelines and generate an adequate return on capital employed.

Management and measurement are based on a consistent and integrated key performance indicator system (KPI system) comprised of the following dimensions: profitability, growth in commercial real estate finance, risk mitigation and pbb Group's capitalisation. Management performs regular plan/actual comparisons, including relevant analyses, to identify the source of deviations on KPI level. Current market developments, such as potential macroeconomic scenarios or changed interest rate levels, are also part of these analyses. The Bank further relies on regular medium-term projections of profitability indicators and (stress) scenario calculations, alongside strategic planning for the Bank as a whole, to ensure that management is provided with a comprehensive overview of the Bank's future performance.

For 2023, pbb Group has changed the definition of one of its financial performance indicators: in future, the key performance indicator for profitability will be the CET1 return on invested capital after taxes instead of the return on equity after taxes.

CET1 return on invested capital after taxes

CET1 return on invested capital after taxes is defined as net income after taxes attributable to shareholders after deducting the AT1 coupon, relative to the average regulatory CET1 capital available in the financial year. In the past, the reference value for profit after tax attributable to shareholders after deducting the AT1 coupon was the average IFRS equity available during the financial year, excluding accumulated other comprehensive income from (expiring) cash flow hedges and from financial assets measured at fair value through other comprehensive income, as well as excluding additional equity instruments (AT1 capital) and non-controlling interests. This change reflects the importance of the regulatory CET1 capital as a key performance indicator. The newly-defined financial performance indicator is thus in line with the CET1 ratio as the key performance indicator for capital adequacy.

The other financial performance indicators remained unchanged compared to the previous year.

Profit before tax

Profit before tax is another financial performance indicator. The aim is to increase it both by generating higher revenue and by adhering to strict cost discipline.

Cost/income ratio

Cost discipline and efficiency are monitored using the cost/income ratio, i.e. the ratio of general and administrative expenses and net income from write-downs and write-ups of non-financial assets to operating income.

Notional volume of REF financings

The notional amount of financing in the Real Estate Finance (REF) segment is a significant factor influencing future earning power.

New business volume

The financing volume can be managed, above all, by the volume of new business (including prolongations with maturities of more than one year), which also represents a financial performance indicator. pbb uses a present value approach to manage and calculate new business.

Capital adequacy (ICAAP)

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.

CET1 ratio

The CET1 ratio, a key performance 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 large part of the real estate portfolio, and the credit risk standardised approach (CRSA) for the remaining portfolio.

Non-financial key performance indicators within the meaning of GAS 20.105 are currently not explicitly managed. pbb Group is focusing intensely on environmental, social, and governance (ESG) aspects, launching a cross-divisional ESG programme in line with its holistic ESG strategy. This programme bundles and refines all ESG activities on an organisational and operational level; going forward it is expected to define non-financial performance indicators. Alongside the sustainable finance focal point – which has already seen the implementation of green bonds and green loans – and the refinement of the Bank's business model, additional ESG indicators as well as the green asset ratios and the taxonomy alignment ratio for the banking book (in line with current regulatory developments) are at the heart of the programme. Due to the high complexity involved in calculating those indicators – which has also led to a delay of the first-time disclosure obligation of the green asset ratios until 2024 – and the great ambiguities in the interpretation of the statutory requirements, no non-financial performance indicators were defined or determined in 2022.

Principles of corporate governance

This chapter presents information on the corporate governance arrangements pursuant to Article 435 (2) of the CRR and the principles of due and proper management of pbb Group pursuant to section 26a (1) sentence 1 of the KWG.

Since its IPO in July 2015, pbb has been subject to the German Corporate Governance Code (GCGC) in accordance with section 161 of the German Public Limited Companies Act (Aktiengesetz – "AktG"). The Declaration of Compliance with the German Corporate Governance Code, most recently dated 24 February 2023, can be found on pbb's website under The Company / Corporate Governance. Any updated versions of the Declaration of Compliance published after the reporting date can also be found on pbb's website.

Reference is also made at this point to the Report of the Supervisory Board, which can be found in pbb Group's 2022 Annual Report, as well as to the Corporate Governance Statement, which is published on pbb's website. These sources are particularly relevant for the disclosure requirements as per Article 435 (2) (d) and (e) of the CRR regarding the Risk Committee and the information provided to the Management Board and the Supervisory Board, which is also described in the chapter entitled "General organisation and risk management principles".

In the 2022 financial year, the Supervisory Board established four additional committees to perform its duties: the Executive and Nomination Committee, the Audit and Digitalisation Committee, the Risk Management and Liquidity Strategy Committee, and the Remuneration Committee. The Supervisory Board and its committees held the following number of meetings in 2022:

- Supervisory Board: eight meetings (three extraordinary)
- Executive and Nomination Committee: seven meetings (two extraordinary)
- Audit and Digitalisation Committee: five meetings
- Risk Management and Liquidity Strategy Committee: five regular meetings and generally monthly credit meetings held as conference calls
- Remuneration Committee: four meetings.

Further information on the activities and composition of the Supervisory Board and its committees can be found in the 2022 Annual Report, the Report of the Supervisory Board and the Corporate Governance Statement.

Flow of information to the Management Board and the Supervisory Board in matters relating to risk

Flow of information to the Management Board

The following risk reports from Risk Management & Control (RMC) provide pbb's Management Board with regular information on key performance indicators and ratios, as well as material risk aspects that are significant for the Bank's business and risk management over time.

One very central and, at the same time, comprehensive report is the Group Risk Report, which is distributed not only to the Management Board but also to the Supervisory Board at regular intervals. It serves to provide key information on all Group-wide risk aspects. The quarterly report is divided into three parts. The first part consists of a management summary on the material risk aspects within the Group. The second part provides a detailed overview of capital adequacy, including the types of risk to be capitalised, default risk, market risk, liquidity risk, operational risk, business risk, stress tests and current topics. The third part is the appendix, which contains more detailed information on individual risk types. In addition to the quarterly reports, there is a monthly Group Risk Report, which essentially consists of a management summary of the above-mentioned risks.

The monthly ICAAP Flash Report contains information on pbb Group's risk-bearing capacity from a normative and economic perspective. A management summary shows the status of risk-bearing capacity, limit utilisation and includes comments on key developments based on preliminary figures.

The quarterly ICAAP Forecast Report (for Q1, Q2 and Q4) serves to provide forward-looking key ICAAP information. It includes projections for regulatory ratios (e.g. CET1 ratio, Tier 1 ratio) and the risk-bearing capacity for the baseline scenario as well as for stress scenarios.

The daily "Market Risk and Performance Report pbb Group" contains information on value-at-risk (VaR), including VaR limits and their utilisation for all business areas, sensitivities for all relevant market risk categories and economic performance. Special events and key changes are commented on from a market risk perspective.

The daily liquidity reports for pbb Group and pbb AG show the baseline, risk and stress scenario for pbb Group and pbb. Reporting is based on contractual cash flows, modelled and optional cash flows, as well as assumptions regarding new business and prolongations. The current and expected liquidity reserve is another component. Special events and key changes are commented on from a liquidity risk perspective.

The quarterly "Key Risk Indicator Report pbb Group" contains Group-wide key risk indicators (KRIs) that are used to monitor OpRisk exposure so that any potential increase in operational risk can be identified early on.

The "Annual Operational Risk Report pbb Group" provides an annual summary of pbb Group's operational risk profile. It includes analyses of OpRisk losses, results from reporting, such as the Key Risk Indicator Report, results of operational risk scenarios and the operational risk self-assessment.

The pbb Group report on daily limit breaches shows all limit breaches at counterparty and country level. Both new and existing limit breaches are reported to the CRO and to the members of pbb's Management Board responsible for Treasury and REF/PIF on a daily basis. A quarterly summary is provided to pbb's Management Board as part of the Group Risk Report.

The structure and content of the various reports are based, in particular, on the requirements set out in the German Minimum Requirements for Risk Management (MaRisk). If the Management Board or the Supervisory Board wish to make any changes to the way the information is presented or to the content, these requests are voiced either in bilateral talks with the reporting unit or at Group Risk Committee meetings.

Flow of information to the Supervisory Board

As far as the Supervisory Board is concerned, information on topics relevant to risk is provided not only to the entire Supervisory Board but also to the Risk Management and Liquidity Strategy Committee which supports the Supervisory Board's supervision of risk and liquidity management, concerns itself with the risk strategy, reviews the Management Board's risk reporting, and is involved in the credit approval process to the extent laid down in the Rules of Procedure. The committee also regularly discusses new business developments as well as the liquidity and funding status; it looks at all types of risks associated with the banking business, such as credit, market, liquidity and operational risks, taking the Group's risk-bearing capacity into account. The committee also concerns itself with the syndication business, foreclosures and development financings, with impairments of financial assets affected by impaired creditworthiness, the reporting of own funds in accordance with the German Solvency Regulation, country limits, asset/liability management, and the results of supervisory audits. In addition, it deals with individual loans requiring approval under the Rules of Procedure for the Management Board, with new business, regular re-submissions and approvals for change applications.

Management and supervisory functions of the Management Board and the Supervisory Board

As at the reporting date, pbb's Management Board members hold four and pbb's Supervisory Board members hold 15 management or supervisory functions which are actually carried out. These are distributed among the individual members of the Management Board and Supervisory Board as follows:

Management and supervisory functions of the Management Board and the Supervisory Board (EU OVB)

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 31.12.2022		
Dr. Günther Bräunig	2	2
Hans-Peter Storr	2	2
Dr. Thomas Duhnkrack	2	2
Susanne Klöß-Braekler	4	4
Georg Kordick	1	1
Gertraud Dirscherl	3	2
Olaf Neumann	1	1
Prof. Dr. Kerstin Hennig	3	3
Heike Theißing	1	1
Management Board of pbb as of 31.12.2022		
Andreas Arndt	1	1
Thomas Köntgen	1	1
Andreas Schenk	1	1
Marcus Schulte	1	1
Total	**23**	**22**

Details on the individual functions and mandates can be found in Note 81 “Members of the Supervisory Board and of the Management Board” in pbb Group's 2022 Annual Report.

Selecting members of the Management Board and the Supervisory Board

The Supervisory Board has defined specific objectives for its composition in accordance with recommendation C.1 of the GCGC in the version dated 28 April 2022 in its Rules of Procedure, and has adopted a profile of skills and expertise for the Supervisory Board as a whole which is published on the pbb website. pbb discloses as to how the requirements set out in this profile of skills and expertise are fulfilled in its Corporate Governance Statement; among other things, via a qualification matrix for the members of the Supervisory Board. In addition to these objectives, the Supervisory Board has introduced a catalogue of criteria for new Supervisory Board members, which takes into account Company-specific and professional requirements.

pbb has developed catalogues of criteria for filling positions on the Management Board or the Supervisory Board. These are described below and pbb considers them to be met by the current holders of these positions. The actual knowledge, skills and experience of the members of the Management Board and the Supervisory Board are published in their professional career histories on the Company's website under Company / Management and Company / Supervisory Board.

The following catalogues of criteria also form part of a “Suitability Policy” adopted by the Management Board and Supervisory Board; this policy also implements the requirements set out in EBA/ESMA Guidelines 2021/07, and describes processes and criteria for appointing members of the Management Board and Supervisory Board and also for carrying out (regular) suitability checks for such members. The following criteria have to be used to evaluate the individual suitability of a member of the Management Board/Supervisory Board:

- Time required: adequate time to perform the functions in the institution
- Compliance with the mandate restriction, in particular in accordance with Article 91 (3) of the CRD and section 25d (3) of the KWG (Supervisory Board) and section 25c (2) of the KWG (Management Board)
- Adequate knowledge, skills and experience to perform all duties
- Good reputation, sincerity and integrity
- Impartiality and independence.

Catalogue of criteria for the Management Board

According to section 25c of the KWG, an institution's senior managers (= members of the Management Board) have to have the requisite professional skills, be reliable and dedicate sufficient time to their tasks. The term “requisite professional skills” means that senior managers must have sufficient theoretical and practical knowledge in the business areas concerned and must have managerial experience.

- Functional expertise
    - As much experience as possible in at least one of pbb’s business areas, 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 funding of bank business models is an advantage;
    - Further relevant practical experience, related to
        - the banking sector and financial markets
        - legal requirements and regulatory frameworks
        - strategic planning and an understanding of pbb’s strategy and business plan
        - risk management
        - accounting and auditing
        - climate-related and environmental risks
        - the analysis of financial information, identification of material problems on the basis of this information, and appropriate checks and measures
        - the assessment of the effectiveness of the arrangements with regard to an effective corporate governance as well as effective controls;
    - Compliance (identification and assessment of money laundering and terrorist financing risks).
- Sector expertise
    - Several years of experience in the financial sector, preferably in commercial or asset-based banking.
- Level of seniority
    - Candidates have been admitted as a senior bank manager or, should it be their first-time appointment, can obtain such admission without any extended waiting period;
    - Long-standing managerial experience obtained from positions in executive bodies or key line management functions, including long-term and broad leadership experience, as well as experience in process/restructuring management;
    - Strong entrepreneurial mindset and experience in dealing with entrepreneurial tasks, including developing the business model and the strategy and/or performing business management tasks (preferably for a bank).

> Expertise

- According to section 25c of the KWG, an institution's senior managers are required to have expertise in the following areas in particular: strategic management, corporate development, lending authority, bank management, sales;
- Particularly with regard to lending knowledge and skills, sound judgement of loan decisions is a top priority. Long-standing, qualified and autonomous loan decision-making experience is required in this context;
- In terms of bank management, knowledge and experience in the context of profit and risk management, along with methodological knowledge in the various bank management areas, is highly relevant.

> Personality

- High degree of persuasiveness and determination based on well thought-out argumentation;
- Respectful and team-oriented leadership approach;
- Strong ability to establish and maintain sustainable, trusting relationships with employees, peers as well as external stakeholders of pbb;
- Strong commitment to developing the Company along with the ability to identify, implement and communicate required changes vis-à-vis others;
- Credible and trustworthy representative of pbb in public, including relevant (client) markets.

> Additional requirement for the CEO

- Candidates for the CEO position must have experience in dealing with external stakeholders (investors, the media, rating agencies, etc.) and several years of management experience at management board level, in addition to the requisite professional expertise in key areas (such as strategic planning, corporate management) as members of executive bodies or in key line management functions.

> Additional requirement for the CFO

- Candidates for the CFO position must have the requisite professional expertise in key areas (such as accounting, auditing, controlling) as members of executive bodies or in key line management functions.

> Additional requirement for REF/PIF

- Candidates for the Management Board position responsible for the REF/PIF division must have the requisite professional expertise in key areas (sales, lending and real estate expertise, as well as customer contacts) as members of executive bodies or in key line management functions.

> Additional requirement for the CRO

- Candidates for the CRO position must have the requisite professional expertise in key areas (such as lending business, risk management, back office, compliance) as members of executive bodies or in key line management functions.

> Additional requirement for Treasury

- Candidates for the Management Board position responsible for the Capital Markets/Treasury division must have the requisite professional expertise in key areas (such as capital markets, funding) as members of executive bodies or in key line management functions.

> Additional requirement for the Management Board member responsible for IT

- Candidates for the Management Board position responsible for IT must have the requisite professional expertise in key areas as members of executive bodies or in key line management functions, or this must be ensured by measures taken by the Bank to allow the candidate to acquire this expertise.

Profile of skills and expertise for the Supervisory Board

In accordance with recommendation C.1 of the GCGC (version dated 28 April 2022), the Supervisory Board adopted a profile of skills and expertise for the Supervisory Board which is published on pbb's website. This contains the following main requirements:

- At least five members of the Supervisory Board, more than three of whom are shareholder representatives, are to be independent as set out in recommendations C.6 and C.7 of the GCGC. Within the meaning of this Code recommendation, Supervisory Board members are not to be considered independent in particular if they have a personal or business relationship with pbb, its executive bodies, a controlling shareholder or an entity affiliated with the controlling shareholder that may cause a substantial and not merely temporary conflict of interest. As far as employee representatives are concerned, it is assumed that their independence is not affected by the mere fact that they hold the position of employee representatives and have an employment relationship with the Company at the same time.
- No more than two former members of the Management Board can be members of the Supervisory Board. Former Management Board members should not chair the Supervisory Board, or one of its committees.
- As a rule, the members of the Supervisory Board should not be older than 70 years, and the term of office of a Supervisory Board member should generally end upon the close of the ordinary Annual General Meeting following their reaching the age of 70.
- The maximum length of membership on the Supervisory Board shall generally be limited to three full terms of office within the meaning of section 102 (1) of the AktG.
- Compliance with the legal requirements regarding the maximum number of mandates (see section 25d (3) and (3a) of the KWG) and networking of the committees (see section 25d (7) sentence 4 of the KWG).
- The Supervisory Board as a whole should cover all necessary areas of expertise which might result from the factors described below in particular. Not all Supervisory Board members must have these competences, as long as each area is covered by at least one member or several members together. Areas of expertise include:
    - Expertise specific to the business model, especially real estate / real estate finance know-how
    - International business experience, especially Europe and the US
    - Capital markets experience
    - Adequate knowledge of the topics digitalisation and information technology and security, including data protection
    - Accounting and auditing within the meaning of section 100 (5) of the AktG / section 25d (9) sentence 3 of the KWG; accounting and auditing also comprise sustainability reporting and its audit
    - Risk management, including climate-related and environmental risks
    - Compliance and internal audit
    - Legal / corporate governance
    - Sustainability (especially environmental matters, social responsibility, and good corporate governance).

pbb discloses as to how the requirements set out in this profile of skills and expertise are fulfilled in its Corporate Governance Statement, among other things, via a qualification matrix for the members of the Supervisory Board as per section C.1 of the GCGC.

Catalogue of criteria for the Supervisory Board

According to section 25d of the KWG, the members of an institution's management or supervisory body must be reliable, have the expertise required to control, assess and monitor the business conducted by the company concerned, and must dedicate sufficient time to their tasks. Candidates should have the following expertise:

> Functional expertise

- Very good knowledge of the banking business, as well as extensive, broad-based entrepreneurial experience;
- In-depth understanding of the assessment of financial statements and reports submitted to the Supervisory Board, as well as of the regulatory environment in which banks operate.

> Sector expertise

- Long-standing experience in the financial services sector, financial administration or in financial control; several years of experience in a division of pbb are an advantage

> Level of seniority

- Long-standing practical experience in managing a company or a bank/organisation/company with international operations; or
- Long-standing practical experience in a leading position within a major company or a leading position within a public authority.

> Personality

- Very good advisory skills, persuasiveness, as well as diplomacy;
- Ability to build confidence along with responsible performance of supervisory tasks.

> Other experience

- For chairing the Supervisory Board: Candidates must be admitted as a senior manager as defined by the German Banking Act and must have bank management experience acquired as CEO or have long-standing experience as a management board member.
- For chairing/membership in the Audit and Digitalisation Committee: Special expertise in auditing (of annual financial statements) as defined by section 25d (9) sentence 2 of the KWG is required; at least one member of the Audit and Digitalisation Committee must have expertise in the field of accounting and at least one other member must have expertise in the auditing of annual financial statements (section 107 (4) sentence 3 of the AktG); the chairperson of the Audit and Digitalisation Committee should generally not also be the chairperson of the Supervisory Board at the same time.
- For chairing the Risk Management and Liquidity Strategy Committee: Special lending expertise required; the chairperson of the Risk Management and Liquidity Strategy Committee should not also be the chairperson of the Supervisory Board or the chairperson of another committee at the same time.

Succession planning

To minimise the risk of substantial loss of know-how, and to ensure that both the Management Board and the Supervisory Board are capable of acting at all times, the Supervisory Board has set different appointment or election dates for members of the Management Board and Supervisory Board alike. The Supervisory Board, and especially the Executive and Nomination Committee, also concerns itself with the continuous monitoring and refinement of the mid- to long-term succession planning. In line with the Suitability Policy, the Supervisory Board, when making proposals to the Annual General Meeting for the election of new share-holder representatives, ensures beforehand that the proposed candidates fulfil the statutory, regulatory, professional and personal requirements applicable to the respective position, and that when taking into account the knowledge of the respective candidate, specific goals for the composition of the Supervisory Board derived from the profile of skills and expertise for the entire Board are (or would be) complied with. Furthermore, the Supervisory Board makes sure that the respective candidates are able to dedicate the time required for the position.

In the reporting period, the Supervisory Board took important steps with regard to succession and continuity in the Supervisory Board with the (initially court-ordered) appointments of Gertraud Dirscherl and Prof. Dr Kerstin Hennig. Moreover, the Supervisory Board resolved to nominate Dr Louis Hagen for election to the Supervisory Board at the Annual General Meeting at its meeting on 10 January 2023, with the intention of positioning him as successor to Dr Bräunig as Chairman of the Supervisory Board if elected by the shareholders. A structured selection process has already been launched to find a suitable successor for Andreas Arndt, whose contract expires in April 2024. For further details on the work of the Supervisory Board, please refer to the Report of the Supervisory Board, which forms part of pbb Group's 2022 Annual Report.

Diversity strategy for selecting members

When filling management positions within the Company, the Supervisory Board and the Management Board consider the principle of diversity and, in particular, endeavour to ensure that the under-represented gender is appropriately represented (as set out in sections 76 (4), 111 (5) of the AktG). This prompted the Management Board and the Supervisory Board to adopt a Guideline on Fostering Diversity in the Management Board and the Supervisory Board in 2018. In principle, every candidate must be reliable and sufficiently qualified. Besides holding the necessary professional skills with regard to management and sector experience, candidates shall be trustworthy and of high integrity. Likewise, the selection of candidates shall take their requisite independence into account. Where several candidates are being considered, the goal of achieving maximum diversity shall also be considered. Moreover, the composition of executive bodies is supposed to reflect pbb Group's international activities as well as the structure of the workforce. Specific requirements exist with regard to the age and gender of Supervisory Board and Management Board members. For instance, the members of the Management Board should generally not be older than 60 years. To take account of the under-represented gender in each case, the Supervisory Board has set the following targets to be met by 30 June 2027:

- Target female quota for Supervisory Board members: 30%
- Target female quota for Management Board members: 20%.

As at 31 December 2022, the female quota within the Supervisory Board increased compared to the previous year's reporting date, from 25% to 44%, as a result of Dagmar Kollmann retiring from her position as at 31 October 2021 and the related vacancy on the Supervisory Board up until the court appointment of Gertraud Dirscherl as at 2 February 2022 and the court appointment of Prof. Dr Kerstin Hennig as at 19 July 2022 following the resignation of Oliver Puhl. Given that no changes were made to the composition of the Management Board, the female quota remained at 0%. The Management Board and Supervisory Board have decided to expand pbb's business model to include the new Real Estate Investment Management division. The Supervisory Board subsequently resolved to expand the Management Board by one additional member going forward. Dr Pamela Hoerr will join the Bank on 17 April 2023, initially as Senior General Manager. Following the usual familiarisation phase and subject to regulatory approval, she will then assume responsibility for the division as a Management Board member. pbb is set to meet the target of a 20% female quota on the Management Board with this new appointment. The Supervisory Board generally remains committed to ensuring targeted representation of the under-represented gender when filling vacancies or expanding the Management Board – given candidates who have the requisite skills and qualifications.

In April 2022 the Management Board also set target female quotas for the first and second management levels below the Management Board, increasing them by 5%, respectively. This brings the quotas targeted by 30 June 2027 to:

> Target female quota for the first management level below the Management Board: 20%
> Target female quota for the second management level below the Management Board: 20%.

At the first management level below the Management Board, the target quota was achieved in 2022 with a 20% share of female employees. The female quota at the second management level below the Management Board amounted to 13%. By raising the targets, pbb emphasises its commitment to increase the number of women in executive positions, and to ensure women are appropriately represented when filling vacancies, in a targeted manner – given candidates who have the requisite skills and qualifications. A higher awareness for this topic, across all levels of hierarchy, together with a corresponding management and corporate culture, also contribute to this objective. Moreover, pbb offers employees attractive working conditions – especially flexible working hours and remote working opportunities, which help balance family and working life. Please refer to the Non-financial Statement for further details.

Remuneration policies

The information pursuant to Article 450 of the CRR on the main features of pbb Group's remuneration policy and practices will be published as an appendix to this Disclosure Report on pbb's website (www.pfandbriefbank.com) under Investors / Mandatory Publications / Disclosure Report in accordance with Part 8 of the CRR following completion of the 2022 remuneration review, which is scheduled for the second quarter of 2023.

Regulatory and accounting consolidation

This chapter shows the information pursuant to Article 436 of the CRR on the scope of consolidation for accounting purposes (accounting scope of consolidation) and the regulatory scope of consolidation for pbb Group.

Prudential and accounting scope of consolidation

According to Part 8 of the CRR, companies which form part of the group of institutions as defined in section 10a of the KWG in conjunction with Articles 11 et seqq. of the CRR (regulatory scope of consolidation) must be included 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 pbb Group. As at 31 December 2022, there was no difference between the regulatory scope of consolidation pursuant to Articles 18 to 24 of the CRR and the accounting scope of consolidation for the consolidated financial statements prepared in accordance with IFRS (unchanged compared to the previous year).

The following table EU LI3 in accordance with Article 436 (b) of the CRR shows the subsidiaries of pbb that are consolidated for accounting and regulatory purposes.

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

a	b	c	d	e	f	g	h
	Method of accounting consolidation	Method of regulatory consolidation					Description of the entity
Name of the entity		Full consolidation	Proportional consolidation	Equity method	Neither consolidated nor deducted	Deducted	
Deutsche Pfandbriefbank AG, Munich, Germany	Full consolidation	X	-	-	-	-	Credit institution
IMMO Invest Real Estate GmbH, Munich, Germany	Full consolidation	X	-	-	-	-	Investment company, Acquisition of real estate (-companies) (salvage acquisitions)
CAPVERIANT GmbH, Munich, Germany	Full consolidation	X	-	-	-	-	Marketplace of municipal finance

As at the disclosure date, the regulatory scope of consolidation comprised pbb as the parent company of the group of institutions, as well as two other companies. pbb Group bases its determination of total regulatory capital and total exposures pursuant to the CRR on the IFRS consolidated financial statements pursuant to section 10a (5) of the KWG. pbb prepared its consolidated financial statements as at 31 December 2022 in accordance 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 single-entity financial statements of the consolidated companies are included in pbb's consolidated financial statements based on uniform accounting policies. All fully consolidated companies have the calendar year as their financial year.

As was the case in the previous year, the pbb Group did not have any non-consolidated subsidiaries as at 31 December 2022.

Changes in the financial year

There was one change to pbb Group's regulatory and accounting scope of consolidation in the 2022 financial year. As a result of the completed liquidation, Immo Immobilien Management Beteiligungsgesellschaft (in liquidation), Munich, was deconsolidated as at the end of October 2022. The deconsolidation had no impact on the financial position and financial performance of pbb Group.

In addition to its loan brokerage licence according to the German Trade Code (Gewerbeordnung – "GewO"), CAPVERIANT was granted the licence to operate as an investment firm (offering investment broking and investment advice) by BaFin in March 2022.

Exemption pursuant to Article 19 (1) of the CRR

As at the disclosure date, pbb Group does not apply the exemption provided in Article 19 (1) of the CRR in conjunction with section 31 (3) of the KWG for any of its subsidiaries.

Special-purpose entities

As in the previous year, pbb Group did not use any special-purpose entities as at 31 December 2022.

Subsidiaries with a capital shortfall

As in the previous year, pbb Group did not have any unconsolidated subsidiaries as at 31 December 2022, meaning that it also did not have any subsidiaries that have a capital shortfall within the meaning of Article 436 (g) of the CRR and whose participating interest is deducted from the liable capital of the parent company (pbb) (deduction method).

Transfer of own funds or repayment of liabilities

There is no material practical or legal impediment within pbb Group to the prompt transfer of own funds or repayment of liabilities by the parent company. The company that is key to the Group's financial stability, pbb, has its registered office in Germany. As in the previous year, there were no transfers of own funds or repayments of liabilities as defined by Article 7 (1) (a) of the CRR in the 2022 reporting year.

Quantitative information on the scopes of consolidation

In accordance with Article 436 (c) of the CRR, table EU LI1 shows a breakdown of the assets and liabilities in pbb's consolidated financial statements (IFRS) prepared in accordance with the requirements on regulatory consolidation, broken down by type of risks relevant for regulatory capital requirements in accordance with Part 3 of the CRR. pbb's consolidated statement of financial position (according to the regulatory scope of consolidation) is broken down into the parts relevant for the purposes of the credit risk framework, counterparty credit risk framework, securitisation framework and market risk framework, and into the part of the statement of financial position items that is not subject to regulatory capital requirements or a capital deduction.

Table EU LI2 in accordance with Article 436 (d) of the CRR also shows the main sources of differences between the carrying amounts in the financial statements (under the regulatory scope of consolidation) and the exposure values used for regulatory purposes (exposure at default, EaD) according to the COREP reporting of own funds and own funds requirements.

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

		a	b	c	d	e	f	g
		Carrying values as reported in published financial statements [1]	Carrying values under scope of regulatory consolidation [2]	Carrying values of items				
	All figures in € million			Subject to the credit risk framework [3]	Subject to the CCR framework [4]	Subject to the securitisation framework [5]	Subject to the market risk framework [6]	Not subject to own funds requirements or subject to deduction from own funds [7]
	Breakdown by asset classes according to the balance sheet in the published financial statements							
1	Cash reserve	1,044	1,044	1,044	-	-	-	-
2	Financial assets at fair value through profit or loss	1,075	1,075	513	562	-	207	-
3	Positive fair values of stand-alone derivatives	562	562	-	562	-	122	-
4	Debt securities	117	117	117	-	-	-	-
5	Loans and advances to customers	394	394	394	-	-	85	-
6	Shares in investment funds qualified as debt instruments	2	2	2	-	-	-	-
7	Financial assets at fair value through other comprehensive income	1,692	1,692	1,692	-	-	-	-
8	Debt securities	1,409	1,409	1,409	-	-	-	-
9	Loans and advances to customers	283	283	283	-	-	-	-
10	Financial assets at amortised cost after credit loss allowances	48,734	48,734	43,509	5,225	-	8,827	-
11	Financial assets at amortised cost before credit loss allowances	49,121	49,121	43,896	5,225	-	9,114	-
12	Debt securities	5,377	5,377	5,377	-	-	697	-
13	Loans and advances to other banks	5,763	5,763	575	5,188	-	28	-
14	Loans and advances to customers	37,839	37,839	37,802	37	-	8,389	-
15	Claims from finance lease agreements	142	142	142	-	-	-	-
16	Credit loss allowances on financial assets at amortised cost	-387	-387	-387	-	-	-287	
17	Positive fair values of hedge accounting derivatives	262	262	-	262	-	66	-
18	Valuation adjustment from portfolio hedge accounting (assets)	-84	-84	-84	-	-	-	-
19	Tangible assets	27	27	27	-	-	-	-
20	Intangible assets	49	49	19	-	-	-	30
21	Other assets	58	58	26	-	-	-	32
22	Current income tax assets	31	31	31	-	-	-	-
23	Deferred income tax assets	119	119	104	-	-	-	15
24	**Total assets**	**53,007**	**53,007**	**46,881**	**6,049**	**0**	**9,100**	**77**

All figures in € million		a	b	c	d	e	f	g
		Carrying values as reported in published financial statements [1]	**Carrying values under scope of regulatory consolidation** [2]	**Carrying values of items**				
				Subject to the credit risk framework [3]	**Subject to the CCR framework** [4]	**Subject to the securitisation framework** [5]	**Subject to the market risk framework** [6]	**Not subject to own funds requirements or subject to deduction from own funds** [7]
	Breakdown by liability classes according to the balance sheet in the published financial statements							
1	Financial liabilities at fair value through profit or loss	686	686	-	686	-	72	-
2	Negative fair values of stand-alone derivatives	686	686	-	686	-	72	-
3	Financial liabilities measured at amortised cost	47,672	47,672	-	369	-	4,596	47,303
4	Liabilities to other banks	7,507	7,507	-	355	-	121	7,152
5	Liabilities to customers	17,889	17,889	-	14	-	151	17,875
6	Bearer bonds	21,641	21,641	-	-	-	4,324	21,641
7	Subordinated liabilities	635	635	-	-	-	-	635
8	Negative fair values of hedge accounting derivatives	1,125	1,125	-	1,125	-	51	-
9	Valuation adjustment from portfolio hedge accounting (liabilities)	-112	-112	-	-	-	-	-112
10	Provisions	135	135	13	-	-	-	122
11	Other liabilities	57	57	-	-	-	-	57
12	Current income tax liabilities	19	19	-	-	-	-	19
13	**Liabilities**	**49,582**	**49,582**	**13**	**2,180**	**0**	**4,719**	**47,389**
14	Equity	3,425	3,425	-	-	-	-	3,425
15	**Total equity and liabilities**	**53,007**	**53,007**	**13**	**2,180**	**0**	**4,719**	**50,814**

[1] Carrying amounts in the financial statements in accordance with the International Financial Reporting Standards (IFRS) as reported in pbb's consolidated financial statements.
[2] There were no differences between the scope of prudential consolidation and the accounting scope of consolidation for pbb's consolidated financial statements (IFRS) as at the disclosure date.
[3] According to Pillar 3 Framework, Annex VI, exposures for which the exposure value is calculated pursuant to Part 3, Title II, Chapter 2 "Standardised Approach" and Chapter 3 "IRB Approach" of the CRR.
[4] According to Pillar 3 Framework, Annex VI, exposures for which the exposure value is calculated pursuant to Part 3, Title II, Chapter 6 "Counterparty credit risk" of the CRR (derivatives).
This column also includes exposures for which the exposure value is calculated pursuant to Part 3, Title II, Chapter 4 "Credit risk mitigation" of the CRR (securities financing transactions).
[5] According to Pillar 3 Framework, Annex VI, exposures for which the exposure value is calculated pursuant to Part 3, Title II, Chapter 5 "Securitisation" of the CRR.
[6] According to Pillar 3 Framework, Annex VI, exposures for which the exposure value is calculated pursuant to Part 3, Title IV "Own funds requirements for market risk" of the CRR.
[7] Column g shows the amounts deducted from the regulatory own funds in the balance sheet assets. Positions assigned a risk weight of 1,250% are not included in this figure; these are assigned to the appropriate risk category (columns c to f).

Breakdown of assets and liabilities

pbb Group's regulatory scope of consolidation and its scope of consolidation for accounting purposes are identical as at the disclosure date; there are no differences in amounts due to differences in the composition of the scope of consolidation (EU LI1, columns a and b).

In line with pbb Group's business model, which focuses on commercial real estate finance and also on public investment finance, focusing on business eligible for inclusion in Pfandbrief cover, assets are subject primarily to an own funds requirement for credit risk (column c).

In addition, transactions executed in foreign currencies are subject to an own funds requirement for market risk (column f). This means that these assets/liabilities are allocated to more than one risk type, which is why the sum of the values from columns (c) to (g) does not have to correspond to the carrying amount in column (b). As pbb Group does not maintain a trading book for securities or derivatives portfolios held to realise short-term gains, the transactions with regard to market risk are subject exclusively to the own funds requirement for the foreign exchange risk in the banking book.

Transactions subject to counterparty credit risk (derivative and securities financing transactions) are shown in column d. pbb Group uses standard market master agreements, including the relevant collateral agreements, for its derivatives and securities lending/repo transactions. The master agreements used for both derivatives and securities lending/repo transactions contain netting agreements according to which, in the event of insolvency for example, one single claim is established by netting all transactions concluded under a master agreement, meaning that in the event that the counterparty defaults, pbb is only entitled to, or obliged to pay, the net amount of the positive and negative market values of the individual transactions ("close-out netting"). This reduces the default risk in relation to the counterparty in question to a single net claim. In this respect, counterparty credit risk in the EU LI1 table refers to both assets and liabilities.

As at the end of the previous year, pbb Group did not have any exposures from securitisation (column e) in its portfolio as at the disclosure date.

The capital deduction items for regulatory adjustments in accordance with the CRR (for example for intangible assets) are shown in column g. Further information on these regulatory adjustments can be found in the chapter "Own funds". Positions assigned a risk weight of 1,250% are not included in column g; these are assigned to the appropriate risk framework (columns c to f).

The description of the main differences between the carrying amounts in financial statements based on regulatory scope of consolidation and the regulatory exposure values is shown in table EU LI2 below.

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

	All figures in € million	a	b	c	d	e
		Total	Items subject to			
			Credit risk framework	Securitisation framework	CCR framework	Market risk framework
1	**Assets carrying value amount under the scope of regulatory consolidation (as per EU LI1) [1]**	**53,007**	**46,881**	**0**	**6,049**	**9,100**
2	Liabilities carrying value amount under the regulatory scope of consolidation (as per EU LI1) [1]	53,007	13	-	2,180	4,719
3	Total net amount under the regulatory scope of consolidation [2]	-	46,868	-	3,869	4,381
4	**Off-balance-sheet amounts**	**3,069**	**3069**	**0**	**0**	———
5	Differences in valuations	-	-	-	-	———
6	Differences due to different netting rules, other than those already included in row 2	-5,174	-	-	-5,174	———
7	Differences due to consideration of provisions	395	395	-	-	———
8	Differences due to the use of credit risk mitigation techniques (CRMs)	-	-	-	-	———
9	Differences due to credit conversion factors	-1,197	-1,197	-	-	———
10	Differences due to Securitisation with risk transfer	-	-	-	-	———
11	Other differences	58	135	-	-	———
12	**Exposure amounts considered for regulatory purposes [3]**	**50,158**	**49,283**	**0**	**875**	**31**

[1] Carrying amounts as reported in IFRS financial statements under the scope of regulatory consolidation (EU LI1, column b).
[2] Net amount after offsetting assets and liabilities, calculated as the difference of line 1 minus line 2.
[3] Regulatory exposure values (exposure at default, EaD).

Main differences between carrying amounts in financial statements and regulatory exposure values

The assets in pbb's consolidated financial statements (IFRS) based on the regulatory scope of consolidation amounted to € 53,007 million as at the disclosure date (EU LI2, line 1). The regulatory exposure values (exposure at default, EaD) amounted to € 50,158 million (line 12).

The CRR-compliant EaD for default risk positions represents the outstanding exposure in the event of default and corresponds to the IFRS carrying amount (including accrued interest) for most products. In cases involving an existing committed available line, this – multiplied by the product-specific credit conversion factor (CCF) – is included as a further component of EaD. The CCF expresses how much of the available line is expected to be drawn down within one year before a possible default. Derivatives and repo transactions are an exception where the EaD does not match the carrying amount, but has to be calculated using a different methodology in accordance with the CRR. This applies, for example, to derivatives according to the regulatory SA-CCR method.

The main reasons behind the differences between the carrying amounts in the financial statements (IFRS) and the regulatory expo-sure values shown in table EU LI2 are:

- Effects resulting from the calculation of exposure values for transactions subject to counterparty credit risk (derivative and securities financing transactions). pbb Group applies the regulatory provisions on off-balance sheet netting (based on standard market master agreements and collateral agreements) for both derivative financial instruments and securities lending/repo transactions (line 6) where the contractual agreements meet the requirements for risk-mitigating recognition in accordance with Article 296 of the CRR and Article 206 of the CRR.

  pbb Group applies the standardised approach (SA-CCR) in accordance with Articles 274 et seqq. of the CRR to derivative transactions. For accounting purposes, however, derivatives – with the exception of balance sheet netting of derivatives concluded with Eurex Clearing – cannot be netted because they are subject to different conditions (e.g. different maturities or underlying currencies). The collateral agreements (collateral received or furnished) cannot be offset against the derivatives in the balance sheet either.

  As far as securities financing transactions are concerned, pbb Group applies the provisions for credit risk mitigation in accordance with Chapter 4 of the CRR, namely the Financial Collateral Comprehensive Method in accordance with Articles 223 et seqq. of the CRR. For regulatory purposes, counterparty credit risk is taken into account, in addition to credit risk, for securities subject to repurchase transactions, which remain part of the balance sheet assets.

- The inclusion of impairments on financial assets (stage 1 to 3) and provisions in off-balance sheet lending business for exposures to which the advanced Internal Ratings-Based Approach (IRBA) is applied (line 7). 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, but are taken into account in the comparison of value adjustments. In the comparison of value adjustments, the difference between the impairments recognised (stage 1 to stage 3) and provisions in off-balance sheet lending business in relation to the expected loss (EL) is calculated and a value adjustment deficit/excess is calculated.

- The regulatory inclusion of credit conversion factors (CCF) on off-balance sheet items (line 9). These include irrevocable loan commitments (such as loans that have not yet been disbursed in full) and contingent liabilities on guarantees and indemnity agreements. The irrevocable loan commitments account for large part of the off-balance sheet commitments.

- Items that are deducted from equity for regulatory purposes, such as parts of intangible assets (purchased and internally developed software), are not included in the exposure values. They are included in the "Other differences" item (line 11).

Similarly, both additional valuation adjustments (AVA) pursuant to Article 34 of the CRR in conjunction with Article 105 of the CRR with regard to the prudent valuation of assets measured at fair value and “prudential filters” pursuant to Articles 32, 33 and 35 of the CRR do not have any impact on the carrying amounts (IFRS) or the regulatory exposure values, which is why they are not shown in EU LI2, line 5. These prudential filters adjust the reported equity as calculated in accordance with the IFRS; they are deducted from CET1 in full (see EU CC1, line 7).

> The differences between the carrying amounts in the financial statements (line 1) and the regulatory exposure values (line 12) for market risk result from the calculation of the net foreign currency position using the market risk standardised approach pursuant to Articles 325 et seqq. of the CRR. The regulatory foreign currency risk is calculated on the basis of the present values of the assets/liabilities concerned, applying various offsets between asset and liability items in one and the same currency, while the carrying amounts in the financial statements show the respective assets and liabilities in foreign currency.

Prudent asset valuation

When calculating its own funds, pbb Group takes into account the requirements for the prudent valuation of the assets recognised at fair value in accordance with Article 34 of the CRR “Additional valuation adjustments” in conjunction with Article 105 of the CRR “Requirements for prudent valuation”.

In order to calculate these additional valuation adjustments (AVA), pbb Group applies the Simplified Approach in accordance with Chapter II “Simplified Approach for the Determination of AVAs” of Delegated Regulation (EU) 2016/101. According to Article 4 (1) of the Delegated Regulation, institutions may apply this approach if the sum of the absolute value of fair-valued assets and liabilities, as stated in the institution's financial statements, less the offsetting options set out in Article 4 (2), is less than the threshold value of € 15 billion. For pbb Group, this figure amounted to € 4.6 billion as at the disclosure date (31 December 2021: € 4.7 billion) in accordance with pbb’s consolidated financial statements (IFRS).

Disclosure of table EU PV1 in accordance with Article 436 (e) of the CRR is not relevant for pbb Group in this respect. pbb Group does not apply the core approach for the determination of additional valuation adjustments (AVAs) according to Chapter III of the Delegated Regulation.

Neither the additional valuation adjustments (AVAs) pursuant to Article 34 of the CRR in conjunction with Article 105 of the CRR with regard to the prudent valuation of assets measured at fair value nor the further “prudential filters” pursuant to Articles 32 (Securitised assets), 33 (Cash flow hedges and changes in the value of own liabilities) and 35 (Unrealised gains and losses measured at fair value) of the CRR have any impact on the carrying amounts in the financial statements (IFRS) or the regulatory exposure values. These prudential filters adjust the reported equity as calculated in accordance with the IFRS; they increase or reduce the regulatory own funds.

As at the disclosure date, the additional valuation adjustments for pbb Group amounted to around € 5 million (0.1% of the above-mentioned total of the absolute value of the assets and liabilities recognised at fair value). These are deducted in full from Common Equity Tier 1 (CET1) capital, as shown in the EU CC1 table (line 7).

Own funds and assets

Own funds

This chapter presents the information pursuant to Article 437 of the CRR on pbb Group's own funds. It also contains general information on own funds and eligible liabilities (MREL). Disclosure pursuant to Article 437a of the CRR (Total Loss Absorbing Capacity, TLAC) is not relevant for pbb Group. pbb is not classed as a Global Systemically Important Institution (G-SII) and is not subject to Article 92a or Article 92b of the CRR. The full qualitative and quantitative MREL information is to be disclosed for the first time as at 1 January 2024 pursuant to section 51 (3) of the German Act on the Recovery and Resolution of Credit Institutions (SAG) and pursuant to no. 10 of Implementing Regulation (EU) 2021/763 (regulatory reporting and disclosure of MREL).

The main features of the Common Equity Tier 1, Additional Tier 1 and Tier 2 capital instruments issued by pbb in accordance with Article 437 (b) and (c) of the CRR are shown in the separate appendix "Disclosure Report (31 December 2022) - Main Features of Capital Instruments". The Appendix is published together with this Disclosure Report on pbb's website under Investors / Mandatory Publications/ Disclosure Report in accordance with part 8 of the CRR.

Regulatory own funds

The regulatory own funds decisive for meeting the regulatory capital requirements, and therefore for the capital backing of the various risk types – credit risk (counterparty credit risk), market risk, operational risk, settlement risk and CVA risk – are determined based on the regulations set out in Part 2 of the CRR. They comprise:

- Common Equity Tier 1 (CET1) capital
- Additional Tier 1 (AT1) capital and
- Tier 2 (T2) capital.

They are based on pbb's consolidated financial statements (IFRS), taking regulatory adjustments into account.

The following table EU CC1 pursuant to Article 437 (a), (d), (e) and (f) of the CRR and Article 444 (e) of the CRR shows the composition of regulatory own funds, as well as the capital ratios and capital buffers for pbb Group as at the disclosure date. The own funds shown in the table are based on the COREP reporting of own funds and own funds requirements submitted by pbb Group as at 31 December 2022 (including the consolidated profit for 2022 less the AT1 coupon of € 17 million and less the dividend of € 0.95 per share carrying dividend entitlements proposed by the Management Board and the Supervisory Board, subject to approval by the Annual General Meeting). The Management Board and Supervisory Board will propose to the Annual General Meeting on 25 May 2023 to distribute a dividend of € 0.95 per share entitled to dividends (totalling around € 128 million).

Table EU CC1 contains cross-references (column b) to the relevant item in table EU CC2 for the reconciliation of regulatory own funds with pbb's published consolidated statement of financial position or reported equity (IFRS).

EU CC1: Composition of regulatory own funds

All figures in € million, unless otherwise stated		a	b
		31.12.2022	**Source based on reference numbers/letters of the balance sheet under the regulatory scope of consolidation**
Common Equity Tier 1 (CET1) capital: instruments and reserves			
1	Capital instruments and the related share premium accounts	2,017	Reference EU CC2, line 31
1a	thereof: subscribed capital	380	Reference EU CC2, line 32
1b	thereof: additional paid-in capital	1,637	Reference EU CC2, line 33
2	Retained earnings [1)]	1,044	Reference EU CC2, line 34
3	Accumulated other comprehensive income (and other reserves)	-106	Reference EU CC2, line 35
EU-3a	Funds for general banking risk	-	
4	Amount of qualifying items referred to in Article 484 (3) CRR and the related share premium accounts subject to phase out from CET1	-	
5	Minority interests (amount allowed in consolidated CET1)	-	
EU-5a	Independently reviewed interim profits net of any foreseeable charge or dividend	43	Reference EU CC2, line 36
6	**Common Equity Tier 1 (CET1) capital before regulatory adjustments**	**2,998**	Reference EU CC2, line 38
Common Equity Tier 1 (CET1) capital: regulatory adjustments			
7	Additional value adjustments (negative amount)	-5	Reference EU CC2, line 39
8	Intangible assets (net of related tax liability) (negative amount)	-30	Reference EU CC2, line 40
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) CRR are met) (negative amount)	-15	Reference EU CC2, line 41
11	Fair value reserves related to gains or losses on cash flow hedges of financial instruments that are not valued at fair value	27	Reference EU CC2, line 42
12	Negative amounts resulting from the calculation of expected loss amounts	-	Reference EU CC2, line 43
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	-	Reference EU CC2, line 44
15	Defined-benefit pension fund assets (negative amount)	-	
16	Direct, indirect and synthetic holdings by an institution of own CET1 instruments (negative amount)	-	
17	Direct, indirect and synthetic holdings of the CET 1 instruments of financial sector entities where those entities have reciprocal cross holdings with the institution designed to inflate artificially the own funds of the institution (negative amount)	-	
18	Direct, indirect and synthetic holdings by the institution of the CET1 instruments of financial sector entities where the institution does not have a significant investment in those entities (amount above 10% threshold and net of eligible short positions) (negative amount)	-	
19	Direct, indirect and synthetic holdings by the institution of the CET1 instruments of financial sector entities where the institution has a significant investment in those entities (amount above 10% threshold and net of eligible short positions) (negative amount)	-	
EU-20a	Exposure amount of the following items which qualify for a RW of 1250%, where the institution opts for the deduction alternative	-	
EU-20b	thereof: qualifying holdings outside the financial sector (negative amount)	-	
EU-20c	thereof: securitisation positions (negative amount)	-	
EU-20d	thereof: free deliveries (negative amount)	-	

All figures in € million, unless otherwise stated		(a) **31.12.2022**	(b) **Source based on reference numbers/letters of the balance sheet under the regulatory scope of consolidation**
21	Deferred tax assets arising from temporary differences (amount above 10% threshold, net of related tax liability where the conditions in Article 38 (3) CRR are met) (negative amount)	-	
22	Amount exceeding the 17,65% threshold (negative amount)	-	
23	thereof: 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	-	
25	thereof: deferred tax assets arising from temporary differences	-	
EU-25a	Losses for the current financial year (negative amount)	-	
EU-25b	Foreseeable tax charges relating to CET1 items except where the institution suitably adjusts the amount of CET1 items insofar as such tax charges reduce the amount up to which those items may be used to cover risks or losses (negative amount)	-	
27	Qualifying AT1 deductions that exceed the AT1 items of the institution (negative amount)	-	
27a	Other regulatory adjustments to CET1 capital (including IFRS 9 transitional adjustments when relevant)	-132	Reference EU CC2, line 45
28	**Total regulatory adjustments to Common Equity Tier 1 (CET1)**	**-155**	Reference EU CC2, line 46
29	**Common Equity Tier 1 (CET1) capital**	**2,843**	Reference EU CC2, line 47
Additional Tier 1 (AT1) capital: instruments			
30	Capital instruments and the related share premium accounts	298	Reference EU CC2, line 48
31	thereof: classified as equity under applicable accounting standards	298	Reference EU CC2, line 49
32	thereof: classified as liabilities under applicable accounting standards	-	Reference EU CC2, line 50
33	Amount of qualifying items referred to in Article 484 (4) CRR and the related share premium accounts subject to phase out from AT1 as described in Article 486(3) CRR	-	
EU-33a	Amount of qualifying items referred to in Article 494a(1) CRR subject to phase out from AT1	-	
EU-33b	Amount of qualifying items referred to in Article 494b(1) CRR 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	Reference EU CC2, line 51
Additional Tier 1 (AT1) capital: regulatory adjustments			
37	Direct, indirect and synthetic holdings by an institution of own AT1 instruments (negative amount)	-	
38	Direct, indirect and synthetic holdings of the AT1 instruments of financial sector entities where those entities have reciprocal cross holdings with the institution designed to inflate artificially the own funds of the institution (negative amount)	-	
39	Direct, indirect and synthetic holdings of the AT1 instruments of financial sector entities where the institution does not have a significant investment in those entities (amount above 10% threshold and net of eligible short positions) (negative amount)	-	
40	Direct, indirect and synthetic holdings by the institution of the AT1 instruments of financial sector entities where the institution has a significant investment in those entities (net of eligible short positions) (negative amount)	-	

All figures in € million, unless otherwise stated		(a) **31.12.2022**	(b) **Source based on reference numbers/letters of the balance sheet under the regulatory scope of consolidation**
41	Empty set in the EU	-	
42	Qualifying T2 deductions that exceed the T2 items of the institution (negative amount)	-	
42a	Other regulatory adjustments to AT1 capital	-	
43	**Total regulatory adjustments to Additional Tier 1 (AT1) capital**	**0**	Reference EU CC2, line 53
44	**Additional Tier 1 (AT1) capital**	**298**	Reference EU CC2, line 54
45	**Tier 1 capital (T1 = CET1 + AT1)**	**3,141**	Reference EU CC2, line 55
Tier 2 (T2) capital: instruments			
46	Capital instruments and the related share premium accounts	505	Reference EU CC2, line 56
47	Amount of qualifying items referred to in Article 484 (5) CRR and the related share premium accounts subject to phase out from T2 as described in Article 486(4) CRR	-	
EU-47a	Amount of qualifying items referred to in Article 494a (2) CRR subject to phase out from T2	-	
EU-47b	Amount of qualifying items referred to in Article 494b (2) CRR 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	61	Reference EU CC2, line 57
51	**Tier 2 (T2) capital before regulatory adjustments**	**566**	Reference EU CC2, line 58
Tier 2 (T2) capital: regulatory adjustments			
52	Direct, indirect and synthetic holdings by an institution of own T2 instruments and subordinated loans (negative amount)	-	
53	Direct, indirect and synthetic holdings of the T2 instruments and subordinated loans of financial sector entities where those entities have reciprocal cross holdings with the institution designed to inflate artificially the own funds of the institution (negative amount)	-	
54	Direct, indirect and synthetic holdings of the T2 instruments and subordinated loans of financial sector entities where the institution does not have a significant investment in those entities (amount above 10% threshold and net of eligible short positions) (negative amount)	-	
55	Direct, indirect and synthetic holdings by the institution of the T2 instruments and subordinated loans of financial sector entities where the institution has a significant investment in those entities (net of eligible short positions) (negative amount)	-	
EU-56a	Qualifying eligible liabilities deductions that exceed the eligible liabilities items of the institution (negative amount)	-	
EU-56b	Other regulatory adjustments to T2 capital	-	
57	**Total regulatory adjustments to Tier 2 (T2) capital**	**0**	Reference EU CC2, line 60
58	**Tier 2 (T2) capital**	**566**	Reference EU CC2, line 61
59	**Total capital (TC = T1 + T2)**	**3,707**	Reference EU CC2, line 62
60	**Total Risk exposure amount**	**17,017**	

All figures in € million, unless otherwise stated		(a) 31.12.2022	(b) Source based on reference numbers/letters of the balance sheet under the regulatory scope of consolidation
61	**Common Equity Tier 1 (as a percentage of total risk exposure amount)**	**16.71%**	
62	**Tier 1 (as a percentage of total risk exposure amount)**	**18.46%**	
63	**Total capital (as a percentage of total risk exposure amount)**	**21.78%**	
64	Institution CET1 overall capital requirement (CET1 requirement in accordance with Article 92 (1) CRR, plus additional CET1 requirement which the institution is required to hold in accordance with point (a) of Article 104(1) CRD, plus combined buffer requirement in accordance with Article 128(6) CRD) expressed as a percentage of risk exposure amount)	8.62%	
65	thereof: capital conservation buffer requirement	2.50%	
66	thereof: countercyclical buffer requirement	0.22%	
67	thereof: systemic risk buffer requirement	-	
EU-67a	thereof: Global Systemically Important Institution (G-SII) or Other Systemically Important Institution (O-SII) buffer	-	
EU-67b	thereof: additional own funds requirements to address the risks other than the risk of excessive leverage	1.41%	
68	**Common Equity Tier 1 available to meet buffers (as a percentage of risk exposure amount)**	**10.58%**	
Amounts below the thresholds for deduction (before risk weighting)			
72	Direct and indirect holdings of own funds and eligible liabilities of financial sector entities where the institution does not have a significant investment in those entities (amount below 10% threshold and net of eligible short positions)	-	
73	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 (amount below 17.65% thresholds and net of eligible short positions)	-	
75	Deferred tax assets arising from temporary differences (amount below 17,65% threshold, net of related tax liability where the conditions in Article 38 (3) CRR are met)	105	
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	27	
78	Credit risk adjustments included in T2 in respect of exposures subject to internal ratings-based approach (prior to the application of the cap)	61	
79	Cap for inclusion of credit risk adjustments in T2 under internal ratings-based approach	82	
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)	-	

Tier 1 capital

Regulatory Tier 1 capital pursuant to Article 25 of the CRR consists of Common Equity Tier 1 (CET1) capital and Additional Tier 1 (AT1) capital. It is based on the reported equity according to IFRS in the amount of € 3,425 million, with regulatory adjustments.

Common Equity Tier 1 capital

The conditions for Common Equity Tier 1 capital pursuant to Articles 26 to 50 of the CRR apply as at the disclosure date.

As in the previous year, pbb's subscribed capital (share capital) amounted to around € 380 million (EU CC1, line 1a) as at 31 December 2022, and is composed of 134,475,308 registered ordinary bearer shares in the form of no-par value shares with a notional interest in the subscribed capital (share capital) of around € 2.83 per share. As in the previous year, pbb did not hold any treasury shares in the 2022 financial year.

In addition to the subscribed capital (share capital), the Common Equity Tier 1 capital consists of the capital reserve of € 1,637 million (line 1b), the retained earnings of € 1,087 million (lines 2 and EU-5a, after deduction of the dividend of € 0.95 per no-par value share carrying dividend entitlements (€ 128 million) proposed by the Management Board and the Supervisory Board, subject to approval by the Annual General Meeting) and the accumulated other comprehensive income of € -106 million (line 3). The Common Equity Tier 1 capital before regulatory adjustments amounts to € 2,998 million (line 6).

The Common Equity Tier 1 capital before regulatory adjustments of € 2,998 million is subject to various regulatory adjustments defined in the CRR, with a total of € 155 million being deducted (line 28):

> The value adjustments based on the requirements for the prudent valuation of assets recognised at fair value in the amount of € 5 million are deducted from CET1 in full (line 7).

  When calculating its own funds, pbb Group takes into account the requirements for the prudent valuation of assets recognised at fair value in accordance with Article 34 CRR in conjunction with Article 105 of the CRR. pbb Group uses the simplified approach to determine these additional valuation adjustments. Institutions may apply this approach if the sum of the absolute value of fair-valued assets and liabilities, as stated in the institution's financial statements, less the offsetting options, is less than the threshold value of € 15 billion. For pbb Group, this figure amounts to € 4.6 billion as at the disclosure date in accordance with pbb's consolidated financial statements (IFRS).

> Intangible assets (mainly purchased and internally developed software) totalling € 49 million are deducted from CET1 in accordance with Article 37 of the CRR in conjunction with Article 36 (1) (b) of the CRR in the amount of € 30 million (line 8).

  An exception to the deduction of intangible assets under Article 36 (1) (b) of the CRR applies to prudently valued software assets that are calculated over a regulatory amortisation period of three years (but no longer than the amortisation period for accounting purposes). pbb Group applies this provision to prudently valued software assets in the amount of € 19 million.

  The European Banking Authority (EBA) is using this provision in an attempt to strike a balance between two conflicting interests: on the one hand, in the context of digitalisation, it is necessary and desirable for banks to invest in their IT without having to fear a negative impact on their regulatory own funds, while on the other hand, the software used only has a very limited period of use in the event that a bank is liquidated or taken over.

  In addition to the amortisation period for accounting purposes, which is not changed, a shorter regulatory amortisation period of a maximum of three years applies. This must not exceed the amortisation period for accounting purposes. The start of the amortisation period is the time at which the institution starts using the software, as in the statement of financial position. Software that is not yet used by the institution (because it is still being developed) still has to be deducted from CET1 in full. Once the institution starts using the software, only the

difference between the amortisation recognised in the balance sheet and the higher regulatory amortisation is to be deducted from CET1. Each software item and each addition must be considered separately.

The software that is not deducted from CET1 is to be allocated to risk-weighted assets and assigned a risk weight of 100%. pbb Group reports these software assets in the IRB approach in the exposure class "Other non-credit obligation assets".

> Deferred tax assets that do not result from temporary differences (after offsetting against deferred tax liabilities in the balance sheet) are deducted from CET1 in accordance with Article 38 (3) of the CRR in the amount of € 15 million (line 10). The deferred tax assets of € 105 million resulting from temporary differences are risk-weighted in the credit risk standardised approach in the "Other items" exposure class.

> The hedging reserve for cash flow hedges of € -27 million still included in the accumulated other comprehensive income is fully eliminated again in accordance with Article 33 of the CRR (line 11, € +27 million).

> For banks using the advanced Internal Ratings-Based Approach (IRBA), if a value adjustment deficit arises from the impairments recognised (stage 1 to stage 3) and from provisions in the lending business compared to the expected loss, this must be deducted from CET1 in accordance with Article 159 of the CRR (line 12). At the end of 2022, there was a value adjustment excess of € 61 million (line 50), which explains why there is no deduction item.

> The item "Other regulatory adjustments" in the amount of € -132 million (EU CC1, line 27a) primarily includes the following deduction items from CET1:

- Obligations from bank levies in the amount of € 42 million. This includes, in particular, expenses for collateral payments for the European bank levy paid to BaFin as the national resolution authority, as well as the payments made to the compensation scheme of German banks (statutory deposit protection scheme) and the deposit protection fund of private banks in the Federal Association of German Banks (BdB). The deduction obligation is derived from the ECB's SREP notice.

- Gains and losses from derivative liabilities recognised at fair value resulting from the institution's own credit risk (debt value adjustment, DVA) amounting to € 8 million. The deduction obligation for the DVA is based on Article 33 (1) (c) of the CRR.

- An amount of € 51 million for the minimum loss coverage for non-performing exposures (NPL backstop).

  In this context, pbb Group has credit losses of € 42 million resulting in an NPL backstop in accordance with the minimum loss coverage for non-performing exposures under Regulation (EU) 2019/630. Articles 47a et seqq. of the CRR introduced by this Regulation shall apply to defaulted loans and advances extended or increased after 26 April 2019.

  Credit losses that lead to an NPL backstop according to the addendum of the European Central Bank (ECB) amount to € 3 million. The ECB Addendum ("Addendum to the ECB Guidance to banks on non-performing loans: supervisory expectations for prudential provisioning of non-performing exposures") extended the rules to cover non-performing exposures classified as such from 1 April 2018 onwards, meaning that they are not covered by Articles 47a et seqq. of the CRR mentioned above.

  In addition to the aforementioned regulations, institutions receive SREP (Supervisory Review and Evaluation Process) notices from the ECB for their exposures classified as non-performing before 1 April 2018 (legacy portfolio). These contain NPL backstop recommendations in a slightly modified form. For pbb Group, the legacy portfolio results in an NPL backstop of around € 6 million.

- As a precautionary measure, an amount of € 30 million was deducted from CET1 in accordance with Article 3 of the CRR. Article 3 of the CRR allows the institutions to make an additional capital deduction beyond the provisions of the CRR. In light of the difficult macro-economic environment and the tense situation on the real estate markets, pbb made use of this as a precautionary measure.

All in all, pbb Group's Common Equity Tier 1 capital (CET1) amounted to € 2,843 million as at the disclosure date.

Additional Tier 1 capital

In addition to its Common Equity Tier 1 (CET1) capital, pbb Group's Tier 1 capital consists of Additional Tier 1 (AT1) capital, to which the provisions set out in Articles 51 to 61 of the CRR apply.

The Additional Tier 1 capital comprises subordinated bearer bonds with a total nominal amount of € 300 million and an initial interest rate of 5.750% p.a., which were issued by pbb in April 2018 and are available for an indefinite period without any incentive to redeem. From an accounting perspective, the AT1 capital is also classed as own funds in accordance with IFRS, since – subject to certain conditions – there is neither an obligation to repay the bond nor is there an obligation for ongoing debt service (discretionary coupon in principle). A coupon payment of € 17 million was made in relation to the AT1 capital in the first half of 2022, reported under the liabilities item "Additional equity instruments (AT1)".

While the bonds have a perpetual maturity, pbb has an ordinary right to call them for the first time as at 28 April 2023 and every five years thereafter, and also for regulatory and tax reasons, in each case subject to the prior approval of the relevant supervisory authority. The creditors have no ordinary right to call the bonds.

The bond terms also provide for a temporary write-down of the nominal amount if the CET1 ratio falls below a 7.0% threshold. The threshold of 7.0% relates primarily to pbb Group in accordance with IFRS. This threshold also applies at the level of the individual institution in accordance with the German Commercial Code (HGB) if pbb is no longer exempt from the requirement to determine the regulatory ratios on a single-entity basis. In addition to the above-mentioned contractual write-down right, the responsible resolution authority has the (statutory) option of converting the bonds into pbb shares, or to write the bonds down (bail-in) in the event of a crisis involving pbb – subject to conditions that are more closely defined by law.

The bonds constitute direct, unsecured and subordinated liabilities of the issuer that rank pari passu with each other, but enjoy priority over liabilities of the issuer resulting from Common Equity Tier 1 capital instruments. In the event of resolution measures in relation to the issuer, and in the event of the dissolution, liquidation or insolvency of the issuer, the liabilities arising from the bonds are only serviced once the Tier 2 capital has been repaid.

No regulatory adjustments were made in relation to the Additional Tier 1 capital.

With this issue, pbb Group's Additional Tier 1 (AT1) capital amounts to € 298 million (nominal amount of € 300 million less € 2 million in issue costs).

Tier 2 capital

pbb Group's Tier 2 (T2) capital comprises longer-term subordinated liabilities to which the provisions set out in Articles 62 to 65 apply.

All subordinated liabilities are subject to interest at standard market rates. The issuer is not subject to any early repayment obligations. They are subordinated to the claims of all other creditors which are not themselves subordinated (in the event of liquidation, insolvency or in the event of any other insolvency or other proceedings), but rank senior to both the liquidation claims of the shareholders and the claims associated with the AT1 capital instruments (Additional Tier 1 capital). No subsequent restrictions can be imposed on subordination, term or period of notice. Debtor termination rights are possible, subject to certain contractual requirements. The original terms are at least 5 years and are usually between 10 and 20 years. The responsible resolution authority has the (statutory) option of converting the Tier 2 capital into pbb shares, or to write the Tier 2 capital down (bail-in) in the event of a crisis involving pbb – subject to conditions that are more closely defined by law.

Taking discounts and amortisation into account in accordance with Article 64 CRR, and after adding the value adjustment excess of € 61 million (EU CC1, line 50), the Tier 2 (T2) capital comes to a total of € 566 million as at the disclosure date. In accordance with Article 62 (d) of the CRR, any value adjustment excess – resulting from the comparison of impairments recognised and provisions set up in the lending business against the expected loss – is to be added to the Tier 2 (T2) capital in an amount corresponding to a maximum of 0.6% of the risk-weighted assets (RWA). By contrast, no regulatory adjustments were made in relation to the Tier 2 capital.

Own funds

pbb Group's own funds total € 3,707 million (€ +4 million compared to 30 June 2022) and consist of € 2,843 million Common Equity Tier 1 capital (CET1, € +2 million), Additional Tier 1 (AT1) capital of € 298 million and € 566 million Tier 2 capital (T2, € +1 million).

Net income after taxes of € 187 million had a particularly positive effect on the development of own funds. Regulatory own funds for the first half of 2022 are calculated excluding consolidated profit generated during the period from 1 January to 30 June 2022. The slight increase in Common Equity Tier 1 capital (CET1) by € 2 million is primarily attributable to an overall increase of capital deductions (regulatory adjustments), especially to the capital deduction made as a precautionary measure in accordance with Article 3 of the CRR and the minimum loss coverage for non-performing exposures (NPL backstop). The modest € 1 million increase in Tier 2 (T2) capital is primarily due to the generated value adjustment excess. This was offset by repayments of subordinated liabilities that fell due and decreases in the recognition of subordinated bonds due to daily amortisation in accordance with Article 64 of the CRR.

Reconciliation of regulatory own funds and reported equity

Pursuant to Article 437 (a) of the CRR, the following table EU CC2 shows the reconciliation of regulatory own funds to pbb's consolidated statement of financial position as at 31 December 2022, in particular to the reported equity (IFRS). The table contains cross-references (column c) to the relevant regulatory own funds item in the EU CC1 table.

pbb Group's reported equity (IFRS) amounts to € 3,425 million at the end of 2022 (EU CC2, line 29). Further information on the composition of reported equity under IFRS and its development is set out in pbb Group's 2022 Annual Report (published on pbb's website), in the notes "Statement of changes in equity" (page 106), 24 "Equity" (page 127) and 63 "Equity" (pages 156 et seq.).

EU CC2: Reconciliation of regulatory own funds to balance sheet in the audited financial statements

		a	c
All figures in € million		**Balance sheet as in published financial statements under regulatory scope of consolidation [1]** **31.12.2022**	**Reference**
Assets - Breakdown by asset clases according to the balance sheet in the published financial statements			
1	Cash reserve	1,044	
2	Financial assets at fair value through profit or loss	1,075	
3	Financial assets at fair value through other comprehensive income	1,692	
4	Financial assets at amortised cost after credit loss allowances	48,734	
5	Positive fair values of hedge accounting derivatives	262	
6	Valuation adjustment from portfolio hedge accounting (assets)	-84	
7	Tangible assets	27	
8	Intangible assets	49	
9	Other assets	58	
10	Current income tax assets	31	
11	Deferred income tax assets	119	
12	**Total assets**	**53,007**	
Liabilities - Breakdown by liability clases according to the balance sheet in the published financial statements			
13	Financial liabilities at fair value through profit or loss	686	
14	Financial liabilities measured at amortised cost	47,672	
15	Subordinated liabilities [2]	635	
16	Negative fair values of hedge accounting derivatives	1,125	
17	Valuation adjustment from portfolio hedge accounting (liabilities)	-112	
18	Provisions	135	
19	Other liabilities	57	
20	Current income tax liabilities	19	
21	**Liabilities**	**49,582**	
22	Equity attributable to the shareholders of pbb	3,125	
23	Subscribed capital	380	
24	Additional paid-in capital	1,637	
25	Retained earnings	1,214	
26	Accumulated other comprehensive income	-106	
27	Additional equity instruments (AT1) [2]	298	
28	Non-controlling interests [3]	2	
29	**Equity**	**3,425**	
30	**Total equity and liabilities**	**53,007**	
Shareholders' Equity			
	Common Equity Tier 1 (CET1): Instruments and reserves		
31	Capital instruments and the related share premium accounts	2,017	Reference EU CC1, line 1
32	thereof: subscribed capital	380	Reference EU CC1, line1a
33	thereof: additional paid-in capital	1,637	Reference EU CC1, line 1b
34	Retained earnings	1,044	Reference EU CC1, lines 2 and EU-5a
35	Accumulated other comprehensive income	-106	Reference EU CC1, line 3
36	Independently reviewed interim profits net of any foreseeable charge or dividend	43	Reference EU CC1, line EU-5a
37	Distribution of a dividend (for information purposes) [4]	128	
38	**Common Equity Tier 1 (CET1) before regulatory adjustments**	**2,998**	Reference EU CC1, line 6
	Common Equity Tier 1 (CET1): regulatory adjustments		
39	Additional value adjustments (negative amount)	-5	Reference EU CC1, line 7
40	Intangible assets (net of related tax liability) (negative amount)	-30	Reference EU CC1, line 8
41	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) CRR are met) (negative amount)	-15	Reference EU CC1, line 10

All figures in € million		a **Balance sheet as in published financial statements under regulatory scope of consolidation [1)]** **31.12.2022**	c **Reference**
42	Fair value reserves related to gains or losses on cash flow hedges	27	Reference EU CC1, line 11
43	Negative amounts resulting from the calculation of expected loss amounts	-	Reference EU CC1, line 12
44	Gains or losses on liabilities valued at fair value resulting from changes in own credit standing	-	Reference EU CC1, line 14
45	Other regulatory adjustments to CET1 capital	-132	Reference EU CC1, line 27a
46	**Total regulatory adjustments to Common equity Tier 1 (CET1)**	**-155**	Reference EU CC1, line 28
47	**Common Equity Tier 1 (CET1) capital**	**2,843**	Reference EU CC1, line 29
	Additional Tier 1 (AT1) capital: Instruments and reserves		
48	Capital instruments and the related share premium accounts	298	Reference EU CC1, line 30
49	thereof: classified as equity under applicable accounting standards	298	Reference EU CC1, line 31
50	thereof: classified as liabilities under applicable accounting standards	-	Reference EU CC1, line 32
51	**Additional Tier 1 (AT1) capital before regulatory adjustments**	**298**	Reference EU CC1, line 36
	Additional Tier 1 (AT1) capital: regulatory adjustments		
52	Not applicable at pbb	-	
53	**Total regulatory adjustments to Additional Tier 1 (AT1) capital**	**0**	Reference EU CC1, line 43
54	**Additional Tier 1 (AT1) capital**	**298**	Reference EU CC1, line 44
55	**Tier 1 capital (T1 = CET1 + AT1)**	**3,141**	Reference EU CC1, line 45
	Tier 2 (T2) capital: Instruments and reserves		
56	Capital instruments and the related share premium accounts	505	Reference EU CC1, line 46
57	Credit risk adjustments	61	Reference EU CC1, line 50
58	**Tier 2 (T2) capital before regulatory adjustments**	**566**	Reference EU CC1, line 51
	Tier 2 (T2) capital: regulatory adjustments		
59	Not applicable at pbb	**-**	
60	**Total regulatory adjustments to Tier 2 (T2) capital**	**0**	Reference EU CC1, line 57
61	**Tier 2 (T2) capital**	**566**	Reference EU CC1, line 58
62	**Total capital (TC = T1 + T2)**	**3,707**	Reference EU CC1, line 59

[1)] There are no differences between the scope of prudential consolidation pursuant to the CRR and the accounting scope of consolidation for the IFRS consolidated financial statements as at the disclosure date. As a result, columns a and b of the EU CC2 template were combined into one column a in accordance with the Pillar 3 framework, Annex 8, no. 9.

[2)] Additional Tier 1 (AT1) capital qualifies as equity for accounting purposes pursuant to the IFRS because there is no obligation to repay, or to make debt servicing payments on an ongoing basis.
Tier 2 (T2) capital instruments are included in the IFRS balance sheet under liabilities.

[3)] The non-controlling interests (line 28) result from the participating interest held by Caisse des Dépôts et Consignations (CDC) in CAPVERIANT GmbH. These are not included in regulatory own funds.

[4)] The Management Board and Supervisory Board will propose to the Annual General Meeting on 25 May 2023 to distribute a dividend of € 0.95 per share entitled to dividends (totalling € 128 million, see line 37). Regulatory own funds are calculated excluding this proposed dividend, subject to approval by the Annual General Meeting

Own funds and eligible liabilities (Minimum Requirements for Own Funds and Eligible Liabilities Instruments, MREL)

Under the recovery and resolution regime (pursuant to the Bank Recovery and Resolution Directive (BRRD), which was revised within the framework of the EU Banking Package in 2019 and implemented into national law through the German Act on the Recovery and Resolution of Credit Institutions, institutions are required to maintain, in addition to regulatory capital, liabilities that can be converted to equity in accordance with the MREL ratio. However, there are clear limits to the ability to convert liabilities (the "bail-in capacity"). In particular, there is the principle that no investor may be placed in a less advantageous position than is permitted under regular insolvency proceedings (the principle of 'no creditor worse off' – or NCWO). For example, this means that deposits covered by a national deposit guarantee scheme are not eligible for bail-in and thus excluded from conversion.

The exact level of the MREL ratio is determined by regulators individually for each institution concerned. pbb aims to maintain an MREL ratio of at least 8% in relation to total liabilities and own funds (TLOF) in line with the regulatory target set by the resolution authority. At € 1.6 billion, this requirement was significantly exceeded in the 2022 financial year (2021: € 1.8 billion).

Information on own funds and eligible liabilities (MREL) pursuant to Article 437a of the CRR and section 51 (3) of the German Act on the Recovery and Resolution of Credit Institutions (Sanierungs- und Abwicklungsgesetz – "SAG") in conjunction with EBA standard EBA/ITS/2020/06 is to be disclosed for the first time as at 31 December 2024.

Relief pursuant to Articles 468 and 473a of the CRR

pbb Group does not apply the relief pursuant to Article 468 of the CRR (temporary treatment of unrealised gains and losses measured at fair value through other comprehensive income, period of temporary treatment: 1 January 2020 to 31 December 2022) or the optional transitional arrangements pursuant to Article 473a of the CRR (transitional arrangements for mitigating the impact of the introduction of IFRS 9 on own funds, period of temporary treatment: 1 January 2020 to 31 December 2024) in conjunction with Amending Regulation (EU) 2020/873 ("CRR Quick Fix").

In previous years, pbb Group also did not make use of the original optional transitional arrangements under Article 473a of the CRR in conjunction with Guidelines EBA/GL/2018/01 for mitigating the impact of the introduction of IFRS 9 as of 1 January 2018.

As a result, the own funds, capital ratios and leverage ratio presented in this Disclosure Report represent the full impact of the introduction of IFRS 9 and the expected credit loss impairment model, as well as the full impact of unrealised gains/losses from financial instruments measured at fair value (equity item "Accumulated other comprehensive income").

Consequently, table IFRS 9/Article 468-FL "Comparison of institutions' own funds and capital and leverage ratios with and without the application of transitional arrangements for IFRS 9 or analogous ECLs, and with and without the application of the temporary treatment in accordance with Article 468 of the CRR" in accordance with the Guidelines EBA/GL/2020/12 is not relevant for pbb Group.

Countercyclical capital buffer

This chapter sets out information on the countercyclical capital buffer for pbb Group in accordance with Article 440 of the CRR.

Countercyclical capital buffer

The countercyclical capital buffer (CCyB) pursuant to section 10d of the KWG is considered to be a macroprudential instrument of banking supervision. It is designed, in particular, to counter the risk of excessive credit growth in the banking sector, i.e. in times of excessive credit growth, the banks are obliged to create an additional capital buffer (using Common Equity Tier 1 (CET1) capital), increasing their loss-absorbing capacity in the event of a crisis.

Domestic countercyclical capital buffer

Pursuant to section 10d (3) of the KWG, the domestic countercyclical capital buffer (CCyB) can generally amount to between 0% and 2.5% of the total risk exposure amount (risk-weighted assets, RWA) and is subject, in Germany, to quarterly checks by the Federal Financial Supervisory Authority (BaFin) to ensure it is appropriate, with adjustments being made if necessary. This involves BaFin assessing the intensity of the cyclical systemic risk and evaluating which value is appropriate for the domestic countercyclical capital buffer.

As at the disclosure date of 31 December 2022, the value for Germany remains unchanged at 0%.

In its general administrative act of 31 January 2022, BaFin increased the domestic countercyclical capital buffer from 0% to 0.75% of risk-weighted assets as at 1 February 2022. This is designed as a preventative measure to strengthen the resilience of the German banking system. The implementation period for institutions is twelve months, and the aforementioned value has to be applied to the calculation of the institution-specific countercyclical capital buffer from 1 February 2023 onwards.

Individual institution-specific countercyclical capital buffer

pbb Group has to determine its own institution-specific CCyB (ICCyB). The value of the countercyclical capital buffer relevant for Germany has to be taken into account and applied to the sum of the relevant credit exposures in Germany. In addition to the domestic countercyclical capital buffer, foreign countercyclical capital buffers from countries in which pbb Group has receivables also have to be included. The countercyclical capital buffers valid in these countries (EU CCyB1, column m) also have to be recognised on a pro rata basis. This means that the institution-specific countercyclical capital buffer for pbb Group is derived from the weighted average of the domestic and foreign capital buffers for those countries in which pbb Group has significant credit exposures to the private sector (EU CCyB1: sum of the weighted own funds requirement per country in accordance with column l, multiplied by the country-specific CCyB in % according to column m).

Capital buffer for systemic risks

In addition to the increase in the domestic countercyclical capital buffer described above (to 0.75% effective 1 February 2023), BaFin also introduced a sector-specific systemic risk buffer of 2.00% with its “General Administrative Act ordering a capital buffer for systemic risks under section 10e of the KWG” dated 30 March 2022. This systemic risk buffer applies to exposures concerning loans secured by residential real estate, and is also intended to counteract the specific risks in the residential real estate market that cannot be fully covered by the CCyB. The own funds requirement for the systemic risk buffer, like the CCyB, must be maintained in Common Equity Tier 1 (CET1) capital. Banks have until 1 February 2023 to comply with the requirement.

Quantitative information on the countercyclical capital buffer

The following tables pursuant to Article 440 (a) and (b) of the CRR show the amount of the pbb Group-specific countercyclical capital buffer (EU CCyB2), as well as the geographical distribution of credit exposures relevant for the calculation of the countercyclical capital buffer (EU CCyB1).

The institution-specific countercyclical capital buffer for pbb Group as at 31 December 2022 is up 0.20 percentage points to 0.22% compared to the end of the first six months of 2022, meaning that it remains well below the applicable maximum ratio of 2.5%.

The rise was due to increased countercyclical capital buffers in countries in which pbb Group has receivables. The calculation of pbb Group's ICCyB took into account the country-specific countercyclical capital buffers of the Czech Republic (1.5%, +1.0 percentage points compared to 30 June 2022), the United Kingdom (1.0%, +1.0 percentage points), Sweden (1.0%, +1.0 percentage points), Romania (0.5%, +0.5 percentage points), Slovakia (1.0%, unchanged), and Luxembourg (0.5%, unchanged). The domestic countercyclical capital buffers of the other countries in which pbb Group has significant exposures either amount to 0%, or have not been set by the competent supervisory authority.

The own funds requirement of € 37 million (0.22% of the risk-weighted exposure amounts) is to be held in Common Equity Tier 1 (CET1) capital in accordance with section 10d (1) of the KWG. To cover this, and to cover the own funds requirement for the capital conservation buffer (CCoB) of 2.5%, pbb Group has € 2,077 million in Common Equity Tier 1 capital available after complying with the Common Equity Tier 1 capital ratio of 4.5% of total risk exposure.

EU CCyB2: Amount of institution-specific countercyclical capital buffer

All figures in € million, unless otherwise stated		a
1	Total risk exposure amount [1]	17,017
2	Institution specific countercyclical capital buffer rate (%)	0.22
3	Institution specific countercyclical capital buffer requirement [2]	37

[1] Total risk-weighted exposure amounts (risk-weighted assets, RWA) according to EU OV1, column (a).
[2] Own funds requirement for ICCyB, calculated by multiplying line 1 and line 2.

In addition to the increase in the domestic countercyclical capital buffer (+0.75 percentage points effective 1 February 2023), further increases of the country-specific countercyclical capital buffers from countries in which pbb Group has receivables are scheduled for the first half of 2023: Czech Republic (+1.0 percentage points), France (+0.5 percentage points), and Sweden (+1.0 percentage points).

EU CCyB1: Geographical distribution of credit exposures relevant for the calculation of the countercyclical capital buffer

			a	b	c	d	e	f	g	h	i	j	k	l	m
			General credit exposures		Relevant credit exposures – Market risk		Securitisation exposures Exposure value for non-trading book	Total exposure value [1]	Own fund requirements				Risk-weighted exposure amounts [2]	Own fund requirements weights [3] (%)	Countercyclical buffer rate [4] (%)
All figures in € million, unless otherwise stated			Exposure value under the standardised approach	Exposure value under the IRB approach	Sum of long and short positions of trading book exposures for SA	Value of trading book exposures for internal models			Relevant credit risk exposures - Credit risk	Relevant credit exposures – Market risk	Relevant credit exposures – Securitisation positions in the non-trading book	Total			
10	**Breakdown by country [5]**														
1	(AT)	Austria	437	294	-	-	-	731	12	-	-	12	150	1.05	0.00
2	(AW)	Aruba	23	-	-	-	-	23	-	-	-	-	-	-	-
3	(BD)	Bangladesh	22	-	-	-	-	22	-	-	-	-	-	-	-
4	(BE)	Belgium	101	19	-	-	-	120	1	-	-	1	13	0.05	0.00
5	(BM)	Bermuda	26	1	-	-	-	27	-	-	-	-	-	-	-
6	(CH)	Switzerland	22	128	-	-	-	150	6	-	-	6	75	0.55	0.00
7	(CZ)	Czech Republic	-	384	-	-	-	384	24	-	-	24	300	2.05	1.50
8	(DE)	Germany	663	13,188	-	-	-	13,851	189	-	-	189	2,363	16.24	0.00
9	(ES)	Spain	395	388	-	-	-	783	33	-	-	33	413	2.8	0.00
10	(FI)	Finland	-	284		-	-	284	15	-	-	15	188	1.32	0.00
11	(FR)	France	435	3,612	-	-	-	4,047	216	-	-	216	2,700	18.51	0.00
12	(GB)	United Kingdom	-	2,418	-	-	-	2,418	135	-	-	135	1,688	11.58	1.00
13	(GH)	Ghana	34	-	-	-	-	34	-	-	-	-	-	-	-
14	(HU)	Hungary	-	149	-	-	-	149	7	-	-	7	88	0.59	0.00
15	(IE)	Ireland	95	-	-	-	-	95	-	-	-	-	-	-	0.00
16	(IT)	Italy	-	113	-	-	-	113	5	-	-	5	63	0.45	0.00
17	(JE)	Jersey	25	-	-	-	-	25	2	-	-	2	25	0.18	-
18	(KY)	Cayman Islands	44	-	-	-	-	44	-	-	-	-	-	-	-
19	(LI)	Liechtenstein	-	5	-	-	-	5	-	-	-	-	-	-	0.00
20	(LU)	Luxembourg	128	111	-	-	-	239	14	-	-	14	175	1.23	0.50

All figures in € million, unless otherwise stated			a	b	c	d	e	f	g	h	i	j	k	l	m
			General credit exposures		Relevant credit exposures – Market risk		Securitisation exposures Exposure value for non-trading book	Total exposure value [1]	Own fund requirements				Risk-weighted exposure amounts [2]	Own fund requirements weights [3] (%)	Countercyclical buffer rate [4] (%)
			Exposure value under the standardised approach	Exposure value under the IRB approach	Sum of long and short positions of trading book exposures for SA	Value of trading book exposures for internal models			Relevant credit risk exposures - Credit risk	Relevant credit exposures – Market risk	Relevant credit exposures – Securitisation positions in the non-trading book	Total			
10	**Breakdown by country [5]**														
21	(NL)	Netherlands	-	1,162	-	-	-	1,162	53	-	-	53	663	4.58	0.00
22	(OM)	Oman	52	-	-	-	-	52	-	-	-	-	-	-	-
23	(PL)	Poland	-	1,720	-	-	-	1,720	99	-	-	99	1,238	8.46	0.00
24	(PT)	Portugal	113	-	-	-	-	113	2	-	-	2	25	0.16	0.00
25	(RO)	Romania	-	137	-	-	-	137	7	-	-	7	88	0.58	0.50
26	(SA)	Saudi Arabia	13	-	-	-	-	13	-	-	-	-	-	-	0.00
27	(SE)	Sweden	-	886	-	-	-	886	68	-	-	68	850	5.80	1.00
28	(SI)	Slovenia	-	64	-	-	-	64	3	-	-	3	38	0.26	0.00
29	(SK)	Slovakia	-	105	-	-	-	105	4	-	-	4	50	0.34	1.00
30	(US)	United States of America	122	4,866	-	-	-	4,988	270	-	-	270	3,375	23.17	0.00
20	**Total**		**2,750**	**30,036**	**0**	**0**	**0**	**32,786**	**1,166**	**0**	**0**	**1,166**	**14,575**	**100.00**	——

[1] Exposure value (exposure at default, EaD) calculated as the sum of the EaD amounts in columns a to e.
[2] Risk-weighted exposure amounts (risk-weighted assets, RWA).
[3] The weighting applied to the countercyclical capital buffer ratio in each country, calculated as the sum of the own funds requirements in that country (column j) divided by the sum of all own funds requirements (column j, line 020).
[4] Country-specific countercyclical capital buffer (CCyB) rates pursuant to European Systemic Risk Board (ESRB)/Bank for International Settlements (BIS).
[5] Country: location of the debtor, i.e. the debtor's place of habitual residence or the location of the assets (real estate) in cases involving specialised lending.

Own funds requirements and RWA

This chapter shows information on own funds requirements and risk-weighted exposure amounts (risk-weighted assets, RWA) for pbb Group in accordance with Article 438 (d) to (g) of the CRR. As the parent company of a group of institutions within the meaning of section 10a of the KWG in conjunction with Articles 11 et seqq. of the CRR, pbb is responsible for complying with the own funds requirements on a combined basis (regulatory scope of consolidation). The information for assessing internal capital adequacy in accordance with Article 438 (a) to (c) of the CRR is described in the chapter “Economic capital and risk-bearing capacity (ICAAP)”.

Methods for determining the own funds requirement

pbb Group applies the provisions set out in the CRR, meaning that it is subject to the disclosure requirements of Part 8 of the CRR. The CRR/CRD regulations 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, credit risk (counterparty credit risk, including CVA risk), market risk, operational risk and settlement risk must all be backed with capital. The regulatory ratios are calculated based on the IFRS accounting standards.

Credit risk (excluding counterparty credit risk)

When calculating the own funds requirements for credit risk, pbb Group uses the advanced IRB approach based on internal ratings in accordance with Articles 142 et seqq. of the CRR, as well as the standardised approach (SA-CCR) in accordance with Articles 111 et seqq. of the CRR.

As far as its participating interests are concerned, it applies the simple IRBA risk weight for equity exposures in accordance with Article 155 (2) of the CRR. By contrast, pbb Group does not apply the simple IRBA risk weight for specialised lending pursuant to Article 153 (5) of the CRR.

As at the end of the previous year, pbb Group did not have any exposures from securitisation in its portfolio as at the disclosure date. There are currently no plans for any new securitisation of pbb’s own receivables. pbb Group’s business strategy currently does not define new securitisation transactions as a corporate objective.

Counterparty credit risk

pbb Group applies the SA-CCR to the calculation of own funds requirements for counterparty credit risk pursuant to Part 3, Title II, Chapter 6 of the CRR (i.e. for derivative transactions) in accordance with Articles 274 et seqq. of the CRR.

pbb Group uses the SA-CCR pursuant to Article 384 of the CRR to calculate the additional own funds requirement for OTC derivatives for credit valuation adjustment risk (CVA risk) according to Part 3, Title VI of the CRR.

As far as securities financing transactions (securities lending/repo transactions) are concerned, pbb Group applies the provisions for credit risk mitigation in accordance with Chapter 4 of the CRR, namely the Financial Collateral Comprehensive Method in accordance with Articles 223 et seqq. of the CRR.

When it comes to calculating the own funds requirements for contributions to the default fund of a qualifying central counterparty, pbb Group applies the risk-sensitive approach in accordance with Article 308 of the CRR.

Market risk

Capital backing for market risk pursuant to Part 3, Title IV of the CRR is calculated using the SA-CCR in accordance with Articles 325 et seqq. of the CRR at pbb Group. pbb does not currently use its own internal models.

Operational risk

Capital backing for operational risk pursuant to Part 3, Title III of the CRR is calculated using the SA-CCR in accordance with Articles 317 et seqq. of the CRR at pbb Group. pbb does not currently use its own internal models.

Settlement risk

The own funds requirements for settlement risk and risks associated with outstanding delivery pursuant to Part 3, Title V of the CRR are calculated based on the rules set out in Articles 378 and 379 of the CRR.

Quantitative information on own funds requirements and RWA

Table EU OV1 in accordance with Article 438 (d) of the CRR shows the risk-weighted assets RWA) and the corresponding regulatory minimum own funds requirements, broken down by risk type pursuant to Part 3 of the CRR.

Table EU CR10.5 pursuant to Article 438 (e) of the CRR also shows the risk-weighted assets, the minimum own funds requirement and other information for equity exposures for which the simple IRBA risk weight is used. As far as its participating interests are concerned, pbb Group applies the simple IRBA risk weight for equity exposures in accordance with Article 155 (2) of the CRR.

By contrast, pbb Group does not apply the simple IRBA risk weight for specialised lending pursuant to Article 153 (5) of the CRR. Tables EU CR10.1 to EU CR10.4 in accordance with Article 438 (e) of the CRR are therefore not relevant for pbb Group.

Disclosure of the tables EU INS1 pursuant to Article 438 (f) of the CRR and EU INS2 (Financial conglomerates) pursuant to Article 438 (g) of the CRR is also still not relevant for pbb Group as at the disclosure date. pbb does not hold any material interest in an insurance undertaking, a reinsurance undertaking or an insurance holding company, nor is there any authorisation granted by the competent supervisory authority pursuant to Article 49 (1) of the CRR not to deduct such holdings of own funds instruments.

EU OV1: Overview of total risk exposure amounts

		a	b	c
		Risk weighted exposure amounts (RWA) [1]	Risk weighted exposure amounts (RWA) [1]	Total own funds requirements
All figures in € million		31.12.2022	30.09.2022	31.12.2022
1	**Credit risk (excluding CCR)**	**15,594**	**15,947**	**1,248**
2	thereof: the standardised approach	1,902	2,051	152
3	thereof: the foundation IRB (FIRB) approach	-	-	-
4	thereof: slotting approach	-	-	-
EU 4a	thereof: equities under the simple risk-weighted approach	0.1	0.1	0.01
5	thereof: the advanced IRB (AIRB) approach	13,693	13,896	1,095
6	**Counterparty credit risk**	**432**	**388**	**35**
7	thereof: the standardised approach [2]	106	99	8
8	thereof: internal model method (IMM)	-	-	-
EU 8a	thereof: exposures to a CCP [3]	1	1	0.1
EU 8b	thereof: credit valuation adjustment - CVA	146	153	12
9	thereof: other CCR [4]	179	134	14
15	**Settlement risk**	**0**	**0**	**0**
16	**Securitisation exposures in the non-trading book (after the cap)**	**0**	**0**	**0**
17	thereof: SEC-IRBA approach	-	-	-
18	thereof: SEC-ERBA (including IAA)	-	-	-
19	thereof: SEC-SA approach	-	-	-
EU 19a	thereof: 1,250% / deduction	-	-	-
20	**Position, foreign exchange and commodities risks (Market risk)**	**31**	**22**	**3**
21	thereof: the standardised approach	31	22	2
22	thereof: IMA	-	-	-
EU 22a	**Large exposures [5]**	**0**	**0**	**0**
23	**Operational risk**	**959**	**922**	**77**
EU 23a	thereof: basic indicator approach	-	-	-
EU 23b	thereof: standardised approach	959	922	77
EU 23c	thereof: advanced measurement approach	-	-	-
24	Amounts below the thresholds for deduction (subject to 250% risk weight) (For information) [6]	261	271	21
29	**Total**	**17,017**	**17,279**	**1,361**

[1] Risk-weighted exposure amounts (risk-weighted assets, RWA).
[2] Exposures calculated pursuant to Part 3, Title II, Chapter 6 of the CRR (derivative transactions).
[3] Exposures for contributions to the default fund of a central counterparty (Eurex Clearing).
[4] Exposures for securities financing transactions (securities lending transactions/repurchase agreements).
[5] pbb Group does not maintain a trading book for securities or derivatives portfolios held to realise short-term gains.
[6] Deferred tax assets dependant on future profitability (not) resulting from temporary differences.
The disclosure in this line is for information purposes only; the amount is already included in line 1 (credit risk) and line 2 (thereof: standardised approach).

EU CR10.5: Equity exposures under the simple risk-weighted approach

	a	b	c	d	e	f
Categories **All figures in € million, unless otherwise stated**	**On-balance-sheet exposure [1]**	**Off-balance-sheet exposure [1]**	**Risk weight [2]**	**Exposure value [3]**	**Risk weighted exposure amount [4]**	**Expected loss amount [5]**
Private equity exposures	-	-	190%	-	-	-
Exchange-traded equity exposures	-	-	290%	-	-	-
Other equity exposures	0.02	-	370%	0.02	0.1	-
Total	**0.02**	**0**		**0.02**	**0.1**	**0**

[1] Carrying values in financial statements (nominal value for off-balance sheet items).
[2] Simple risk weight for equity exposures.
[3] Exposure value (exposure at default, EaD).
[4] Risk-weighted exposure amount (risk-weighted assets, RWA).
[5] Expected loss (EL)

Risk-weighted assets (RWA))

As at 31 December 2022, risk-weighted exposure amounts (RWA) of pbb Group across all risk types amount to € 17,017 million; this represents a slight decline of € 262 million in the fourth quarter of 2022 (30 September 2022: € 17,279 million).

In credit risk (€ -353 million under the IRB and SA-CCR) there were RWA increases due to new business in commercial real estate financing during the fourth quarter of 2022, which significantly exceeded repayments/maturities. This was offset by various effects such as individual PD/LGD rating improvements, changes in the allocation of exposures to the exposure classes (corporates vs. small and medium-sized enterprises, SMEs), and changes in the commercial real estate financings included in the CRSA exposure class “Exposures associated with particularly high risk”. Furthermore, currency effects, above all regarding the US dollar (USD) and the British pound sterling (GBP), led to a decrease in RWA.

With regard to counterparty credit risk (€ +45 million), higher RWA resulted primarily from new securities financing transactions (repo and reverse repo transactions) entered into. Offsetting effects included a lower volume of derivatives – due to increased interest rate levels resulting in a lower fair value of the hedging derivatives – and a decrease in CVA risk for OTC derivatives.

Market risk increased (€ +9 million), mainly due to credit spread changes seen for the US dollar (USD) and pound sterling (GBP).

Operational risk (€ +37 million), the regulatory own funds requirement of which is calculated annually at year-end, increased as at the end of 2022.

Own funds requirements

The minimum own funds requirement for the above-mentioned risk types as at 31 December 2022 remained unchanged at 8% of RWA, amounting to a total of € 1,361 million (30 September 2022: € 1,382 million) as at the disclosure date. In line with pbb Group’s business model, which focuses on commercial real estate finance and also on public investment finance, around 95% of the own funds requirement is attributable to default risks (including counterparty credit and CVA risks), with less than 1% attributable to market risks and around 6% to operational risks.

The total own funds requirement – including the capital conservation buffer (CCoB) of 2.5%, the institution-specific countercyclical capital buffer (ICCB) of 0.22% and the Pillar 2 capital requirement (P2R) of 2.5% – was at 13.22%. As at the disclosure date, it amounts to a total of € 2,250 million (30 September 2022: € 2,262 million).

Surplus own funds

The surplus own funds (own funds available less the own funds requirements pursuant to EU OV1) amount to € 2,346 million as at the disclosure date (30 September 2022: € 2,333 million).

Capital ratios

The information in this chapter on regulatory minimum capital ratios and regulatory minimum SREP capital requirements complements the information in the chapters entitled "Own funds" (Article 437 of the CRR) and "Economic capital and risk-bearing capacity (ICAAP)" (Article 438 of the CRR).

Regulatory minimum capital ratios

The Capital Requirements Regulation (CRR), together with the Capital Requirements Directive (CRD), forms the basis for calculating regulatory capital and minimum capital ratios. According to the regulations set out therein, the Common Equity Tier 1 (CET1) ratio (Common Equity Tier 1 divided by risk-weighted assets) must not fall below 4.5% in 2022, the Tier 1 (T1) capital ratio (Tier 1 divided by risk-weighted assets) must not fall below 6.0%, and the own funds ratio (own funds divided by risk-weighted assets) must not fall below 8.0%.

As the parent company of a group of institutions within the meaning of section 10a of the KWG in conjunction with Articles 11 et seqq. CRR, pbb is responsible for complying with the capital ratios on a combined basis. The requirements for the regulatory capital ratios were met at all times in 2022. As at 31 December 2022, the capital ratios are (EU CC1, lines 61 to 63):

- CET1 ratio: 16.7% (30 June 2022: 17.2%)
- Tier 1 ratio: 18.5% (30 June 2022: 19.0%)
- Own funds ratio: 21.8% (30 June 2022: 22.5%).

The decline in capital ratios in the second half of 2022 was attributable mainly to an increase in risk-weighted assets (RWA: € +536 million), driven above all by new business conducted in commercial real estate financing while repayments/maturities were down, and the modest increase in regulatory own funds (€ +4 million) during this period.

Disclosure in accordance with Article 437 (f) of the CRR is not relevant for pbb Group, as pbb applies the provisions of the CRR.

SREP

Throughout the 2022 financial year pbb Group also complied with the minimum capital requirements of the ECB's Supervisory Review and Evaluation Process (SREP), which extend beyond the existing regulatory requirements.

The aim of the Supervisory Review and Evaluation Process is to conduct a comprehensive analysis of the institutions supervised by the ECB. This includes an assessment of the business model, risk and corporate governance, the risk situation, as well as capital and liquidity resources. Based on the results of the analysis and benchmark comparisons, the ECB can opt to impose requirements on the institution's minimum capital or liquidity resources that extend beyond the existing supervisory requirements.

Minimum CET1 ratio and total own funds requirements

As a material result of the SREP, pbb has been required to maintain a minimum CET1 ratio of 9.5% since 2020 (excluding the countercyclical capital buffer, which varies according to country, and hence, for specific portfolios – as at 31 December 2022, it stood at 0.22%). This capital requirement is based on the final Basel III requirements (excluding transitional rules) and comprises a Pillar 1 minimum capital requirement (4.5%), a Pillar 2 capital requirement, P2R: 2.5%) and the capital conservation buffer, CCB: 2.5%).

Furthermore, pbb had to fulfil a total capital requirement of 13.0% from 2020 onwards (excluding the countercyclical capital buffer, which varies according to country, and hence, for specific portfolios). It is based on the final Basel III requirements (excluding transitional rules) and comprises a Pillar 1 minimum requirement (8.0%), a Pillar 2 capital requirement (2.5%) and the capital conservation buffer (2.5%). As of 12 March 2020, the ECB adjusted SREP requirements for banks under its supervision: since then, they have been required to hold approximately 1.4% (56.25%) of the Pillar 2 capital requirement of 2.5% in the form of CET1 capital, and 1.9% (75%) as Tier 1 capital. As a result, pbb's SREP requirement was reduced to approximately 8.4% CET1 (excluding the countercyclical capital buffer, which varies according to country, and hence, for specific portfolios). The total capital requirement remains unchanged at 13%. pbb fulfilled both requirements at all times during the reporting year.

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

SREP requirement since 1 January 2023

The Pillar 2 capital requirement, as notified to pbb Group in the ECB's SREP letter dated 14 December 2022 and effective since 1 January 2023, remains unchanged at 2.5%. Hence, the minimum SREP and total capital ratios as stated above remain valid for pbb.

Leverage ratio

This chapter sets out the information on the leverage ratio for pbb Group in accordance with Article 451 of the CRR, as well as on monitoring and managing the risk of excessive leverage.

According to Article 429 (2) of the CRR, the leverage ratio, a capital requirement that is not risk-based, is calculated as an institution's capital measure (the Tier 1 capital) divided by that institution's total exposure measure and is expressed as a percentage. This figure is not risk-sensitive and complements the risk-based perspective of the own funds requirements and capital ratios. It aims to limit the increase in leverage in the banking sector, to mitigate the risk of debt accumulating with a destabilising impact on the financial system and the economy as a whole, and to complement the risk-based requirements to include a simple safety mechanism that is not risk-based.

Institutions are required to maintain a leverage ratio of at least 3% at all times in accordance with Article 92 (1) of the CRR. pbb Group met this requirement at all times during the 2022 financial year.

Total exposure measure

The CRR forms the basis for calculating the total exposure measure of the leverage ratio. Calculation is generally based on the carrying value in the financial statements as the relevant measure of assets. Specific regulatory metrics apply to derivatives and securities financing transactions (securities lending/repo transactions). The total exposure measure also takes off-balance sheet exposures into account.

Derivatives

The exposure values of the leverage ratio for derivatives are calculated on the basis of the regulatory standardised approach (SA-CCR). The exposure values according to the standardised approach take into account a number of factors including margin agreements, collateral and maturities of the derivative transactions, the minimum transfer amount, the current replacement cost, netting and a general factor of 1.4.

Securities financing transactions

The exposure values of the leverage ratio for securities financing transactions (securities lending/repo transactions) include the gross receivables from securities financing transactions that are offset against liabilities from securities financing transactions to the same counterparty, provided that certain conditions are met. In addition to the gross receivables from securities financing transactions, a premium for the counterparty credit risk from securities financing transactions is included.

On-balance sheet exposures

The exposure values of the leverage ratio for other items of the statement of financial position (excluding derivatives and securities financing transactions) include the carrying value of the items in question in the financial statements, as well as regulatory adjustments for items that are deducted when calculating regulatory Tier 1 capital.

On-balance sheet exposure

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

Quantitative information on the leverage ratio

The following tables EU LR1-LRSum, EU LR2-LRCom and EU LR3-LRSpl pursuant to Article 451 (1) (a) to (c) of the CRR and Article 451 (3) of the CRR show a breakdown of the total exposure measure, a reconciliation of this measure with the assets in pbb's published consolidated statement of financial position, and the leverage ratio for pbb Group.

The leverage ratio for pbb Group as at 31 December 2022 is 5.9% (EU LR2-LRCom, line 25), meaning that it remains significantly ahead of the minimum requirement.

EU LR1-LRSum: Summary reconciliation of accounting assets and leverage ratio exposures

All figures in € million		a Applicable amount
1	**Total assets as per published financial statements [1]**	**53,007**
2	Adjustment for entities which are consolidated for accounting purposes but are outside the scope of regulatory consolidation [2]	-
3	(Adjustment for securitised exposures that meet the operational requirements for the recognition of risk transference)	-
4	(Adjustment for temporary exemption of exposures to central bank (if applicable)) [3]	-
5	(Adjustment for fiduciary assets recognised on the balance sheet pursuant to the applicable accounting framework but excluded from the leverage ratio total exposure measure in accordance with point (i) of point (i) of Article 429a(1) CRR)	-
6	Adjustment for regular-way purchases and sales of financial assets subject to trade date accounting	-
7	Adjustment for eligible cash pooling transactions	-
8	Adjustments for derivative financial instruments [4]	-465
9	Adjustment for securities financing transactions (SFTs) [5]	120.0
10	Adjustment for off-balance sheet items (ie conversion to credit equivalent amounts of off-balance sheet exposures) [6]	1,561
11	(Adjustment for prudent valuation adjustments and specific and general provisions which have reduced Tier 1 capital)	-
EU-11a	(Adjustment for exposures excluded from the leverage ratio total exposure measure in accordance with point (c) of Article 429a(1) CRR)	-
EU-11b	(Adjustment for exposures excluded from the leverage ratio total exposure measure in accordance with point (j) of Article 429a(1) CRR)	-
12	Other adjustments [7]	-804
13	**Leverage ratio total exposure measure**	**53,419**

[1] Total assets reported in pbb's consolidated financial statements (IFRS).
[2] There are no differences between the scope of prudential consolidation and the accounting scope of consolidation for pbb's consolidated financial statements (IFRS) as at the disclosure date.
[3] Exposures to Eurosystem central banks temporarily excluded from the calculation of the leverage ratio (from 28 June 2021 until 31 March 2022).
[4] Difference between the carrying value (IFRS) of the derivatives in the financial statements and the exposure value (EaD).
[5] Difference between the carrying value (IFRS) of the securities financing transactions (securities lending/repo transactions) in the financial statements and the regulatory exposure value (EaD).
[6] Addition of off-balance sheet exposures after taking into account the credit conversion factor (CCF) based on the credit risk standardised approach.
[7] Other adjustments mainly include cash collateral furnished by pbb in the derivatives business.

EU LR2-LRCom: Leverage ratio common disclosure

All figures in € million, unless otherwise stated		a CRR leverage ratio exposures 31.12.2022	b CRR leverage ratio exposures 30.06.2022
On-balance sheet exposures (excluding derivatives and SFTs)			
1	On-balance sheet items (excluding derivatives, SFTs, but including collateral)	48,604	52,712
2	Gross-up for derivatives collateral provided where deducted from the balance sheet assets pursuant to the applicable accounting framework	-	-
3	(Deductions of receivables assets for cash variation margin provided in derivatives transactions)	-1,374	-1,341
4	(Adjustment for securities received under securities financing transactions that are recognised as an asset)	-	-
5	(General credit risk adjustments to on-balance sheet items)	-	-
6	(Asset amounts deducted in determining Tier 1 capital)	-96	-86
7	**Total on-balance sheet exposures (excluding derivatives and SFTs)**	**47,135**	**51,285**
Derivative exposures			
8	Replacement cost associated with SA-CCR derivatives transactions (i.e. net of eligible cash variation margin)	80	94
EU-8a	Derogation for derivatives: replacement costs contribution under the simplified standardised approach	-	-
9	Add-on amounts for potential future exposure associated with SA-CCR derivatives transactions	278	276
EU-9a	Derogation for derivatives: Potential future exposure contribution under the simplified standardised approach	-	-
EU-9b	Exposure determined under Original Exposure Method	-	-
10	(Exempted CCP leg of client-cleared trade exposures) (SA-CCR)	-	-
EU-10a	(Exempted CCP leg of client-cleared trade exposures) (simplified standardised approach)	-	-
EU-10b	(Exempted CCP leg of client-cleared trade exposures) (Original exposure method)	-	-
11	Adjusted effective notional amount of written credit derivatives	-	-
12	(Adjusted effective notional offsets and add-on deductions for written credit derivatives)	-	-
13	**Total derivatives exposures**	**359**	**370**
Securities financing transaction (SFT) exposures			
14	Gross SFT assets (with no recognition of netting), after adjustment for sales accounting transactions	4,244	1,963
15	(Netted amounts of cash payables and cash receivables of gross SFT assets)	-	-
16	Counterparty credit risk exposure for SFT assets	120	-
EU-16a	Derogation for SFTs: Counterparty credit risk exposure in accordance with Articles 429e(5) and 222 CRR	-	-
17	Agent transaction exposures	-	-
EU-17a	(Exempted CCP leg of client-cleared SFT exposure)	-	-
18	**Total securities financing transaction exposures**	**4,365**	**1,963**
Other off-balance sheet exposures			
19	Off-balance sheet exposures at gross notional amount	3,012	3,101
20	(Adjustments for conversion to credit equivalent amounts)	-1,451	-1,508
21	(General provisions associated with off-balance sheet exposures deducted in determining Tier 1 capital)	-	-
22	**Off-balance sheet exposures**	**1,561**	**1,593**
Excluded exposures			
EU-22a	(Exposures excluded from the leverage ratio total exposure measure in accordance with point (c) of Article 429a(1) CRR)	-	-
EU-22b	(Exposures exempted in accordance with point (j) of Article 429a (1) CRR (on and off balance sheet))	-	-
EU-22c	(Excluded exposures of public development banks (or units) - Public sector investments)	-	-
EU-22d	(Excluded exposures of public development banks (or units) - Promotional loans)	-	-
EU-22e	(Excluded passing-through promotional loan exposures by non-public development banks (or units))	-	-
EU-22f	(Excluded guaranteed parts of exposures arising from export credits)	-	-

All figures in € million, unless otherwise stated		a **CRR leverage ratio exposures** **31.12.2022**	b **CRR leverage ratio exposures** **30.06.2022**
EU-22g	(Excluded excess collateral deposited at triparty agents)	-	-
EU-22h	(Excluded CSD related services of CSD/institutions in accordance with point (o) of Article 429a(1) CRR)	-	-
EU-22i	(Excluded CSD related services of designated institutions in accordance with point (p) of Article 429a(1) CRR)	-	-
EU-22j	(Reduction of the exposure value of pre-financing or intermediate loans)	-	-
EU-22k	**(Total exempted exposures)**	**0**	**0**
Capital and total exposure measure			
23	**Tier 1 capital**	**3,141**	**3,139**
24	**Leverage ratio total exposure measure**	**53,419**	**55,210**
Leverage ratio			
25	**Leverage ratio**	**5.9**	**5.7**
EU-25	Leverage ratio (excluding the impact of the exemption of public sector investments and promotional loans) (%)	5.9	5.7
25a	Leverage ratio (excluding the impact of any applicable temporary exemption of central bank reserves)	5.9	5.7
26	Regulatory minimum leverage ratio requirement (%)	3.0	3.0
EU-26a	Additional own funds requirements to address the risk of excessive leverage (%) [1]	-	-
EU-26b	thereof: to be made up of CET1 capital	-	-
27	Leverage ratio buffer requirement (%)	-	-
EU-27a	Overall leverage ratio requirement (%) [2]	3.0	3.0
Choice on transitional arrangements and relevant exposures			
EU-27b	Choice on transitional arrangements for the definition of the capital measure	fully implemented	fully implemented
Disclosure of mean values			
28	Mean of daily values of gross SFT assets, after adjustment for sale accounting transactions and netted of amounts of associated cash payables and cash receivable 6)	4,882	1,734
29	Quarter-end value of gross SFT assets, after adjustment for sale accounting transactions and netted of amounts of associated cash payables and cash receivables 6)	4,244	1,963
30	Total exposures (including the impact of any applicable temporary exemption of central bank reserves) incorporating mean values from row 28 of gross SFT assets (after adjustment for sale accounting transactions and netted of amounts of associated cash payables and cash receivables)	54,056	54,981
30a	Total exposures (excluding the impact of any applicable temporary exemption of central bank reserves) incorporating mean values from row 28 of gross SFT assets (after adjustment for sale accounting transactions and netted of amounts of associated cash payables and cash receivables)	54,056	54,981
31	Leverage ratio (including the impact of any applicable temporary exemption of central bank reserves) incorporating mean values from row 28 of gross SFT assets (after adjustment for sale accounting transactions and netted of amounts of associated cash payables and cash receivables) (%)	5.8	5.7
31a	Leverage ratio (excluding the impact of any applicable temporary exemption of central bank reserves) incorporating mean values from row 28 of gross SFT assets (after adjustment for sale accounting transactions and netted of amounts of associated cash payables and cash receivables) (%)	5.8	5.7

[1] Line 25a: Leverage ratio calculated to include temporarily excluded exposures to Eurosystem central banks pursuant to table EU LR1-LRSum, line 4 (for a limited period from 28 June 2021 to 31 March 2022).
[2] Line 26: Adjusted leverage ratio pursuant to Article 429a (7) of the CRR for the duration of the exclusion of the temporarily excluded exposures to Eurosystem central banks.
[3] Line EU-26a: Additional own funds requirement imposed by the competent authority (ECB) to contain the risk of excessive leverage.
[4] Line EU-27a: Sum of lines 26 and EU-26a. Line 27 only applies to G-SIIs, meaning that it is not relevant for pbb.

EU LR3-LRSpl: Split of on-balance sheet exposures (excluding derivatives, SFTs and exempted exposures)

All figures in € million		a CRR leverage ratio exposures
EU-1	**Total on-balance sheet exposures (excluding derivatives, SFTs, and exempted exposures), of which:**	**47,231**
EU-2	Trading book exposures [1]	-
EU-3	Banking book exposures, thereof:	47,231
EU-4	Covered bonds	321
EU-5	Exposures treated as sovereigns	12,941
EU-6	Exposures to regional governments, MDB, international organisations and PSE not treated as sovereigns	2,390
EU-7	Institutions	918
EU-8	Secured by mortgages of immovable properties	27,889
EU-9	Retail exposures	-
EU-10	Corporate	1,909
EU-11	Exposures in default	530
EU-12	Other exposures (e.g. equity, securitisations, and other non-credit obligation assets)	333

[1] pbb Group does not maintain a trading book for securities or derivatives portfolios held to realise short-term gains.

Procedures to monitor the risk of excessive leverage

In line with its business structure and model, as well as its business and risk strategy, pbb Group has implemented formal procedures and regulations to assess the risk of excessive leverage. In particular, as part of the recovery plan (pursuant to the German Act on the Recovery and Resolution of Credit Institutions (SAG)), pbb Group has defined a set of selected indicators tailored to reflect its business and risk situation, allowing it to identify and implement suitable courses of action in a timely manner. In addition to the leverage ratio and capital ratios, these indicators include liquidity indicators (including asset encumbrance and medium- and longer-term refinancing requirements (NSFR)), profitability and portfolio quality indicators, as well as market-based and macroeconomic indicators.

The leverage ratio is calculated on a monthly basis and, like the other indicators, forms a key component of pbb Group's risk management system. Both the leverage ratio and the other indicators are assigned an early warning threshold and a recovery threshold so that any shortfall can be pinpointed at an early stage. Scenarios in which the early warning threshold is undercut are designed to allow pbb Group to take appropriate countermeasures in a timely manner. The status of all indicators is monitored on a regular basis and reported to the Management Board, the Supervisory Board and the banking supervisor. Ongoing monitoring of the leverage ratio includes both its numerator (Tier 1 capital) and denominator (the total exposure measure). The Management Board of pbb is provided with information on the leverage ratio on a monthly basis in the Flash Report and on a quarterly basis in the Management Report and the Recovery Plan Report. In addition, the leverage ratio is covered by pbb Group's capital and multi-year planning.

Encumbered and unencumbered assets

In accordance with Article 443 of the CRR, this chapter contains information concerning encumbered and unencumbered assets of pbb Group and the main sources of encumbrance. The amounts shown in tables EU AE1 to EU AE3 are calculated as median values based on the quarterly data (quarter-end values) for the 2022 financial year as part of the regulatory report on asset encumbrance.

Asset encumbrance

An asset is considered to be encumbered if it has been pledged 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. Asset encumbrance results from the requirement to provide collateral, usually caused by a transaction on the liabilities (refinancing) side of the balance sheet.

Asset encumbrance within the pbb Group results primarily from its business model, with Pfandbriefe as the primary funding instrument. pbb Group specialises in commercial real estate and public investment finance. Most of the loans extended are refinanced on the Pfandbrief market. pbb issues Mortgage Pfandbriefe, collateralised by real property liens, for the funding of real estate financing which is eligible for inclusion in Pfandbrief cover and Public Sector Pfandbriefe, collateralised by claims against the public sector, for the funding of public investment financing. With an outstanding Pfandbrief volume of more than € 24.8 billion (nominal) as at 31 December 2022, pbb is a major issuer of Pfandbriefe, which also makes it an important player in the European Pfandbrief markets.

As at 31 December 2022, the assets of the pbb Group (median) amounted to € 54.7 billion (31 December 2021: € 58.9 billion); of this figure, € 34.1 billion (62.4%) are encumbered (31 December 2021: € 36.7 billion or 62.3%). Encumbrance within pbb Group is largely unchanged over the course of 2022 and is on a par with the level seen at the end of 2021.

The other assets listed in the EU AE1 table (line 120) mainly comprise loans and advances (around 98%) and derivatives (around 2%), most of which are encumbered. They also include unencumbered assets such as tax assets and other tangible (property, plant and equipment such as operating equipment and right-of-use assets relating to leased buildings) and intangible (such as acquired and internally developed software) assets, which account for less than 1% and are generally not available for encumbrance.

Structure of encumbrance within pbb Group

Within pbb Group, this encumbrance is based solely on pbb, in which all of pbb Group’s strategic business activities are bundled.

Prudential and accounting scope of consolidation

There are no differences between the scope of prudential consolidation of pbb Group, which is taken as a basis for the disclosure on asset encumbrance, and the accounting scope of consolidation (IFRS) as at the disclosure date.

Mismatches regarding the accounting framework (IFRS)

There are no mismatches between assets which are deposited and transferred as collateral in accordance with the accounting framework applied by pbb Group (IFRS) on the one hand, and assets considered 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.

Significant exposures in foreign currencies

A distinction between the encumbered assets or collateral according to currencies other than the euro (the reporting currency) is not material for pbb Group. Based on the definition of the Basel Committee on Banking Supervision (BCBS), pbb Group's currency exposures are not considered material.

Source of encumbrance

As shown in table EU AE3, Pfandbriefe remained the main source (82%) of asset encumbrance for pbb Group. The issuance of Mortgage Pfandbriefe and Public Sector Pfandbriefe for the funding of real estate financing which is eligible for inclusion in Pfandbrief cover and public investment financing involves the encumbrance of loans and securities in the mortgage cover assets pool and in the public-sector cover pool.

In addition to the issue of Pfandbriefe, securities financing transactions (securities lending/repo transactions and pbb's participation in the TLTRO III programme of the European Central Bank (ECB) (12% share)), as well as derivative financial instruments (6% share) are further sources of asset encumbrance.

In 2022, pbb Group participated in the ECB's Targeted Longer Term Refinancing Operations (TLTRO III) with a nominal volume of € 8.4 billion. The ECB's Governing Council amended the conditions of TLTRO III in October 2022, with effect from 23 November 2022, and granted participating banks additional voluntary early repayment options. pbb Group made use of the additional repayment options to effect early repayment of TLTRO tranches for a total nominal volume of € 5.75 billion by the reporting date. The TLTRO III liabilities (median) reported under central bank liabilities are provided in table EU AE3, line 030, column 010.

Pfandbriefe

As a specialist lender for commercial real estate finance and public investment finance, pbb issues Mortgage Pfandbriefe, collateralised by real property liens, as well as Public Sector Pfandbriefe, collateralised by claims against the public sector. These Pfandbriefe are issued on the international capital markets on a regular basis in benchmark format or as private placements. In line with the lending business on the assets side, pbb offers investors Pfandbriefe with various maturities and in various currencies, with a focus on EUR, GBP, USD and SEK.

The issue of Pfandbriefe is subject to the stringent provisions set out in the German Pfandbrief Act (PfandBG), which places very high requirements on investor protection. These stringent statutory standards have meant that, in the past, Pfandbriefe have proved to be of above-average reliability. The security mechanisms of the German Pfandbrief Act take effect through "ring-fencing": in the case of a Pfandbrief issuer's insolvency, the cover assets pools – which serve as collateral for Pfandbriefe – are available only to Pfandbrief creditors to cover their claims. It is only when all of the claims of the Pfandbrief holders have been satisfied in full that any remainder in the cover assets pools is available to settle the claims of the insolvency creditors.

Pfandbrief banks have to publish quarterly reports on the composition and structure of their cover assets pools (cover pools). Publications in accordance with the Pfandbrief Act can be found on pbb's website under Investors / Mandatory Publications / Publications according to section 28 of the Pfandbrief Act. Further information on the Mortgage and Public Sector Pfandbriefe issued by pbb, as well as the cover pools, is available on pbb's website under Investors / Debt Investors / The Pfandbrief.

Over-collateralisation of Pfandbriefe

The German Pfandbrief Act (PfandBG) provides for nominal-value and present-value over-collateralisation of 2.0% for Mortgage Pfandbriefe and Public Sector Pfandbriefe. In other words: the nominal and present value of the respective cover pool should always be at least 2.0% higher than the nominal and present value of all Pfandbriefe issued based on this cover pool. The cover assets for the nominal and present value over-collateralisation may not be used twice.

Rating agencies also require additional surplus cover depending on the quality of the cover pool and the desired Pfandbrief rating. pbb's Mortgage Pfandbriefe and Public Sector Pfandbriefe were assigned an Aa1 rating by Moody's as at 31 December 2022. In order to maintain this rating, pbb must provide minimum net present value surplus cover of 11.5% for Mortgage Pfandbriefe and 9.5% for Public Sector Pfandbriefe.

The actual surplus cover of the Mortgage Pfandbriefe as at 31 December 2022 was 23.7% (nominal) and 28.1% (present value). For the Public Sector Pfandbriefe, pbb provided surplus cover of 24.4% (nominal) and 25.4% (present value). This means that the surplus cover far exceeded the requirements of both the rating agencies and the legislator.

The current surplus cover and the voluntary surplus cover required by Moody's is published on pbb's website at regular intervals under Investors / Mandatory Publications / Publications according to section 28 of the 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, if necessary, maintain more surplus cover than required by law or desired by the rating agencies.

Derivatives and securities financing transactions

pbb Group uses derivatives mainly to hedge market risks resulting, for example, from changes in interest rates or exchange rates. These hedging transactions are countered by underlying asset or liability items. 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. pbb Group also provides derivatives for real estate customers and public-law entities, for example to enable them to hedge market risks associated with commercial real estate financing on their side.

Securities lending/repo transactions are used for short-term liquidity management and are also an important source of collateralised funding for pbb. The counterparties are primarily OECD credit institutions or Eurex Repo.

The business with both derivatives and securities lending/repo transactions is usually concluded based on standardised bilateral netting contracts which serve to minimise the legal risk, as well as the economic and regulatory default risk and which enable mutual risks to be netted (netting). As a result of the netting process, the default risk is reduced to one single net receivable from the counterparty. In line with the netting contracts, pbb Group also enters into standard market collateral agreements with certain counterparties in addition to the netting contracts, in order to hedge the net receivable/liability that remains after netting. Detailed information in this regard can be found in the chapters "Credit risk mitigation techniques" and "Counterparty credit risk".

Quantitative information on asset encumbrance

In accordance with Article 443 CRR, the following tables EU AE1 to EU AE3 show a breakdown of encumbered and unencumbered assets for pbb Group, as well as the related sources of encumbrance. The amounts are calculated as median values based on the quarterly data (quarter-end values) for the 2022 financial year. In this context, pbb Group has expanded both tables to include additional "thereof" items (such as loans and advances, derivatives and Pfandbriefe issued). These are of material importance for pbb Group's business and funding model and, as a result, for the encumbrance of its assets.

EU AE1: Encumbered and unencumbered assets

		010	030	040	050	060	080	090	100
		Carrying amount of encumbered assets		Fair value of encumbered assets		Carrying amount of unencumbered assets		Fair value of unencumbered assets	
All figures in € million			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	**Assets of the disclosing institution**	**34,137**	**4,269**	———	———	**20,578**	**1,273**	———	———
030	Equity instruments	-	-	-	-	-	-	-	-
040	Debt securities	5,572	4,269	5,572	4,269	1,237	1,273	1,236	1,273
050	thereof: covered bonds	330	-	330	-	-	-	-	-
060	thereof: securitisations	-	-	-	-	-	-	-	-
070	thereof: issued by general governments	4,422	3,550	4,422	3,550	780	740	782	740
080	thereof: issued by financial corporations	1,339	722	1,339	722	326	511	323	511
090	thereof: issued by non-financial corporations	-	-	-	-	-	-	-	-
120	Other assets	28,608	-	———	———	19,903	-	———	———
130	thereof: loans and advances	27,677	-	———	———	19,665	-	———	———
140	thereof: derivatives	865	-	———	———	9	-	———	———

[1] EHQLA: Extremely high-quality liquid assets, “Level 1 assets”
HQLA: High-quality liquid assets, “Level 2 A/B assets”.
[2] Including loans on demand, such as cash balances with central banks and other demand deposits.

EU AE2: Collateral received and own debt securities issued

		010	030	040	060
		Fair value of encumbered collateral received or own debt securities issued		Unencumbered Fair value of collateral received or own debt securities issued available for encumbrance	
All figures in € million			thereof notionally eligible EHQLA and HQLA [1)]		thereof EHQLA and HQLA [1)]
130	**Collateral received by the disclosing institution**	**0**	**0**	**0**	**0**
140	Loans on demand	-	-	-	-
150	Equity instruments	-	-	-	-
160	Debt securities	-	-	-	-
170	thereof: covered bonds	-	-	-	-
180	thereof: securitisations	-	-	-	-
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 securitisations**	**0**	**0**	**0**	**0**
241	**Own covered bonds and securitisations issued and not yet pledged**	———	———	**0**	**0**
250	**Total collateral received and own debt securities issued**	**34,137**	**4,269**	———	———

[1)] EHQLA: EHQLA: Extremely high-quality liquid assets, “Level 1 assets”
HQLA: High-quality liquid assets, “Level 2 A/B assets”.

EU AE3: Sources of encumbrance

All figures in € million		010 **Matching liabilities, contingent liabilities or securities lent**	030 **Assets, collateral received and own debt securities issued other than covered bonds and securitisations encumbered**
010	**Carrying amount of selected financial liabilities**	**34,189**	**34,137**
020	thereof: derivatives [1]	1,818	865
030	thereof: deposits [2]	8,248	3,909
040	thereof: debt securities issued [3]	24,063	29,404
050	thereof: other sources of encumbrance [4]	-	-

[1] Derivatives, including financial collateral.
[2] Repurchase agreements (ECB TLTRO programme and repo transactions)
[3] Covered bonds (Pfandbriefe) issued.
[4] For example, securities lending transactions.

Risk management and risk-oriented overall bank management

Management Board declarations

In line with the requirements pursuant to section 91 (2) of the AktG and section 25a of the KWG, pbb Group has implemented a Group-wide risk management and risk control system which, among other things, allows for risks to be identified, measured and controlled by limits in a uniform manner. At single-entity level, pbb applies an exemption provided for by section 2a (2) of the KWG, releasing the Bank from its risk control function obligations pursuant to section 25a (1) sentence 3 nos. 1, 2, 3 (b), (c) of the KWG.

Approval of the following declarations pursuant to Article 435 (1) (e), (f) of the CRR by pbb's Management Board was granted in the framework of the approval of this Disclosure Report.

Risk Management Procedure Adequacy Statement

The information according to Article 435 (1) (a) to (f) of the CRR regarding the risk management targets and policy as well as the risk management strategy and procedures of pbb Group for the individual risk categories is set out in this Regulatory Disclosure Report and additionally in the Risk and Opportunity Report within the Group's Annual Report 2022. The Annual Report 2022 is published on pbb's website under Investors / Financial Reports and Additional Publications.

pbb's Management Board considers the existing Group-wide risk management and risk control system to be appropriate and effective for pbb Group's business and risk profile and strategy. pbb assumes that the methods, models and processes implemented at pbb Group are suitable at any time for ensuring a risk management and risk control geared towards the Bank's business and risk strategies and its risk profile.

Risk Statement

The Risk Statement describes pbb Group's overall risk profile associated with the business strategy. pbb's Management Board confirms to the best of its knowledge that the internal risk management procedures are appropriate to always provide a comprehensive picture of pbb Group's risk profile and to sustainably safeguard its risk-bearing capacity and liquidity at all times.

Strategic business segments

The strategic business segments of pbb are Real Estate Finance (REF) and Public Investment Finance (PIF); the focus is on business eligible for inclusion in Pfandbrief cover. The geographic focus is on Europe and the US.

In real estate financing, pbb Group's range of services is targeted primarily at professional real estate investors (both national and international) such as real estate companies, institutional investors, real estate funds as well as – particularly in Germany – SMEs and clients with a regional focus on Germany. pbb targets more complex transactions with medium-sized to larger financing volumes. Financed objects mainly involve office buildings, properties for residential use, retail and logistics properties. Other property types are financed as portfolio additions. The regional focus is on the core markets eligible for inclusion in Pfandbrief cover in Europe and in certain US metropolitan areas, where pbb offers both local and cross-border financing

expertise. A majority of the loans granted are investment financings, i.e. loans for the acquisition or follow-up financing of existing properties generating cash flows. Development financings (including for residential real estate in Germany) are of complementary significance.

In Public Investment Finance, pbb exploits opportunities to finance projects eligible for inclusion in Pfandbrief cover, for the provision and improvement of public infrastructure. Clients in this segment include regional or provincial governments, municipalities, urban development companies, and publicly-owned hospitals – as well as investment or real estate holding companies. Additionally, pbb pursues public/private partnerships and other structured transactions. The regional focus in primary new business is on France. This segment is complemented by purchasing bonds of European issuers, in particular for cover pool and liquidity management purposes. pbb did not transact any business in this segment during 2022.

Business strategy

pbb Group's strategy focuses on continued, value-creating 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 Management Board of pbb has committed itself to further strengthening Group profitability in the financial years 2023 to 2025, consistent with the Bank's profile as a dividend stock. Strategically, the focus concerning income lies particularly on the aforementioned business activities in the REF core segment. The Group aims to boost profitability by expanding the product range, for example with the new Real Estate Investment Management division currently being set up, while strictly adhering to cost targets.

Risk strategy

In line with the business strategy, pbb Group's risk strategy governs the risk-strategic orientation. Whilst accepting inherent existential threats resulting from the business objectives, the overall risk strategy considers external factors, e.g. risks associated with the macroeconomic environment and new regulatory requirements, as well as internal influencing factors, especially the results of the annual risk inventory. All risks that are deemed material from an economic perspective arising from business activities are deter-mined within the scope of the risk inventory. Based on the results of the 2022 risk inventory, the credit risk (counterparty credit risk), market risk, liquidity and funding risk, operational risk, business and strategic risk, ESG risk, real estate risk, pension risk as well as the central counterparty risk, including the associated sub-risk categories, are all considered material.

Risk appetite

The risk appetite determined in the risk strategy describes the scope and structure of the risk that the Bank is willing to take when pursuing its business objectives and that it can take without allowing for existential threats (beyond the inherent risks). The guiding principle behind the risk appetite is ensuring sustainable and appropriate economic and regulatory capital, and adequate liquidity for pbb Group. From a quantitative point of view, this guiding principle is implemented through risk limits for the capital and liquidity management with defined escalation mechanisms and quantitative as well as qualitative early warning indicators. The risks identified as material are included in the risk strategy, in addition to the risk inventory. Guidelines, frameworks and workflow instructions serve to specify and implement further limits and framework conditions for the business segments, anchoring these limits and framework conditions in ongoing management and monitoring. In terms of risk concentration, additional portfolio-specific stress tests are conducted on a regular basis. Annual updates to the risk-bearing capacity concept ensure that material risk categories in the risk-bearing capacity calculations are appropriately accounted for.

A bank's core function is to transform liquidity and risk. It is inevitable that from this core function threats should arise that could jeopardise the institution's continued existence in extreme cases. For pbb, due to its business model, these inherent existential threats include a default of Germany, other European countries, the UK or the US.

ESG-risk

In order to ensure that ESG risks are given adequate consideration in the Bank's risk management processes, an identification and assessment process for ESG risk drivers has been established as a firm component of the annual risk inventory. Identifying and describing the possible transmission channels of potential ESG risk factors reveals the extent to which a company's economic and financial activities are affected (financial materiality / outside-in) or how a company's activities impact ESG factors (environ-mental and social materiality / inside-out) and in what timeframe. Suitable data for the portfolio is used to assess the materiality of each risk factor. An explicit materiality definition has already been drawn up for some risk drivers. This determines that portfolio results for specific risk factors and portfolio segments are examined for pre-defined thresholds and subsequently undergo a final assessment by way of expert judgement. Risk factors for which no data is available were evaluated exclusively using expert knowledge. The impact of ESG risk drivers recognised as material on the individual risk types is examined and assessed. The results of the risk inventory relating to ESG materiality are recorded in an in-house ESG assessment register. All climate threats per the EU Taxonomy feed into the ESG materiality analysis.

Assessment results for the Real Estate Finance (REF) and Public Investment Finance (PIF) segments are determined and documented separately. All of the relevant experts are involved in the individual steps in the assessment process, in particular those with lending and property valuation expertise, experts from HR, Legal and Compliance, as well as from Risk Management & Control. The results of the ESG materiality process serve as a springboard for developing the management strategy, including formulating the ESG risk appetite within the risk strategy. This includes defining suitable risk indicators for risk monitoring and risk quantification, using scenario analyses and stress tests. The assessment register is also applied using the three lines of defence (3LoD) principle to map the categorised ESG risk factors to the individual divisions and key control processes.

Counterparty credit risk is affected by physical and transition risks assessed as material and the "external ESG risks of counterparties" governance factor. Some acute physical risks (heavy precipitation, storms, and tornadoes) can damage property or disrupt the Bank's business continuity at low probabilities and to a limited extent, which makes them relevant to operational risk alongside pollution/contamination and some governance factors. Moreover, transition and governance factors may impact reputational risk, legal and liability risk, and business and strategic risk. There are currently no indications of any direct sustainability risks to pbb's market risk, nor to its liquidity and funding risk.

To determine the effects of ESG risk factors on credit risk (counterparty credit risk), operational risk and reputational risk, stress tests and scenario analyses were carried out. In particular, the effects of relevant climate threats and transition factors on credit risk (counterparty credit risk) was determined using a macroeconomic stress test. To determine the influence of ESG factors on operational and reputational risk, various scenario analyses were conducted, including in relation to damage to the Group's physical assets and infrastructure by extreme weather events, potential accusations of greenwashing and unfavourable public perception of the Bank relating to sustainability issues. Furthermore, pbb Group considered ESG risk factors in its monitoring and reporting.

From a risk perspective, the focus is clearly on the options for exerting influence at all stages in the commercial real estate financing value chain, starting with fundraising and ranging from deal onboarding, loan extension, and the entire loan coverage process to repayment or the realisation of collateral. Within pbb Group, the principle of environmental sustainability of the properties to be financed is based on close links between Sales, Credit and Risk Management, plus the real estate experts, and is an integral part of the lending decision process.

The taxonomy alignment analysis covering defined E-criteria according to the pbb Green Scoring Model with three pillars – energy efficiency, "green building" certification and other sustainability criteria (e.g. distance to public transportation, use of green electricity) – is now part of every new deal. In addition, pbb uses a proprietary decarbonisation tool based on the CRREM tool in its risk and opportunity analysis, with a special focus on opportunities as to how to make property sustainable. At the same time, systematic and extensive data collection on sustainability aspects was conducted in 2022 for both new business and for clients with existing financings, requesting data on sustainability aspects for transactions with a volume of € 26.4 billion via a comprehensive survey of existing clients. The response rate by year-end 2022 was 56%; further data will be retrieved in 2023. pbb Group is thus increasingly gaining a better overview of the sustainability of its credit portfolio and associated risks, which can then be used to manage ESG risks over the long term. The data collected are being gradually and continuously integrated into pbb's own IT landscape.

Currently, pbb Group defines two management-relevant indicators with a focus on transparency (within the climate dimensions): A transparency ratio for the E score, energy consumption and energy performance certificate (EPC) within the REF portfolio. In perspective, the aim is to align the portfolio with climate target-compatible transition paths through active climate management. At the same time, pbb aims to actively manage the Green Asset Ratio (GAR) and Banking Book Taxonomy Alignment Ratio (BTAR) indicators relevant for the EU taxonomy. These indicators are also currently being further developed with a view to the precise target definition as well as the steering essay.

Social factors are also increasingly gaining importance. Relevant risks can arise in connection with pbb Group's own business operations as well as with its product portfolio. Social risks associated with upstream activities provided by suppliers and service providers are currently classified as low. pbb uses indicators on diversity, operational safety, and personnel development to monitor the Group's social risk. Based on a traffic light system, amber and red thresholds have been defined for these risk indicators and form the basis for compliance with the Bank's own targets.

Liquidity risk management

A key component of liquidity risk management is the daily calculation of the cumulative liquidity position based on three scenarios – base, risk and stress scenario. The cumulative liquidity position serves to inform about expected cash inflows and outflows as at the reporting date. Based on this information, the liquidity requirement or liquidity surplus is calculated, and management mechanisms such as limits and early warning indicators (triggers) are defined and monitored. The term of these limits/triggers for a given scenario can run up to two years. To comply with the minimum requirements for the regulatory Liquidity Coverage Ratio (LCR), the Bank has established corresponding limits and early warning indicators. During the past financial year 2022, the minimum ratio of 100% was significantly exceeded at each reporting date. The LCR average of the monthly figures for 2022 was 254%; the LCR as at the disclosure date was 171%. The Basel Committee's Net Stable Funding Ratio (NSFR) was transposed into European legislation with the Capital Requirements Regulation (CRR II). With effect from 28 June 2021, regulatory provisions require a minimum NSFR of 100%. As at year-end 2022, the NSFR was at 111%. LCR and NSFR calculation is part of pbb's regulatory reporting processes. The ratios are communicated in internal reporting and to the supervisory authorities.

A holistic approach to prompt and transparent risk measurement, using an appropriate methodology, is paramount to ensure that pbb Group's liquidity is ascertained at all times. State-of-the-art banking sector methods and models are used for this purpose, which are regularly reviewed by pbb's risk control and internal audit departments, external auditors as well as German and European supervisors. The risk measurement procedures employed make pbb's business and risk strategies quantifiable, transparent and verifiable.

Capitalisation and risk-bearing capacity

To ensure adequate capitalisation, compliance with the economic risk-bearing capacity and the regulatory capital ratios is reviewed by means of an early warning system in both a forecast scenario and an adverse stress scenario. The economic risk-bearing capacity, as measured by the internal capital adequacy ratio, was 175% as at 31 December 2022, and thus significantly above target. pbb's CET1 ratio is based largely on the capital requirements set out in the Supervisory Review and Evaluation Process (SREP) carried out by the European Central Bank (ECB) as the competent supervisor, but it also includes a buffer defined by pbb's management to cover potential stress situations. The ECB's pillar 2 requirement defined for the 2022 financial year remains valid for 2023. pbb Group's CET1 ratio was 16.7% as at the disclosure date, with € 17.0 billion in risk-weighted exposure amounts (RWA) and € 2.8 billion in CET1 capital. This means that pbb's capital buffer for putting planned business activities into practice can be considered sufficiently comfortable. What this capitalisation also shows is a high risk-bearing capacity should the environment continue to remain challenging for a prolonged period. Yet there are numerous risk factors that could have a negative impact on the results projected for 2023, should conditions develop unfavourably. This negative impact could be significant, but cannot be reliably quantified at this point. Risk factors mainly include exceptionally high global economic risks arising from the changed macroeconomic environment.

Leverage ratio

Own funds requirements and regulatory capital ratios provide a risk-based view that is complemented by a capital requirement not related to risk – the leverage ratio. Institutions are required to maintain a leverage ratio of at least 3% at all times in accordance with Article 92 (1) of the CRR. pbb Group met this requirement at all times during the 2022 financial year: as at the disclosure date, pbb's leverage ratio amounted to 5.9%.

NPL ratio and risk provisioning

pbb Group's loan book continues to be of high quality as at year-end 2022, with the non-performing loan (NPL) ratio remaining low at 1.9%. This NPL ratio includes only loans and advances; it does not include debt securities and off-balance sheet exposures such as loan commitments, balances held with central banks or other demand deposits.

Net gains/losses from impairments on financial assets (net income from risk provisioning) amounted to € -44 million in the 2022 financial year and was thus significantly less negative than in the year before (2021: € -81 million).

Intra-Group transactions and transactions with related parties

There were no material intra-Group transactions or material transactions with related parties during the 2022 financial year that could have a significant impact on pbb Group's risk profile.

General organisation and risk management principles

This chapter illustrates the general organisation and key risk management principles pursuant to Article 435 (1) of the CRR as applicable to pbb Group. Additional details pertaining to managing credit risk (counterparty credit risk), market risk, liquidity and funding risk, operational risk and ESG (environmental, social and governance) risks can be found later on in this Disclosure Report.

In line with the requirements set out in section 91 (2) of the AktG and section 25a of the KWG, pbb has implemented a Group-wide risk management and risk control system which, among other things, allows for risks to be identified, measured and controlled by limits in a uniform manner. At single-entity level, pbb applies an exemption provided for by section 2a (2) of the KWG, releasing the Bank from its risk control function obligations pursuant to section 25a (1) sentence 3 nos. 1, 2, 3 (b), (c) of the KWG.

Organisation and committees

Management Board and Supervisory Board

pbb's Management Board is responsible for the risk management system and makes decisions relating to strategies as well as to key risk management and risk organisation issues.

The principles, methods and processes of pbb's risk management system are specified centrally by Risk Management and Controlling, and are applied throughout pbb Group, subject to any special requirements at single-entity level. All material risks are identified, analysed, assessed, managed, documented, monitored and communicated transparently and systematically.

The principal Management Board risk management responsibilities include:

- Defining, updating and communicating business and risk strategies as the basis for business activities and risk tolerance
- Defining and improving organisational structures, in particular for risk management, thereby ensuring that all material risks are managed and monitored
- Adopting lending authority guidelines to support decision-making during credit processes
- Taking decisions regarding (portfolio) management measures outside designated responsibilities.

The Management Board notifies the Supervisory Board about significant changes to business and risk strategies as well as pbb Group's risk profile. The Supervisory Board's Risk Management and Liquidity Strategy Committee (RLA) is responsible for managing the overall risk situation, for monitoring, establishing and refining an efficient risk management system, and for managing and safeguarding pbb Group's liquidity; it also resolves upon necessary approvals for lending decisions. The Management Board informs the committee about any new recognition/increase of specific allowance (stage 3 impairments) in excess of € 5 million, and (at regular intervals) about major exposures with higher levels of risk.

The following committees have been established at pbb Group level; they involve the respective decision-makers.

Risk Committee

The Risk Committee (RC) consists of the CRO (Chairperson), the CEO/CFO (Deputy Chairperson), the Chief Credit Officer (CCO), the Head of Risk Management & Control (RMC) and a Credit Risk Management (CRM) department head. The committee usually meets once a month to discuss the risk development, and to adopt guidelines, risk measurement methods, related parameters, and methods to monitor all risk types. The RC is responsible for developing Group-wide risk management and risk control guidelines, and also monitors the development of pbb's risk-bearing capacity, economic capital, available financial resources and credit portfolio, along with adherence to limits. The Risk Committee also discusses portfolio developments. Additional committees have been established beside the Risk Committee, as outlined below.

Credit Committee

The Credit Committee is chaired by the CRO or the CCO. The committee generally meets at least once a week and makes lending decisions regarding new business, extensions and material changes to the credit quality that fall within the scope of its authority. It also votes on all lending decisions within the Management Board's responsibility or on those lending decisions to be approved by the Risk Management and Liquidity Strategy Committee. The relevant decision-makers must ensure that the lending decisions are consistent with the prevailing business and risk strategy.

Watchlist Committee

The Watchlist Committee is chaired by the CCO and meets once a month. All exposures identified by the early warning system are discussed, and individual risk-mitigating measures introduced if required; it is then the responsibility of the various departments to implement these measures. Where necessary, the committee takes decisions regarding a potential transfer of exposures to CRM REF Workout, which then takes the necessary restructuring or workout steps on the basis of an individual exposure strategy and also decides upon returning the corresponding transaction to regular coverage after recovery. Each unit that is responsible for handling an exposure must obtain all the requisite lending decisions for implementing measures, in line with lending authority regulations.

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). The CRO chairs the RPC. The RPC takes decisions within the scope of pre-defined lending authority regulations and in accordance with IFRS and the German Commercial Code (HGB).

New Product Process Committee

The New Product Process Committee (NPPC) comprises representatives from the most important units responsible for infrastructure and controls; said representatives are determined by the RC. The NPPC acts on an event-driven basis and is responsible for ensuring that prior to business commencing 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. New products or new markets are only launched or entered following the NPPC's approval.

Stress Test Committee

The Stress Test Committee, chaired by the CRO, is responsible for internal stress testing – including methodology, implementation and monitoring. 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

The Asset and Liability Committee (ALCO) is responsible for liquidity management, pbb Group's asset/liability management, long-term financing strategies, capital management, regulatory capital ratio management, and market risk management. The Legal and Regulatory Risk Committee (LRRC) advises on legal and regulatory requirements, and is authorised to 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.

ESG Committee

pbb Group has also established an ESG Committee, which deals with ESG aspects and ESG risks throughout pbb Group. The ESG Committee comprises the entire Management Board and the Heads of Communications, Compliance, Human Resources, Information Technology, Property Analysis & Valuation, Credit Risk Management, Treasury, Risk Management & Control, Loan Markets, Sales Germany, plus the members of the ESG Programme Management team as well as project managers of the various ESG sub-project streams Environment (E), E(SG) Risks, Governance (G), and Social (S) and of the ESG Communications and ESG Disclosure sub-project streams. The ESG Committee is primarily responsible for developing an ESG business and risk strategy, and for monitoring the corresponding implementation measures within pbb Group. The committee develops ESG targets, and the measures required to achieve them.

Risk management organisation

<table>
<tr><td colspan="9">Risk Management and Liquidity Strategy Committee of the Supervisory Board</td></tr>
<tr><td colspan="9">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><td rowspan="2">Environmental, Social and Governance (ESG) Committee</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)

Chief Risk Officer (CRO) Alongside the committees mentioned above, the following organisational units of the CRO form an integral part of pbb Group's risk management system:

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 CRO function is a monitoring and back-office unit at pbb Group level and comprises:

> The Risk Management & Control unit, which is responsible (i) for monitoring market risk, credit risk (counterparty credit risk), operational risk and liquidity risk as well as the risk-bearing capacity and (ii) for establishing Group-wide uniform risk measurement methods and risk reports.

> The Credit Risk Management unit, which is responsible for analysing new business and for portfolio management. CRM also comprises the Workout unit, which is responsible for the recovery or workout of all critical exposures, and the Credit Processes unit, whose main responsibilities include the Credit Committee organisation, improvement of data quality within CRM, and implementation of regulatory requirements in the credit processes.

> The Operations unit, which is responsible for 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, and for handling domestic and international payments.

> The Compliance unit, whose methods and procedures, audit and reporting processes influence conduct within pbb Group to align with applicable laws and regulations. Compliance is responsible in particular for regulations and controls to prevent money laundering and other criminal activities, to ensure compliance with sanctions and embargoes, and to ensure capital markets compliance. It is also responsible for general compliance topics, thereby minimising risks that may arise due to non-compliance with legal provisions, and external and internal requirements. The Compliance unit is also responsible for strengthening the internal control system for the central coordination of key controls (Control Attestation Process). Compliance is represented on various committees and regularly reports to the Management Board and to the Audit and Digitalisation Committee of the Supervisory Board.

In addition to the CRO function, the independent Property Analysis & Valuation (PAV) department and Group Internal Audit units complement the 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), for conducting research on regional real estate markets, and for monitoring financed development projects. Group Internal Audit performs both regular and event-driven risk-oriented process, control, and system audits, including the review of the risk management system and internal control system.

Risk strategy and policies

The risk strategy and the business strategy provide the basis for pbb Group's planning and business policy action. The risk strategy is based on the Group-wide risk appetite and reflects pbb's strategic orientation as a specialist in commercial real estate and public investment finance with a focus on Pfandbrief funding. Furthermore, the guidelines – which as a whole provide the basis for the risk management system and the risk culture – are defined in the risk strategy. Subject to any special requirements at single-entity level, the risk strategy is applicable to pbb Group's business segments and legal entities. It is reviewed and updated at least once a year.

As part of the annual strategy development process, the risk strategy for 2022 was drawn up and aligned with the business strategy, adopted by the Management Board and approved by the Supervisory Board. In the context of current geopolitical developments (the war between Russia and Ukraine) and their potential effects, the decision was taken at the end of April 2022, in consultation with the relevant bodies, to adjust the corresponding criteria for development financing in the risk strategy.

Risk policies for the individual business segments, along with guidelines, frameworks or instructions for all risk types classified as material in the applicable risk inventory, ensure that the risk strategy is embedded in day-to-day business. The individual documents are reviewed and updated regularly if necessary. They contain information on risk measurement, risk monitoring and risk management. The limit-setting process – and the escalation process in the event that a limit is exceeded – is also described in these documents.

Risk reporting

Risk reporting reflects the structure of the business segments. The Management Board receives regular risk reports containing an extensive overview and detailed information concerning the risk situation for each risk type, as well as other information relevant for the purposes of internal control. The supervisory bodies are also notified of risk-relevant issues at regular intervals. In addition, special reports are prepared on an ad-hoc basis, i.e. at the request of the Management Board or the Supervisory Board; these reports consider specific and acute risk factors, for example associated with 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, pbb 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 pbb Group's capital and liquidity resources, and scans them as to potential risk concentrations. To the extent 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 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 from a normative and an economic perspective. The normative perspective is geared towards ongoing fulfilment of all capital- and liquidity-related legal and regulatory requirements. 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. To adequately monitor ESG risks, pbb is working on integrating the various ESG risk factors into the relevant types of risk, including monitoring, reporting and quantification. The Bank is also working on refining climate-specific stress tests and scenario analyses. As part of these strategic management approaches, pbb defines its risk appetite, which sets out the scope within which the Bank is prepared to assume risks. pbb Group uses this information to derive input for operational management, via limit systems, committee decisions, and other management decisions.

Limit and early warning systems have been implemented, in line with the Bank's risk appetite, both for each type of risk and across risk types at the level of the capital management approaches. The following chapters provide a detailed description of the strategy underlying the respective type of risk, together with the associated risk definition, risk calculation methods, and risk reporting systems.

Internal Audit

The need for Group Internal Audit arises from specific legal provisions such as section 25a (1) sentence 2 no. 3 of the KWG in conjunction with the Minimum Requirements for Risk Management (Mindestanforderungen an das Risikomanagement – MaRisk), in particular AT 4.4.3 in conjunction with BTO 2, and section 91 (2) of the AktG.

Internal Audit is an integral part of the Bank's Internal Control System (ICS). The ICS comprises all monitoring activities integrated directly or indirectly into workflows (process-dependent monitoring), while Internal Audit is a Management Board tool that monitors operational and business workflows, risk management and risk control as well as the ICS itself to account for risk (= process-independent monitoring).

The Management Board confers the right of initiative to Internal Audit and has authorised Internal Audit to communicate directly with every employee so as to investigate every activity and corporate entity, and to gain access to all of pbb's records,

documents or data, including management information and transcripts of all advisory and executive boards, whenever it seems relevant for Internal Audit to fulfil its duties. This includes physical access to all premises and technical access to IT systems.

In line with the German Ordinance on Remuneration in Financial Institutions (Institutsvergütungsverordnung – "InstVergV"), Internal Audit is involved in monitoring the remuneration systems as an independent party (section 2 (9) in conjunction with section 3 (3) of the InstVergV).

Internal Audit reports directly to pbb's Management Board. The Chairman of the Supervisory Board as well as of the Audit and Digitalisation Committee and all other members of said committee may, with the involvement of the Management Board, request information directly from the Head of Internal Audit. The Head of Internal Audit also reports regularly on audit results and audit planning to the Audit and Digitalisation Committee.

Audit activities must span all of the Group's operational and business workflows, activities and processes; they must be based on a risk-oriented audit approach. In line with MaRisk, the following have to be audited and assessed in particular:

- Internal control system (ICS)
- Risk management and risk control processes
- Reporting and information systems
- Finance and accounting
- Compliance with statutory and regulatory requirements as well as other regulations
- Compliance with internal guidelines, rules and policies
- Asset security.

Outsourced functions are included in any audit. Internal Audit's duties include special audits as ordered by the Management Board. Adhering to its principle of independence, Internal Audit is required to support material projects with audits. It must therefore be informed in advance about all material projects in order to define the nature and scope of the project audit in due time.

Internal Audit has a full and unrestricted right to information. Internal Audit must be granted immediate access to any and all information requested as well as to activities, processes and IT systems.

Every organisational unit is obliged to provide Internal Audit with information of its own accord if serious deficiencies have been observed or are suspected, or if noteworthy damage has occurred or is suspected in the unit's area of responsibility.

In particular, information that is material from a risk-related point of view must be passed on to the Head of Internal Audit as well as to management and the person responsible, without delay.

For further details on the internal control system, please refer to pbb Group's Annual Report 2022, Risk and Opportunity Report, chapter "Organisation and principles of the internal controlling system " (pages 41 et seqq.).

Risk types

pbb Group differentiates between the following material risk types for its business activities:

- Credit risk (counterparty credit risk)
- Market risk
- Liquidity and funding risk
- Operational risk
- Business and strategic risk
- Real estate risk
- Pension risk
- Central counterparty risk
- ESG (environmental, social, governance) risk

Details pertaining to separate risk categories as per Article 435 (1) of the CRR can be found subsequently in this Disclosure Report, which includes additional information about managing credit risk (counterparty credit risk), market risk, liquidity and funding risk, operational risk and ESG (environmental, social and governance) risks. The risk categories of business and strategic risk, real estate risk, pension risk and central counterparty 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 projected figures – as a result of strategic decisions, false assumptions or unexpected changes in external conditions, to the extent that such deviations are not covered by other risk types such as market risk, credit risk (counterparty credit risk) or operational risk. Please refer to the chapter “Economic capital and risk-bearing capacity (ICAAP)” for further details on the quantification and calculation results of the economic capital for business and strategic risk.

Real estate risk

Real estate risk is defined as the potential negative change in value of pbb’s own properties due to a deterioration of the real estate market or economic framework, or a negative change in the special characteristics of the individual properties caused by vacancies, change in potential uses, structural damage, the need for investment, legal and economic frameworks, and other factors. As at 31 December 2022 and as at 31 December 2021, 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. Pension risk is considered within the scope of ICAAP. Pension risk is included in the market risk; for details, please refer to the chapter “Economic capital and risk-bearing capacity (ICAAP)”.

Central counterparty (CCP) risk

Central counterparty (CCP) risk defines the risk of losses caused by liability claims of the CCP against pbb, for example, if a clearing member were to default. The risk is taken into account in the economic perspective, using a buffer in the available financial resources, and in the normative perspective when calculating risk-weighted assets.

Economic capital and risk-bearing capacity (ICAAP)

This chapter illustrates pbb's approach to assessing the adequacy of its internal capital, in accordance with Article 438 (a) to (c) of the CRR.

Internal Capital Adequacy Assessment Process (ICAAP)

Pursuant to section 91 (2) of the AktG and section 25 a (1) of the KWG, pbb is obliged to establish appropriate and effective internal procedures 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 Capital Requirements Directive (CRD).

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 and an economic perspective. Both perspectives are aimed at the sustainability of business and capital planning, and at the long-term viability of pbb Group.

The normative perspective is geared towards securing capital- and liquidity-related regulatory and supervisory requirements 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 minimum 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.

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 overall risk is calculated and compared to economic capital.

The risks with an impact on capital and income identified as material within the risk inventory – i.e. market risk, credit risk, business and strategic risk, operational risk and real estate risk – are included in the ICAAP, using models or other methods to quantify the economic capital of these risk types. Within these types of risk, there are additional material sub-risks on a granular level that were taken into account as other material risks in the ICAAP during the period under review, with extension risk, settlement risk, market risk under TLTRO III, model risks and realisation risk for clients in default combined into a single category. 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 based on risk and capital indicators, together with 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 a defined escalation process, supports the continuous safeguarding of an appropriate capitalisation.

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

The methods of calculating economic capital for the individual risk types, as well as the risk indicator values as at the reporting date, are described in greater detail in the following sections: “Quantification of economic capital for 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 credit risks into account. Risks are calculated for a one-year period, using a confidence level of 99.9%.

The sections below provide an overview of how economic capital was calculated for the individual material risk types in 2022.

Economic capital for credit risk (counterparty credit risk)

To calculate credit risk at portfolio level, pbb uses a credit portfolio model based on the approach of what is known as an asset value model. The main idea is that the repeated simulation of correlated rating migrations for borrowers, and associated portfolio revaluation, can be used to derive a statistical distribution of losses – which in turn is 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 the individual borrower units on a risk-adjusted basis, using the expected shortfall principle. This ensures a risk-adequate allocation to borrowers, and thus constitutes a key component of risk-oriented credit portfolio management. Correlations between borrowers, borrower groups and regions were updated during the observation period.

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, but are regularly updated, thereby representing a component of overall risk as “other risks”.

Economic capital for market risk (including pension risk)

Economic capital for market risk is calculated to identify potential financial losses resulting from pricing changes affecting all positions. For this purpose, potential non-systematic losses, derived from the historical time series of certain influencing (risk) factors such as interest rates, exchange rates or credit spreads, are derived from a historical period going back to 1 July 2007. The historical observation period for risk factors underlying market risk calculations therefore comprises more than ten years, ensuring that adverse economic phases for pbb 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 in turn allows determination of economic capital at the set confidence level.

Economic capital for operational risk

Under the ICAAP, operational risk is quantified using the loss distribution approach (LDA), whereby distributions for damage amounts and frequency are determined individually, using internal loss data from the loss database. External data and scenario-based data is also included in the modelling approach. The full loss distribution is generated using Monte Carlo simulation techniques which consider diversification effects between the various sub-types of risk and modelling categories. Economic capital for operational risk includes a buffer for potential model uncertainty. Furthermore, it is ensured that the economic capital figure calculated does not fall short of a specific floor. This floor is in line with the regulatory capital calculated in accordance with the standardised approach pursuant to the CRR. Sub-types of operational risk which can only be partially quantified, or not at all, such as reputational risk, are covered by 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 re-sources, 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 projected 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.

Results of the risk-bearing capacity analysis

Normative perspective

For a detailed description of the key regulatory ratios measured as at the reporting date (CET1 ratio, Tier 1 ratio, own funds ratio, MREL and leverage ratio), please refer to the chapter “Own funds and assets”. Requirements for regulatory capital ratios were met at all times in the reporting year. 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, either in the base scenario or in the stress scenarios.

Economic perspective

In the economic perspective, overall risk after diversification effects declined in the period under review, mainly due to lower market and credit risks. Lower economic capital for market risk was driven mainly by lower credit spread and interest rate risks. Economic capital for credit risk declined in the VP, in particular due to regular modifications to parameters, as well as to repayments and widening credit spreads in the Italian portfolio. These modifications to parameters, together with a decline in volume and lower LGD levels, were a material reason for the reduction in the PIF segment. In the REF segment, the rise in economic capital is largely explained by these modifications to parameters and new business. Business and strategic risk is reported at € 67 million. The reason for the increase was the absence of income from floors in the first half-year and higher funding costs as a result of higher interest rates. The first partial repayment of the TLTRO was made towards the end of the year, which in a stress scenario would lead to lower cash holdings and therefore to a high funding requirement. Other material risks, in which the model risk is also reported, have increased slightly. Economic capital for operational risk is determined at least annually and has seen a minor decline, resulting from the update of data used in the model. pbb continued to hold no own properties during the period under review.

This was offset by available financial resources, which declined during the period under review. In addition to the dividend payment made in May 2022, the exclusion of the additional equity instruments (AT1 capital) from available financial resources and the negative development of hidden reserves/encumbrances were responsible for this decline. Excess coverage was lower than at the 2021 year-end. The internal capital adequacy ratio, defined as the ratio of available financial resources and diversified economic capital, has increased slightly. Overall, the Bank's risk-bearing capacity at the reporting date was demonstrated for the economic perspective as well.

EU OVC: ICAAP – Risk-bearing capacity economic perspective

		a	b	c
			Economic perspective	
All figures in € million, unless otherwise stated		31.12.2022	31.12.2021	Change
1	Credit risk	965	1,108	-143
2	Market risk	457	665	-208
3	Operational risk	94	97	-3
4	Business and strategic risk	67	-	67
5	Property risk	-	-	-
6	Other risks	69	66	3
7	**Total before diversification effects**	**1,652**	**1,937**	**-285**
8	**Total after diversification effects**	**1,563**	**1,812**	**-249**
9	Available financial resources before net hidden losses	2,854	3,150	-296
10	Net hidden losses	-116	-	-116
11	**Available financial resources**	**2,738**	**3,150**	**-412**
12	Excess capital	1,175	1,338	-163
13	Capital adequacy ratio in %	175	174	1

Should credit spreads 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 encumbrances and lower equity) are to be expected, notwithstanding any countermeasures taken.

Opportunities

A quick economic recovery would lead to narrowing credit spreads and generally improve ratings. This would strengthen available financial resources and hence, increase 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, as well as the Stress Test Committee, which reports directly to the Risk Committee.

As part of an integrated approach, the impact of macroeconomic stress scenarios on the material metrics of the normative and economic perspectives was calculated for a horizon of several years during the period under review. With the war in Ukraine in mind, and also uncertainty in relation to bottlenecks in energy supplies, stress scenarios were developed using various degrees of severity and analysed to ascertain how these impact pbb Group. Given the highly dynamic development, these scenarios are subject to considerable uncertainty. In addition, several climate-specific scenarios were developed and calculated in 2022, with a focus on transitional risk as well as physical climate risks.

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 constellations of parameters under which risk-bearing capacity would be at risk.

Credit risk

Credit risk management (including counterparty credit risk)

This chapter illustrates the risk management objectives and policies in accordance with Article 435 (1) of the CRR for credit risk (counterparty credit risk) at pbb Group.

Definition

Credit risk generally refers to the risk of an unexpected default or decline in the market value of a receivable (loan or bond) or of a derivative (alternatively, of an entire portfolio of receivables or derivatives) resulting from a deterioration in the collateral value or deterioration in a country's or a counterparty's credit quality.

Credit risk includes default risk, migration risk, realisation risk for clients in default, transfer and conversion risk, tenant risk, settlement risk, extension risk as well as concentration risk, as defined in pbb Group's risk strategy:

Default risk

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

Migration risk

Migration risk is the risk of a loss in value of a receivable caused by rating migration. This includes both the risk of rating migrations of traditional borrowers and the migration risk 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 also included.

Realisation risk

Realisation risk related to defaulted clients is the risk that recognised risk provisioning changes during the analysis period, or that the actual realisation amounts differ from the risk provisioning amounts.

Transfer risk

Transfer risk is the risk that a government or central bank restricts the use of a currency to its own country, and also comprises conversion risk, i.e. 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 firstly refers to the risk that the relevant borrower’s debt servicing capacity is negatively affected by a potential loss in rental income from properties. It also refers to secondary concentration risk (tenant cluster risk) that arises when one and the same tenant is the (main) tenant of several properties financed by pbb.

Settlement risk

Settlement risk is defined as the risk that pbb 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 resulting from clustering with regard 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 Real Estate Finance (REF), Public Investment Finance (PIF), Value Portfolio (VP) and Consolidation & Adjustments (C&A) segments. Strategic business is attributable to commercial Real Estate Finance (REF) and Public Investment Finance (PIF). The risk strategy also reflects this structure.

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

Risk reporting

pbb’s risk reporting on credit risks comprises 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 expected loss development and the unexpected loss development via value at risk (VaR). The report shows credit risk at pbb Group level in the context of overall bank risk and the risk-bearing capacity, it discloses limit utilisations and violations of existing limits, and also identifies risk concentrations. Key indicators such as the development of the exposure at default (EaD), of expected loss (EL), of the credit value at risk (credit VaR), and of problem loans are integrated in this report and discussed by the Management Board. The report is also submitted to the RLA of the Supervisory Board for its information; the committee addresses the report at its meetings on a regular basis.

CRM REF portfolio reporting

CRM REF portfolio reporting, which was introduced in the year under review, provides a breakdown of the REF portfolio (as well as various parameters such as the expected loss in basis points) by country and asset class, and reports upon critical facilities, forbearance, tenant risks and real estate sub-markets. This quarterly reporting package is made available to the

CCO, the CRO, the Management Board and the Risk Management and Liquidity Strategy Committee of the Supervisory Board.

CRM Public Sector & Corporates Reporting

CRM Public Sector & Corporates Reporting, which reports on the PIF, VP and C&A segments, was also introduced in the year under review. For this purpose, the portfolio is analysed based on various criteria such as countries, remaining term to maturity, type of business partner or product class. Top exposures, critical facilities, forbearance and financial institutions are also reported on. The reporting package is made available to the CCO, the CRO, the Management Board and the Risk Management and Liquidity Strategy Committee of the Supervisory Board on a semi-annual basis.

New business decisions

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

Existing business

Within day-to-day business, other regular reports support operational management in controlling risks at sub-portfolio level, and in identifying them in a timely manner.

Unusual developments

Unusual developments potentially resulting in a major deterioration of an individual exposure's risk situation are disclosed ad-hoc vis-à-vis a wider group of stakeholders, including the CRO, via Credit Issue Notes.

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

Credit portfolio model

pbb Group uses a credit portfolio model to calculate economic capital for credit risk. Please refer to the "Economic capital and risk-bearing capacity (ICAAP)" chapter for details on this model and the quantification of economic credit risk.

Stress testing

The chapter on "Economic capital and risk-bearing capacity (ICAAP)" elaborates on stress tests regarding economic capital in credit risk.

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

Risk quantification in accordance with the CRR

The Basel Committee's Basel III Framework Agreement was transposed into European law with adoption of the CRR. pbb applies the advanced IRBA approach and the standardised approach (CRSA).

Risk management and monitoring

Risk management

At portfolio level, the targeted portfolio structure is determined in the risk strategy by using structural components. Limits are also based on available financial resources, and include:

- The limitation of country risks
- The definition of strategic risk parameters (e.g. regions, financing term).

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

- Analysis of portfolio developments in the Risk Committee
- Determination of the credit VaR at portfolio level using a credit portfolio model, with some limits applied at segment level; analysis of concentration risks and various stress tests
- Central Group-wide monitoring of risk concentrations via particular, regular and event-driven assessments, for example on a regional or product level
- Continuous analysis of the portfolio and relevant markets by the local Credit Risk Management units
- Regular collateral assessment
- Special reports for exposures which are potentially at risk (e. g. credit issue notes)
- Calculation of a risk-adjusted margin using economic income after tax.

The lending authority regulations determine the approval powers for lending decisions within new and existing business at Group level, depending on counterparty group, EL class and exposure size. Approval powers are assigned to individual employees in line with their individual experience and qualification.

Risk management and monitoring

On individual transaction level, the credit process guidelines define the necessary steps for risk assessment in the event of new business, substantial changes (e.g. extensions or credit limit increases), and procedures for transferring exposures to the watchlist or workout.

Key processes within credit risk management and monitoring, as well as of the relevant units involved, are described below:

The CRM units 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 by the RMC unit and validated and calibrated once a year, are used for valuation purposes and for preparing lending decisions in new and extension business. PAV provides support in the analysis and assessment of collateral.

The Legal department, where appropriate in collaboration with external lawyers / law firms, is responsible for drawing up contracts and structuring collateral.

Defined early warning indicators are monitored continuously by CRM. Identification of material irregularities triggers an extraordinary credit risk review (including a review of the collateral value) which illustrates alternative courses of action. These cases are also added to a monthly, at least however quarterly, monitoring cycle and presented to the Watchlist Committee.

If there are indicators for a deterioration in credit quality, the level of the stage 3 impairment or of specific allowances is determined in accordance with IFRS or HGB, as the case may be. The Risk Provisioning Committee discusses the results and, where necessary, takes decisions regarding recognition or reversal of stage 3 impairments / specific allowance.

Where an individual decision is taken as to whether a potential problem loan (or stage 3 impairment (IFRS) or specific allowance (HGB)) is to be restructured or liquidated, probability-weighted scenario analyses outlining the potential development of the borrower, of collateral and/or the relevant market, are performed. These analyses are reviewed regularly or on an event-driven basis. Decisions to this effect are made within the scope of pbb's applicable lending authority regulations.

Critical exposures (watchlist) as well as restructuring and workout cases (problem loans) are disclosed on an aggregate basis once a month in the Group Risk Report, to the Risk Committee, and upon request to the Management Board and the Supervisory Board (special analyses).

Annual back-testing of stage 3 impairments as stipulated by MaRisk was also introduced in the reporting year. The results of the analysis are presented to the RPC for acknowledgement at the start of each new financial year.

Risk hedging and risk mitigation

Real Estate Finance

Financings in the REF segment are usually secured by property liens. As part of the decision-making process in the case of new financings, the LTVs (loan-to-value ratios), property (including micro and macro location, rental situation, state of the property), and market circumstances are discussed and taken into consideration when assessing individual loans. For existing exposures, this monitoring is carried out on a regular basis, at least annually.

Besides property liens, collateral provided for financings in the REF segment also includes assignments of rental payments as well as insurance benefits; this is supported by borrowers' extensive disclosure and reporting obligations. Apart from property liens, pbb only considers selected collateral to be of value within the credit assessment process or LGD calculation, including – under certain circumstances – cash collateral, bank guarantees and guarantees from public-sector authorities. In the event that col-lateral is provided in a foreign currency, i.e. in a currency differing from the loan currency, pbb calculates risk buffers to take ac-count of potential foreign exchange risks.

Real estate valuation in the REF segment is subject to strict quality criteria. Real estate collateral values are determined when the loan is granted, and reviewed once a year. pbb maintains an independent real estate analysis unit (PAV) which reports to the Management Board member responsible for Treasury. All staff members in the PAV department involved in real estate analysis are certified in accordance with ISO 17024 (HypZert standard), and most of them have additional qualifications (such as RICS membership). PAV is always involved in the initial valuation (when a new loan is granted) and regular revaluations, as well as in the (at least) annual valuation monitoring. Depending on the type and location of the property involved, market developments, and other risk indicators, valuation monitoring may also be carried out by Credit Risk Management (CRM) employees, 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, amongst other factors. Monitoring of complex developments is usually carried out by external project monitors on pbb's behalf, on a monthly to quarterly basis, coordinated and supervised by PAV. Monitoring of less complex developments is carried out at least every three months, by experienced and specialised internal property analysts. CRM monitors costs, thus facilitating a current overview of actual costs, and cost projections for the measure/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 (Anstaltslast) of public-sector entities applicable 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 PIF exposures, guarantees or the legal framework are supplemented by additional loan collateral, as well as borrowers' disclosure and reporting obligations. However, such additional loan collateral is generally not considered as valuable in assessing the exposure, or for the purposes of calculating LGD.

Treasury

Treasury's main responsibility in this context is pledging or accepting cash deposits or securities as collateral when trading with other banks. Collateralisation is based on standard agreements, which can be amended in individual cases if required or which can be subjected to individual reviews by Legal.

Opportunities

Parameters for credit risk metrics are defined using statistical methods on the basis of numerous historical observations. The risk metrics also depend on assumptions relating to future developments of macroeconomic 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 arising from credit risk could turn out to be lower than quantified by the risk metrics. Such potentially positive developments represent opportunities for pbb Group which can be utilised to reduce risk.

More specifically, opportunities arise if fewer loans are affected by performance default than assumed within the risk quantification process. Opportunities may also result from a lower than expected number of migrations to weaker rating classes.

Loss ratios of non-performing loans which are lower than assumed within the risk quantification process also offer opportunities. Lower loss ratios can be triggered by various positive developments. Firstly, the realisation of collateral might generate higher proceeds than assumed within the risk quantification process. Secondly, a higher percentage of non-performing loans may recover without loss than has been the case in the past

Besides positive developments in default rates or loss ratios, opportunities may arise in connection with credit risk (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 market values of positions associated with replacement risk decrease as a result of market parameters such as interest rates or exchange rates changing.

Credit risk

This chapter provides the information required by Article 442 of the CRR pertaining to credit risk, in particular for loans and advances, securities/debt securities and off-balance sheet exposures, their credit quality and credit risk adjustments. It takes into account risk exposures for which the risk-weighted exposure amounts were calculated according to the advanced IRB approach (IRBA), based on internal rating procedures, as well as those whose risk-weighted exposure amounts were calculated according to the standardised approach (CRSA).

Counterparty credit risk exposures (derivatives and securities financing transactions) are excluded, as are securitisations that will be presented separately in the following chapters “Counterparty credit risk” and “Securitisations”.

Credit portfolio

Tables EU CR1, EU CR1-A and EU CR2 pursuant to Article 442 (c), (f), (g) of the CRR show the information about performing as well as non-performing/defaulted credit exposures, impairments recognised and provisions set up in the lending business as well as collateral and financial guarantees received, by financial asset and by counterparty.

On-balance sheet and off-balance sheet credit exposures

The gross carrying amounts of on-balance sheet and off-balance sheet credit exposures totalled € 55,482 million as at 31 December 2022, including cash balances at central banks and other demand deposits (EU CR1, line 005). At the end of the 2022 financial year, they were thus down by € -4,790 million compared to 31 December 2021 and down by € -1,989 million compared to 30 June 2022. € 43,445 million out of this € 55.5 billion was attributable to loans and advances; debt securities contributed € 6,905 million, and an amount of € 3,111 million relates to off-balance sheet exposures such as loan commitments and financial guarantees.

The decrease was mainly due to a markedly lower cash reserve (EU CR1, line 005: Cash balances at central banks and other demand deposits) and syndications. pbb Group made use of the additional voluntary repayment options granted by the ECB, using available liquidity in the central bank accounts for the partial repayment of TLTRO III liabilities (targeted longer-term refinancing operations). TLTRO tranches with a nominal value of € 5.75 billion were repaid early by the reporting date. More information about financial assets and their performance can be found in the Notes to pbb Group's Annual Report 2022.

Non-performing exposures

Non-performing loans and advances stood at € 833 million as at the disclosure date, based on gross carrying amounts, posting an increase of € +254 million during the 2022 financial year (€ +242 million compared to 30 June 2022).

Loans totalling € 356 million were transferred to recovery management in the Real Estate Finance segment. The full repayment of a loan in the amount of € 62 million and further (partial) repayments and currency effects of € 55 million contributed to reducing the volume. In public-sector financings (PIF segment), approx. € 48 million of additions totalling € 50 million (of which € 24 million related to the Russia-Ukraine war) were covered by export guarantees by the Federal Republic of Germany as at the disclosure date. Residual claims in the amount of € 32 million referring to other loans of one borrower, which were also covered by export credit guarantees, were settled in full. pbb Group did not hold any non-performing debt securities as at the disclosure date.

Stage 3 impairments recognised for the € 833 million of non-performing loans and advances amounted to € 211 million, with collateral and financial guarantees received for this exposure standing at € 606 million.

NPL ratio

pbb Group's non-performing exposure (NPE) ratio was 1.6% as at 31 December 2022, up +0.5 percentage points compared to 31 December 2021. Its non-performing loan (NPL) ratio, which only includes receivables (loans and advances), but no debt securities or off-balance sheet exposures, also rose by +0.5 percentage points compared to 31 December 2021, reaching 1.9%. These ratios are calculated pursuant to Article 8 no. 4 of the Pillar 3 Framework, excluding loans and advances held for sale, cash balances with central banks and other demand deposits.

EU CR1: Performing and non-performing exposures and related provisions

		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
		Gross carrying amount/nominal amount [1]						Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions						Accumulated partial write-off	Collateral and financial guarantees received [2]	
		Performing exposures			Non-performing exposures			Performing exposures – accumulated impairment and provisions			Non-performing exposures – accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions				On performing exposures	On non-performing exposures
All figures in € million			thereof: stage 1	thereof: stage 2		thereof: stage 2	thereof: stage 3		thereof: stage 1	thereof: stage 2		thereof: stage 2	thereof: stage 3			
005	Cash balances at central banks and other demand deposits	2,020	2,020	-	-	-	-	-	-	-	-	-	-	-	-	-
010	**Loans and advances**	**42,612**	**33,219**	**8,999**	**833**	**0**	**833**	**-176**	**-44**	**-132**	**-211**	**0**	**-211**	**0**	**29,322**	**606**
020	Central banks [3]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
030	General governments	7,714	7,465	111	-	-	-	-1	-	-1	-	-	-	-	178	-
040	Credit institutions	4,787	4,787	-	-	-	-	-	-	-	-	-	-	-	544	-
050	Other financial corporations	1,273	963	309	26	-	26	-3	-	-3	-	-	-	-	1,229	26
060	Non-financial corporations	28,834	19,999	8,579	806	-	806	-172	-44	-128	-211	-	-211	-	27,366	580
070	thereof: SMEs	9,527	7,088	2,376	70	-	70	-46	-15	-31	-1	-	-1	-	9,364	69
080	Households	-	5	-	1	-	1	-	-	-	-	-	-	-	5	1
090	**Debt securities**	**6,905**	**6,786**	**0**	**0**	**0**	**0**	**-1**	**-1**	**0**	**0**	**0**	**0**	**0**	**1,126**	**0**
100	Central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
110	General governments	5,243	5,163	-	-	-	-	-1	-1	-	-	-	-	-	480	-
120	Credit institutions	1,635	1,598	-	-	-	-	-	-	-	-	-	-	-	646	-
130	Other financial corporations	28	25	-	-	-	-	-	-	-	-	-	-	-	-	-
140	Non-financial corporations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
150	**Off-balance-sheet exposures**	**3,106**	**2,595**	**469**	**5**	**0**	**5**	**-13**	**-5**	**-8**	**0**	**0**	**0**	—	**2,795**	**4**
160	Central banks	-	-	-	-	-	-	-	-	-	-	-	-	—	-	-
170	General governments	166	125	-	-	-	-	-	-	-	-	-	-	—	-	-
180	Credit institutions	-	-	-	-	-	-	-	-	-	-	-	-	—	-	-
190	Other financial corporations	42	42	-	-	-	-	-	-	-	-	-	-	—	42	-
200	Non-financial corporations	2,898	2,429	469	5	-	5	-13	-5	-8	-	-	-	—	2,753	4
210	Households	-	-	-	-	-	-	-	-	-	-	-	-	—	-	-
220	**Total [4]**	**54,644**	**44,621**	**9,468**	**837**	**0**	**837**	**-190**	**-50**	**-140**	**-211**	**0**	**-211**	**0**	**33,243**	**611**

[1] Gross carrying amount (nominal value for off-balance sheet exposures) before impairments on financial assets and provisions in the lending business, but after amortisation, before application of credit risk mitigation techniques and before credit conversion factors (CCF).
[2] The value of stated collateral and guarantees is limited to the carrying amount (nominal value for off-balance sheet exposures) of the secured/guaranteed exposures.
[3] Classification of a counterparty in line with the FINREP breakdown into sectors is based on the direct counterparty (e.g. direct borrower, counterparty or securities issuer). In the case of exposures that several debtors entered into jointly, classification is based on the more relevant or decisive borrower.
[4] Including “Cash balances at central banks and other demand deposits” reported in line 005.

EU CR1-A: Maturity of exposures

		a	b	c	d	e	f
		Net exposure value [1]					
All figures in € million		On demand [2]	<= 1 year	> 1 year <= 5 years	> 5 years	No stated maturity [3]	Total
010	Loans and advances [4]	1,072	8,902	18,622	14,462	-	43,058
020	Debt securities	-	1,098	1,788	4,015	3	6,904
030	**Total**	**1,072**	**10,000**	**20,410**	**18,477**	**3**	**49,962**

[1] Net exposure value: gross carrying value after impairments on financial assets and amortisation, but before application of credit risk mitigation techniques. EU CR1-A does not include off-balance sheet items.
[2] The counterparty can choose when the exposure will be redeemed (e.g. short-term receivables).
[3] The risk position, for reasons other than the counterparty being able to choose the redemption date, has no fixed residual maturity.
[4] The Pillar 3 Framework, Annex XVI, excludes loans and advances held for sale, cash balances at central banks and other demand deposits.

EU CR2: Changes in the stock of non-performing loans and advances

		a
All figures in € million		Gross carrying amount [1]
010	**Initial stock of non-performing loans and advances [2]**	**579**
020	Inflows to non-performing portfolios [3]	496
030	Outflows from non-performing portfolios [4]	-195
040	Outflows due to write-offs	-
050	Outflow due to other situations [5]	-48
060	**Final stock of non-performing loans and advances [6]**	**833**

[1] Gross carrying amount (nominal value for off-balance sheet exposures) of defaulted on-balance and off-balance sheet exposures before impairments on financial assets and provisions in the lending business, but after amortisation, before application of credit risk mitigation techniques and before credit con-version factors (CCF).
[2] Stock of defaulted loans and advances as at the end of the last financial year.
[3] Loans and advances that defaulted in the course of the disclosure period.
[4] Loans and advances classified as “not defaulted” as at the disclosure date, i.e. that are no longer considered defaulted/non-performing.
[5] Adjustment item from transfers to recovery management during the disclosure period, reduced by liquidations/restructurings as well as repayments/redemptions.
[6] Stock of non-performing loans and advances as at the disclosure date.

Credit quality

The following tables EU CQ1, EU CQ3, EU CQ4, and EU CQ5 pursuant to Article 442 (c), (d) and (e) of the CRR provide information on the credit quality of on-balance sheet and off-balance sheet credit exposures. This includes information on forborne (restructured) exposures and the related non-performing or defaulted exposures and credit risk adjustments. In addition, the tables provide information on collateral and financial guarantees received as well as breakdowns by counterparty, geography (country) and industry (NACE code).

As at the disclosure date, pbb Group reported an unchanged NPL ratio (gross carrying amount of non-performing loans and advances divided by the gross carrying amount of performing and non-performing loans and advances) of clearly below 5%. In line with the Pillar 3 framework, disclosure of tables EU CR2a, EU CQ2, EU CQ6 and EU CQ8 pursuant to Article 442 (c) of the CRR is therefore not relevant. pbb Group regularly checks if further disclosure requirements apply when the 5% threshold for the NPL ratio is exceeded.

Disclosure of table EU CQ7 “Collateral obtained by taking possession and execution processes” pursuant to Article 442 (c) of the CRR is not relevant for pbb Group, either. EU CQ7 provides an overview of the foreclosures performed by the institution by taking possession of non-performing exposures. pbb Group did not hold any foreclosures or other seized collateral as at 31 December 2022.

Defaulted and non-defaulted exposures

The gross carrying amounts of on-balance sheet (loans and advances, debt securities, cash balances at central banks and other demand deposits) and off-balance sheet credit exposures (irrevocable loan commitments) totalled € 55,482 million as at the disclosure date.

Performing exposures accounted for € 54,645 million or around 99%, the defaulted on-balance sheet and off-balance sheet exposures for € 837 million. Level 3 impairments of € 211 million have already been recognised for the defaulted loans and advances, whilst the collateral and financial guarantees received amount to € 606 million.

According to the IRB approach, credit exposures are considered “defaulted” if a borrower has defaulted pursuant to Article 178 of the CRR or if another contractual or regulatory trigger applies. For instance, pbb Group considers it a default if a borrower is in material payment arrears or has material overdrafts for more than 90 days, or if it is unlikely that the borrower will meet their payment obligations in full. The credit exposures of a borrower which meet one or more default criteria are assigned a probability of default (PD) class with a probability of default of 100%.

Under IFRS 9, the same definition of default is used as for regulatory purposes.

“Non-defaulted” exposures are receivables not considered defaulted pursuant to Article 178 of the CRR, meaning that none of the default events mentioned therein have occurred.

Non-performing exposures

All exposures that are considered defaulted according to Article 178 of the CRR are also viewed as “non-performing” by pbb Group. Therefore, the aforementioned defaulted on-balance sheet and off-balance sheet exposures in the amount of € 837 million are also deemed “non-performing” exposures.

An exposure is considered “non-performing” if one of the following criteria is met: it is a material exposure that is past due for more than 90 days, or it is an exposure for which it is considered unlikely that the borrower will meet their payment obligations in full without realising collateral, regardless of whether payments are already overdue and regardless of the number of days of default, if any.

This classification as “non-performing” is carried out regardless of whether the exposure is classified as “defaulted” for regulatory purposes within the meaning of Article 178 of the CRR, or as “impaired” for accounting purposes within the meaning of the applicable IFRS accounting standards.

Impaired exposures

An exposure is considered “impaired” if stage 3 impairments were recognised in line with the accounting framework applied by pbb Group, the International Financial Reporting Standards (IFRS). As at 31 December 2022, the recognised stage 3 impairments amounted to € 211 million (€ +39 million compared to 31 December 2021), and the gross carrying amount of impaired exposures (loans and advances) was € 833 million.

All exposures for which a (stage 3) impairment was identified in accordance with the IFRS accounting standards are also viewed as “non-performing” by pbb Group.

The rules and methods for impairments as per IFRS 9 are described in the section “Credit risk adjustments”

Past-due exposures

A classification of an exposure as “past due” – both for accounting and regulatory purposes – is carried out for past-due exposures if the debtor fails to make contractually-agreed interest and principal payments when due.

The credit exposures (loans and advances) that were partially or fully past due as at the disclosure date amounted to a total of € 833 million (gross carrying amount), of which the exposures past due (and non-performing) for more than 90 days amounted to € 239 million. The exposures past due for more than 90 days are also deemed to be impaired.

Forborne (restructured) exposures

On-balance sheet and off-balance sheet exposures with forbearance measures amounted to a total of € 2,252 million (gross carrying amount) as at the disclosure date (€ -21 million vis-à-vis 31 December 2021), of which € 1,637 million qualified as performing and € 615 million as non-performing (or defaulted) loans. Impairments of € 197 million have been recognised for the non-performing, forborne exposures. Collateral and financial guarantees for exposures with forbearance measures amount to € 2,017 million, of which € 404 million accounts for non-performing, forborne exposures.

Exposures associated with a high risk of default are restructured by pbb Group should the borrower face financial difficulties – if a positive going-concern forecast has been made for the respective credit exposure. This restructuring process is based on an amendment to the underlying contractual relationship via unilateral or mutual declaration(s) of intent. Restructuring agreements aim to increase pbb Group’s opportunities to realise outstanding exposures, or at least reduce the exposure’s default risk, and usually comprise standstill agreements, extended loan terms, changed interest payment/repayment dates, or the suspension of contractual agreements, such as financial covenants, thus enabling borrowers to meet their contractual payment obligations again. pbb Group’s Credit Risk Management unit is responsible for managing the default risk of restructured loans.

Early warning system

pbb Group’s early warning system defines criteria triggering the transfer of exposures to the watchlist, or the reclassification as restructuring and workout loans (e.g. past due payments or failure to meet financial indicators such as loan-to-value (LTV) or interest service coverage (ISC) ratios). 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 or restructuring and problem loans (restructuring and workout) include:

- Watchlist loans: the default in payment exceeds 60 days or another defined early warning signal is triggered (e.g. bankruptcy of a main tenant in the REF segment).
- Restructuring loans: a default has occurred (for example, due to payments past due by more than 90 days, or the borrower's bankruptcy), or another contractual or regulatory trigger is applicable. The focus with restructuring is on active implementation of a restructuring concept – with the objective of either returning the exposure to regular coverage, or realising collateral on the market, without enforcement measures. Credit quality is consistently tested for deterioration, and stage 3 impairments (in accordance with IFRS) or specific allowances (in accordance with the HGB) are recognised if necessary. Impairments or their underlying assumptions are reviewed regularly or on an ad-hoc basis.
- Workout loans: there are no indications for a potential restructuring of the loan. Enforcement measures have been or will be introduced. Stage 3 impairments (in accordance with IFRS) or specific allowances (in accordance with the HGB) are recognised if necessary. Impairments or their underlying assumptions are reviewed regularly or on an ad-hoc basis.

CRM REF Workout is responsible for determining and reviewing impairments in accordance with applicable accounting standards (German Commercial Code (HGB) and IFRS).

Impact of the Ukraine war

pbb Group has not experienced any significant direct effects from the war between Russia and Ukraine, since the Group has no direct exposure to borrowers domiciled in Russia, Belarus or Ukraine, nor has it financed any properties in these countries. Moreover, pbb has not extended any financings to persons included on the European Union's sanctions lists as at the disclosure date. pbb Group has two Russia-related public investment financings with a gross carrying amount totalling € 24 million in its portfolio, which are broadly guaranteed by the Federal Republic of Germany. The uncovered part amounted to just under € 2 million, nearly all of which was recognised as stage 3 impairment.

EU CQ1: Credit quality of forborne exposures

		a	b	c	d	e	f	g	h
		Gross carrying amount/nominal amount of exposures with forbearance measures [1]				**Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions**		**Collateral received and financial guarantees received on forborne exposures [2]**	
		Performing forborne [3]	**Non-performing forborne [3]**			**On performing forborne exposures**	**On non-performing forborne exposures**		**thereof: collateral and financial guarantees received on non-performing exposures with forbearance measures**
All figures in € million				**thereof: defaulted**	**thereof: impaired**				
005	Cash balances at central banks and other demand deposits	-	-	-	-	-	-	-	-
010	**Loans and advances**	**1,613**	**611**	**611**	**611**	**-22**	**-197**	**1,989**	**400**
020	Central banks	-	-	-	-	-	-	-	-
030	General governments	-	-	-	-	-	-	-	-
040	Credit institutions	-	-	-	-	-	-	-	-
050	Other financial corporations	47	-	-	-	-	-	47	-
060	Non-financial corporations	1,566	611	611	611	-22	-197	1,942	400
070	Households	-	-	-	-	-	-	-	-
080	**Debt Securities**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
090	**Loan commitments given**	**24**	**4**	**4**	**4**	**0**	**0**	**28**	**4**
100	**Total**	**1,637**	**615**	**615**	**615**	**-22**	**-197**	**2,017**	**404**

[1] Gross carrying amount (nominal value for credit commitments given) before impairments on financial assets and provisions in the lending business, but after amortisation, before application of credit risk mitigation techniques and before credit conversion factors (CCF).
[2] The value of stated collateral and guarantees is limited to the carrying amount (nominal value for credit commitments given) of the secured/guaranteed forborne exposures.
[3] Exposures with forbearance measures under Article 47b of the CRR can be defined as performing or non-performing, depending on whether they fulfil the conditions laid down in Article 47a of the CRR “Non-performing exposures”

EU CQ3: Credit quality of performing and non-performing exposures by past due days

		a	b	c	d	e	f	g	h	i	j	k	l
		Gross carrying amount/nominal amount [1]											
		Performing exposures			Non-performing exposures [2]								
All figures in € million			Not past due or past due ≤ 30 days	Past due > 30 days ≤ 90 days		Unlikely to pay that are not past due or are past due ≤ 90 days	Past due > 90 days ≤ 180 days	Past due > 180 days ≤ 1 year	Past due > 1 year ≤ 2 years	Past due > 2 years ≤ 5 years	Past due > 5 years ≤ 7 years	Past due > 7 years	thereof: defaulted 2)
005	Cash balances at central banks and other demand deposits	2,020	2,020	-	-	-	-	-	-	-	-	-	-
010	**Loans and advances**	**42,612**	**42,612**	**0**	**833**	**594**	**93**	**0**	**103**	**28**	**14**	**0**	**833**
020	Central banks [3]	-	-	-	-	-	-	-	-	-	-	-	-
030	General governments	7,714	7,714	-	-	-	-	-	-	-	-	-	-
040	Credit institutions	4,787	4,787	-	-	-	-	-	-	-	-	-	-
050	Other financial corporations	1,273	1,273	-	26	26	-	-	-	-	-	-	26
060	Non-financial corporations	28,834	28,834	-	806	568	93	-	103	28	14	-	806
070	thereof: SMEs	9,527	9,527	-	70	70	-	-	-	-	-	-	70
080	Households	5	5	-	1	-	-	-	-	-	-	-	1
090	**Debt securities**	**6,905**	**6,905**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
100	Central banks	-	-	-	-	-	-	-	-	-	-	-	-
110	General governments	5,243	5,243	-	-	-	-	-	-	-	-	-	-
120	Credit institutions	1,635	1,635	-	-	-	-	-	-	-	-	-	-
130	Other financial corporations	28	28	-	-	-	-	-	-	-	-	-	-
140	Non-financial corporations	-	-	-	-	-	-	-	-	-	-	-	-
150	**Off-balance-sheet exposures**	**3,106**	**0**	—	**5**	—	—	—	—	—	—	—	**5**
160	Central banks	-	-	—	-	—	—	—	—	—	—	—	-
170	General governments	166	-	—	-	—	—	—	—	—	—	—	-
180	Credit institutions	-	-	—	-	—	—	—	—	—	—	—	-
190	Other financial corporations	42	-	—	-	—	—	—	—	—	—	—	-
200	Non-financial corporations	2,898	-	—	5	—	—	—	—	—	—	—	5
210	Households	-	-	—	-	—	—	—	—	—	—	—	-
220	**Total [4]**	**54,644**	**51,538**	**0**	**837**	**594**	**93**	**0**	**103**	**28**	**14**	**0**	**837**

[1] Gross carrying amount (nominal value for off-balance sheet exposures) before impairments on financial assets and provisions in the lending business, but after amortisation, before application of credit risk mitigation techniques and before credit conversion factors (CCF).
[2] Non-performing exposures as per Article 47a of the CRR or defaulted exposures as per Article 178 of the CRR.
[3] Classification of a counterparty in line with the FINREP breakdown into sectors is based on the direct counterparty (e.g. direct borrower, counterparty or securities issuer). In the case of exposures that several debtors entered into jointly, classification is based on the more relevant or decisive borrower.
[4] Including “Cash balances at central banks and other demand deposits” reported in line 005.

EU CQ4: Credit quality of non-performing exposures by geography

			a	b	c	d	e	f	g
			Gross carrying/nominal amount [1]				Accumulated impairment	Provisions on off-balance-sheet commitments and financial guarantees given	Accumulated negative changes in fair value due to credit risk on non-performing exposures [3]
				thereof: non-performing		thereof: subject to impairment [2]			
All figures in € million					thereof: defaulted				
010	**On-balance-sheet exposures [4]**		**50,350**	**833**	**833**	**49,839**	**-387**	——	**0**
1	(AT)	Austria	4,685	-	-	4,683	-1	——	-
2	(DE)	Germany	14,855	65	65	14,628	-45	——	-
3	(ES)	Spain	3,034	-	-	3,034	-3	——	-
4	(FR)	France	7,771	-	-	7,753	-16	——	-
5	(GB)	United Kingdom	1,171	132	132	1,131	-97	——	-
6	(IT)	Italy	2,605	14	14	2,527	-11	——	-
7	(JE)	Jersey	602	107	107	602	-37	——	-
8	(LU)	Luxemburg	3,580	93	93	3,556	-85	——	-
9	(NL)	Netherlands	1,124	40	40	1,082	-1	——	-
10	(PL)	Poland	1,805	35	35	1,805	-6	——	-
11	(SE)	Sweden	847	-	-	847	-2	——	-
12	(US)	United States of America	4,826	299	299	4,781	-73	——	-
13		Other countries [5]	3,447	50	50	3,410	-11	——	-
020	**Off-balance-sheet exposures [4]**		**3,111**	**5**	**5**	——	——	**-13**	——
1	(AT)	Austria 3)	43	-	-	——	——	-	——
2	(DE)	Germany	1,525	-	-	——	——	-9	——
3	(ES)	Spain	71	-	-	——	——	-	——
4	(FR)	France	430	-	-	——	——	-1	——
5	(JE)	Jersey	145	-	-	——	——	-	——
6	(LU)	Luxemburg	242	-	-	——	——	-1	——
7	(NL)	Netherlands	156	-	-	——	——	-	——
8	(SE)	Sweden	155	-	-	——	——	-	——
9	(US)	United States of America	290	5	5	——	——	-1	——
10		Other countries [6]	55	-	-	——	——	-	——
030	**Total**		**53,461**	**837**	**837**	**49,839**	**-387**	**-13**	**0**

[1] Gross carrying amount (nominal value for off-balance sheet exposures) before impairments on financial assets and provisions in the lending business, but after amortisation, before application of credit risk mitigation techniques and before credit conversion factors (CCF).

[2] Impairment in line with the three impairment stages as defined in IFRS 9.

[3] Accumulated negative changes to the fair value due to credit risk; an impairment of the fair value is implied for financial assets at fair value through profit or loss.

[4] Regional allocation of exposures to a country is based on the direct counterparty's (e.g. direct borrower, counterparty or securities issuer) country of domicile.

[5] On-balance sheet credit exposures: for reasons of materiality and pursuant to the Pillar 3 framework, Annex XVI, pbb refrains from reporting all countries individually.
The line "Other countries" summarises countries which account for an on-balance sheet credit exposure of less than 1% each: Aruba, Bangladesh, Belgium, Bermuda, Cameroon, Czech Republic, Finland, Guernsey, Ghana, Gibraltar, Ireland, Japan, Cayman Islands, Liechtenstein, Latvia, Mauritius, Oman, Portugal, Romania, Saudi Arabia, Slovenia, Slovakia, Switzerland and the British Virgin Islands.
The "Other countries" line also comprises exposures to supranational organisations which are not allocated to the institution's country of domicile, but to this category, in line with the Pillar 3 framework, Annex XVI.

[6] Off-balance sheet exposures: for reasons of materiality and pursuant to the Pillar 3 framework, Annex XVI, pbb refrains from reporting all countries individually.
The "Other countries" line summarises countries which account for an off-balance sheet credit exposure of less than 1% each: Switzerland, Finland and Poland.

EU CQ5: Credit quality of loans and advances to non-financial corporations by industry

		a	b	c	d	e	f
		Gross carrying amount [1]				**Accumulated impairment**	**Accumulated negative changes in fair value due to credit risk on non-performing exposures**
All figures in € million			**thereof: non-performing**	**thereof: defaulted**	**thereof: loans and advances subject to impairment**		
010	Agriculture, forestry and fishing [2] [3]	-	-	-	-	-	-
020	Mining and quarrying	-	-	-	-	-	-
030	Manufacturing	52	-	-	52	-	-
040	Electricity, gas, steam and air conditioning supply	40	-	-	40	-	-
050	Water supply	162	-	-	162	-	-
060	Construction	325	-	-	325	-	-
070	Wholesale and retail trade	102	-	-	102	-	-
080	Transport and storage	66	24	24	66	-2	-
090	Accommodation and food service activities	136	-	-	96	-1	-
100	Information and communication	10	-	-	10	-	-
110	Financial and insurance actvities	-	-	-	-	-	-
120	Real estate activities	27,921	782	782	27,705	-379	-
130	Professional, scientific and technical activities	107	-	-	107	-	-
140	Administrative and support service activities	102	-	-	102	-	-
150	Public administration and defense, compulsory social security	-	-	-	-	-	-
160	Education	75	-	-	75	-	-
170	Human health services and social work activities	498	-	-	498	-	-
180	Arts, entertainment and recreation	41	-	-	41	-	-
190	Other services	3	-	-	3	-	-
200	**Total**	**29,640**	**806**	**806**	**29,384**	**-383**	**0**

[1] Gross carrying amount (nominal value for off-balance sheet exposures) before impairments on financial assets and provisions in the lending business, but after amortisation, before application of credit risk mitigation techniques and before credit conversion factors (CCF).
[2] Classification according to the counterparty's NACE code is based on the main business activity of the direct counterparty (e.g. the direct borrower, counterparty or securities issuer) or that of the most relevant or significant borrower. The NACE codes are in line with the NACE Regulation: statistical classification of economic sectors in the European Community.
[3] A counterparty classification considers only those counterparties within sectors in connection with non-financial corporations. As per Implementing Regulation (EU) No. 2021/451, Annex V, the FINREP sector "Non-financial corporations" comprises all "corporations and quasi-corporations not engaged in financial intermediation but principally in the production of market goods and the provision of non-financial services.

Credit risk adjustments

This section provides information pursuant to Article 442 (b) of the CRR on rules and methods for credit risk adjustments.

Impairment

The rules regarding impairments in accordance with IFRS 9 are relevant for financial assets measured either “at amortised cost” or “at fair value through other comprehensive income”, for lease receivables, and for off-balance sheet commitments such as loan commitments and financial guarantees. These rules do not apply to equity instruments. An impairment is implied in the fair value of those financial assets that are subsequently measured at fair value through profit or loss. The IFRS 9 impairment model provides for the recognition of impairments for credit defaults upon initial recognition of the financial asset (or at the date at which pbb Group becomes a contracting party to the loan commitment or financial guarantee) based on expected credit losses at that time. According to IFRS 9.5.5.17 this is “an unbiased and probability-weighted amount that is determined by evaluating a range of possible outcomes” and scenarios. The standard clarifies that the result is a probability-weighted average and not the most probable amount.

Allowances and provisions in the lending business

Upon initial recognition, risk provisioning in the lending business is generally based on expected defaults within the next twelve months (stage 1). The expected credit loss for a one-year period is that part of the lifetime expected credit losses corresponding to the expected credit losses from defaults that may occur for the financial instrument within twelve months after the reporting 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 financial asset’s lifetime expected credit loss. pbb Group does not apply the simplified approach for lease receivables, instead differentiating between stage 1 and 2 impairments.

Under IFRS 9, the same definition of default is used as for regulatory purposes. A default is assumed if

- it is unlikely that the borrower can fully meet their payment obligations; or if
- the borrower is in material payment arrears for more than 90 days.

pbb Group determines expected credit loss individually.

pbb Group has developed audit criteria for the allocation to the three impairment stages under IFRS 9; these criteria are closely linked to the methods and instruments applied within credit quality and risk monitoring. In line with credit risk management, monitoring intensifies with each impairment stage. Each financial asset which is not measured at fair value through profit or loss has to be allocated to stage 1 upon initial recognition if it is not credit-impaired. A financial asset moves to stage 2 if credit risk has increased significantly but said financial asset is not credit-impaired. This is the case

- if there is a rebuttable presumption that payment is more than 30 days past due; or
- the financial asset is non-investment grade and the multi-year probability of default at the 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 “30 days past due” criterion can be rebutted for example in the case of so called technical past dues. This can be the case, for example, if the borrower transfers the amount owed to a wrong account and corrects it at short notice.

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

A financial asset must be transferred to stage 3 if it is credit-impaired. A financial asset is credit-impaired when one or more events that have a detrimental impact on the estimated future cash flows of that financial asset have occurred. Indicators for a financial asset's credit impairment include observable data about the following events:

> significant financial difficulty of the issuer or borrower;
> a breach of contract, such as a default or delinquency in interest or principal payments;
> concessions granted by pbb Group to the borrower, for economic or legal reasons relating to the borrower's financial difficulty, that pbb Group would not otherwise consider;
> it is becoming probable that the borrower will enter bankruptcy or other financial reorganisation;
> the disappearance of an active market for that financial asset due to financial difficulties; or
> the purchase or origination of a financial asset at a high discount that reflects the incurred credit losses.

An entity shall only recognise the cumulative changes in lifetime expected credit losses since initial recognition as an impairment as at the balance sheet date for purchased or originated credit-impaired financial assets (POCI). Expected credit losses for such financial assets shall be discounted using the credit-adjusted effective interest rate determined at initial recognition. The credit-adjusted effective interest rate is applied to amortised cost from initial recognition. Recognition of interest income is determined this way for the entire lifetime of the asset, even if the borrower recovers. Interest income shall be attributed to the POCI asset, received repayments shall be recognised as repayments. pbb Group did not hold any purchased or originated credit-impaired financial assets, either as at 31 December 2022 or as at 31 December 2021.

Expected credit loss

pbb Group generally applies a model-based approach to determine the amount of expected credit losses, using the regulatory risk parameters (probability of default (PD) and loss given default (LGD)) and contractual information on the financial instruments, such as contractually agreed cash flows, for stage 1 and stage 2 impairments. The exposure size results from the comparison of contractually agreed and expected cash flows. The risk parameters listed above are linked to the exposure size to determine expected losses. In addition, expectations concerning prepayments (or prepayment rates), expected loan extensions (or extension rates) and expected drawings of undrawn parts of a commitment (or credit conversion factor/CCF) are considered in the expected cash flows. The PD risk parameter is determined individually for each borrower, based on client-specific rating procedures. These rating procedures use several client-specific risk factors, including leverage ratio, return indicators and similar quantitative indicators, as input factors. The LGD risk parameter is determined via specific LGD models; main input factors include the expected recovery rate resulting from the realisation of collateral or other asset parts, the transaction-specific ratio of the current collateral value and current carrying amount of the receivable, and the expected time until receipt of the recovery payment. These PD rating procedures and LGD models are also used for risk assessment and risk controlling within credit risk management.

The regulatory risk parameters are transformed in a suitable manner to meet the requirements set out in IFRS 9. These include the deduction of conservative adjustments used for regulatory purposes, the consideration of macroeconomic factors for the purpose of point-in-time transformation, and the transition from the regulatory discount rate to the effective interest rate required by IFRS 9. These transformations ensure, in particular, that the risk parameters are unbiased. Historical data on rating migration, and macroeconomic forecasts (regarding the unemployment rate, economic growth per country, the 5-year swap rate per currency and – for real estate financings – the development of collateral market values broken down by property types and regions, etc.) are used to determine multi-year probabilities of default. pbb Group makes use of appropriate information depending on the specific client type, and forecasts indicators based on internal analyses and externally available data. Interest income is calculated by applying the effective interest rate on the gross carrying amount of the financial asset, i.e. on the carrying amount before risk provisioning.

In determining point-in-time default probabilities, macroeconomic projections for the unemployment rate and gross domestic product – issued by the ECB, other central banks, and economic research institutions – are used. pbb bases its calculation for transactions at impairment stage 1 only on forecasts for the year 2023, but uses the forecasts up until 2026 for transactions at impairment stage 2. From 2027 onwards, a model for convergence to the long-term average will be applied.

pbb Group has established a limited adjustment of expected credit losses in form of a management overlay as at 31 December 2022 in order to properly reflect the current risk situation of office property financings. Management overlay is described

in detail in the Note “Financial assets at amortised cost after credit loss allowances (including claims from finance lease agreements)” to pbb Group’s Annual Report 2022 (pages 143 et seqq.).

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

Write-offs

pbb Group did not write off any financial assets in the 2022 financial year.

A financial asset might need to be written off under use of already recognised impairments, should a recovery not be feasible according to reasonable expectations. This applies in particular if it is probable that a residual claim will remain within the course of realisation of collateral and no further contributions are expected from the debtor (for example due to bankruptcy or lack of assets). In justified exceptions, pbb Group does attempt to collect (at least part of) the residual claim for the written-off exposures by means of enforcement measures.

Disclosure in the statement of financial position and the income statement

Financial assets measured at amortised cost: impairments of all three stages pursuant to IFRS 9 are stated under the line item “Impairments of financial assets measured at amortised cost” in the statement of financial position, and the amount of these financial assets is disclosed before and after consideration of loss allowance. In the income statement, impairments recognised for these financial assets are shown in net income from risk provisioning.

Financial assets measured at fair value through other comprehensive income: impairments of all three stages pursuant to IFRS 9 are stated under the line item “Accumulated other comprehensive income” (under equity) in the statement of financial position. In the income statement, impairments recognised for these financial assets are shown in net income from risk provisioning.

Provisions for the off-balance sheet lending business, such as irrevocable loan commitments and financial guarantees, are recognised in line with the impairment rules as per IFRS 9 and disclosed under the “Provisions” line item under “Liabilities”.

Credit risk mitigation techniques

This chapter provides information pursuant to Article 453 of the CRR on credit risk mitigation techniques used at pbb Group to offset credit risk (resulting from loans and advances, debt securities and off-balance sheet exposures) and counterparty credit risk (resulting from derivatives and securities financing transactions), including information both on the types of collateral used and concerning the main aspects of the provisions and procedures applicable to the assessment and management of this eligible collateral.

Main collateral used within credit risk mitigation

The strategic business segments of pbb Group are Real Estate Finance (REF) and Public Investment Finance (PIF); the focus is on business eligible for inclusion in Pfandbrief cover. To minimise credit risk (counterparty credit risk), pbb Group takes into account the following main types of collateral:

- Real estate (property liens)
- Guarantees
- Financial collateral.

Property liens (real estate) for real estate financings are especially important. pbb Group also accepts guarantees and financial collateral (mainly cash collateral, partly securities) for hedging purposes. Financial collateral is used in netting agreements for derivatives and securities financing transactions (securities lending/repo transactions).

pbb Group did not execute hedging transactions with credit derivatives (purchased or sold credit collateral) during the 2022 financial year, either as protection buyer or protection seller.

pbb's guarantors are mainly financial institutions and public-sector clients with very good creditworthiness. Within the scope of risk reporting, Risk Management & Control (RMC) keeps pbb's Management Board informed about the largest guarantors on a regular basis.

Using collateral to reduce capital requirements

Physical collateral (real estate) is taken into account as credit risk mitigating in the loss given default (LGD) calculation when assessing the LGD in the event of default. Financial collateral is taken into account to reduce credit risk when determining exposure values (exposure at default (EaD)). Guarantees are taken into account as credit risk mitigation by way of a regular PD substitution, meaning that the lower risk weight of the guarantor is allocated to the hedged part of a receivable. Besides property liens, collateral provided for financings in the REF segment also includes assignments of rental payments as well as insurance benefits which, however, are not taken into account for credit risk mitigation purposes pursuant to the CRR.

Internal pbb Group processing guidelines for each type of collateral set out the procedures for accepting collateral. The Bank usually employs standardised contractual stipulations to ensure legal enforceability, which are reviewed on an ongoing basis due to the ever-changing legal environment. A Group-wide process has been established, aiming to ensure that all CRR-relevant collateral is continuously subject to legal monitoring. Calculation and determination of collateral values is documented in a transparent manner. Expert opinions used to assess a liquidation value include statements concerning marketability of the collateral.

Risk concentrations within credit risk mitigation

Within the eligible hedging instruments used there may be material risk concentrations in terms of the real estate property liens, due to the natural correlation between such physical collateral and the general real estate market development of a particular country. The Risk and Opportunity Report in the 2022 Annual Report outlines the breakdown of the credit portfolio

into regions as well as loan and real estate types. Risk concentrations of this type are limited by pbb Group within the scope of country limit management.

Each country or country group – depending on the results of the internal rating procedure – is allocated maximum limits in certain rating corridors that restrict pbb Group's business activities. Corporate Development/Economic Analysis reviews all country ratings and country limits at least annually.

Quantitative information on credit risk mitigation

Table EU CR3 below provides information on credit exposures secured by eligible collateral based on net carrying amount (broken down into loans and advances, including cash balances at central banks and demand deposits, as well as debt securities), for which pbb Group calculates risk-weighted exposure amounts in line with the advanced IRB approach (IRBA) based on the Bank-internal rating procedure or the standardised approach (CRSA).

Pursuant to Article 453 (g), (h) and (i) of the CRR, table EU CR4 shows the impact of eligible collateral for exposures under the standardised approach (CRSA; see "Credit risk – Standardised approach"), whilst table EU CR7-A outlines the impact for exposures under the IRB approach (see "Credit risk – IRB approach") pursuant to Article 453 (g) of the CRR.

Table EU CR7 pursuant to Article 453 (j) of the CRR regarding the impact of credit derivatives used as a credit risk mitigation technique bears no relevance for pbb Group since its portfolio does not comprise credit derivatives as at the reporting date.

EU CR3: Credit risk mitigation techniques – overview

		a	b	c	d	e
		Unsecured net carrying amount [3]	**Secured net carrying amount [1] [2]**			
				thereof: secured by collateral [4]	**thereof: secured by financial guarantees**	
All figures in € million						**thereof: secured by credit derivatives**
1	Loans and advances	15,151	29,928	28,353	1,575	-
2	Debt securities	5,778	1,126	-	1,126	———
3	**Total**	**20,929**	**31,054**	**28,353**	**2,701**	**-**
4	thereof: non-performing exposures	16	606	560	46	-
5	thereof: defaulted	16	606	———	———	———

[1] EU CR3 shows the net value of exposures: gross carrying value after impairments on financial assets and amortisation, but before application of credit risk mitigation techniques. Off-balance sheet exposures are not taken into account.

[2] Exposures to which at least one credit risk mitigation mechanism is allocated pursuant to Part 3, Title II, Chapter 4 of the CRR. This relates to guarantees which may be considered as having risk-mitigating effects when calculating own funds requirements for the lending business. The value of reported guarantees is limited to the net value of secured/guaranteed exposures.

[3] Exposures to which no credit risk mitigation technique has been applied, for which collateral has not been pledged and guarantees have not been received. In EU CR3, "Loans and advances" also comprises central bank deposits and exposures vis-à-vis banks due on demand.

[4] Exposures secured by collateral (predominantly real estate/property liens).

Valuation and management of eligible collateral

Depending on the type of collateral, pbb Group applies different valuation, control and review procedures. These procedures are an essential part of the previously mentioned event-driven and annual credit exposure review and new loan approval.

pbb Group has established processing principles for the valuation of different types of collateral. The value of furnished collateral is reviewed within the scope of the loan approval process, the regular assessment of the borrowers or the collateral, or in the event of material changes. Monitoring of collateral subject to special risks is performed even more closely in line with regulatory requirements and to account for the additional risks.

The valuation of property liens is generally based on a written expert valuation and documented in writing. pbb Group monitors value fluctuations based on defined parameters.

Real estate

An independent real estate surveyor prepares a written market valuation and loan-to-value opinion for all properties serving as collateral. The loan-to-value ratio is mainly required for real estate collateral intended for the Pfandbrief cover assets pool (for funding via Pfandbrief issues). Third-party opinions are also subject to a plausibility check carried out by an internal employee (real estate analyst).

The regular monitoring and review of real estate collateral (monitoring and revaluation) is initially focused on the property's market value:

> Level 1 monitoring aims to identify properties and/or markets (or a combination of real estate types and markets) with a potential loss in value based on documentary and general information. A rough analysis of the individual properties is sufficient.

> Level 2 monitoring comprises a more detailed review of the properties identified in level 1, or a more detailed annual review of properties subject to a higher risk, by the real estate analysts.

> Revaluation, or level 3 monitoring, is performed for properties with a market value decline of over 10% or other substantial deteriorations in the underlying valuation assumptions, and for properties requiring revaluation at least every three years pursuant to Article 208 (3) (b) of the CRR. In such cases, an independent real estate surveyor determines the current market value.

> If there are any indications that the loan-to-value ratio has been impaired, level 4 monitoring comes into play: the value determination is reviewed and, if applicable, a revaluation performed.

For further information on quality aspects according to which pbb Group evaluates real estate, please refer to the "Risk hedging and risk mitigation" section within "Credit risk management (including counterparty credit risk)".

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

Pandemic-related impacts had reached, and been considered in, all markets and aspects since the third quarter of 2021. Monthly monitoring of real estate collateral, which had been introduced in April 2020, was thus returned to the ordinary real estate collateral monitoring process in December 2021.

Guarantees

pbb Group considers guarantees as collateral for risk management and risk mitigation purposes in accordance with Articles 213 to 215 of the CRR. For credit risk mitigation recognition, guarantees and guarantors must meet regulatory requirements. Guarantees are taken into account as credit risk mitigation by way of a regular PD substitution.

Financial collateral

pbb Group uses financial collateral (mainly cash collateral) in netting agreements for derivatives and securities financing transactions (securities lending/repo transactions). For further information on the use of netting within credit risk mitigation, and the netting provisions and financial collateral used by pbb Group, please refer to the following section "On-balance sheet and off-balance sheet netting" and the chapter "Counterparty credit risk".

On-balance sheet and off-balance sheet netting

Regulatory netting

Within the scope of credit risk mitigation, pbb Group applies the regulatory provisions on off-balance sheet netting for both derivative financial instruments and securities lending/repo transactions where the contractual agreements meet the requirements for risk-mitigating recognition in accordance with Article 296 of the CRR and Article 206 of the CRR. As at 31 December 2022, pbb Group concluded derivative contractual netting agreements amounting to € 0.5 billion and executed around € 6.7 billion in securities lending/repo transactions.

On-balance sheet netting

Derivatives cannot be offset for balance sheet purposes as they are subject to different terms, such as varying maturities or underlying currencies. Collateral agreements cannot be offset against the derivatives in the balance sheet either.

Derivatives settled via Eurex Clearing are an exception. The European Market Infrastructure Regulation (EMIR) imposes a clearing obligation for standardised over-the-counter (OTC) derivatives. pbb uses Eurex Clearing as a central counterparty (CCP) to clear its OTC derivatives, using on-balance sheet netting for derivatives entered into with Eurex Clearing. On-balance sheet netting is applied for each currency, and comprises the carrying amounts of the derivatives as well as the collateral calculated and provided (or received) by Eurex Clearing in this context. As at 31 December 2022, total assets decreased by € 1.7 billion for the derivatives settled via Eurex Clearing as a result of on-balance sheet netting.

Securities lending/repo transactions are not offset for accounting purposes.

Master agreements

pbb Group applies standard market master agreements (such as the German Master Agreement on Financial Derivatives Transactions (Deutscher Rahmenvertrag für Finanztermingeschäfte – DRV), the ISDA Master Agreement or the Global Master Repurchase Agreement (GMRA)), including relevant collateral agreements (such as the Collateral Annex to the DRV or the ISDA Credit Support Annex) to document its derivatives and securities lending/repo transactions. The master agreements used for both derivatives and securities lending/repo transactions contain netting agreements according to which, in the event of bankruptcy for example, one single claim is established by ending and netting all transactions concluded under a master agreement, meaning that in the event that the counterparty defaults, pbb is only entitled to, or obliged to pay, the net amount of the positive and negative market values of the individual transactions (“close-out netting”). This reduces the default risk in relation to the respective contractual partner. One prerequisite for collateral to be recognised as risk-mitigating is a review of the validity and enforceability of the contractual netting agreement in the respective jurisdiction, which pbb Group performs not only on a regular, but also on an event-driven basis in the form of legal opinions.

Collateral agreements

Collateral used for these transactions comprises financial collateral (mainly cash collateral, partly securities) based on standard market collateral agreements, such as the Collateral Annex to the DRV. Collateral is usually provided by full transfer of rights, and in the case of securities, also by way of pledging. pbb usually furnishes and receives cash collateral in euros. Where derivatives are cleared via a central counterparty, collateral is provided by pledging securities and transferring cash collateral. Bilateral repo transactions are usually secured through cash collateral, whilst repo transactions cleared via a central counterparty are secured via the exchange of securities. To be recognised for credit risk mitigation purposes pursuant to the CRR, provision of collateral must meet regulatory requirements. pbb Group verifies the validity and enforceability of collateral by means of legal opinions.

Transactions are evaluated on a daily basis. Whilst collateral agreements stipulate minimum transfer amounts, they usually do not provide for threshold amounts. For further information on this topic, please refer to the “Rating-based collateral service agreements” section within the chapter on “Counterparty credit risk”.

Credit risk – Standardised Approach

This chapter provides information pursuant to Articles 444 and 453 (g), (h) and (i) of the CRR concerning on-balance sheet and off-balance sheet credit exposures, for which pbb Group calculates risk-weighted exposure amounts in line with the standardised approach (CRSA). pbb Group makes use of this approach pursuant to Articles 111 et seqq. of the CRR in addition to the advanced IRB approach (IRBA) based on the Bank-internal rating procedure pursuant to Articles 142 et seqq. – for the following portfolios.

Application of permanent partial use within the meaning of Article 150 of the CRR

pbb Group uses the standardised approach mainly for the following sub-portfolios:

- Exposures to central governments or central banks, regional governments and public-sector entities pursuant to Article 150 (1) (a) and (d) of the CRR
- Exposures to institutions as referred to in Article 150 (1) (b) of the CRR (including Eurex Clearing)
- Exposures to companies generating the majority of their revenues outside the real estate sector
- Exposures to private individuals
- Credit risk exposures regarding a discontinued business unit within the meaning of Article 150 (1) (c) of the CRR in conjunction with section 14 of the German Solvency Regulation (Solvenzverordnung – SolvV) (e.g. low-volume retail loans; the client's creditworthiness is assessed via retail scoring)
- Other credit risk exposures for which no rating procedure pursuant to the IRB approach as approved by the banking supervisor is applied.

Use of rating agencies and export credit agencies

Nominated rating agencies

pbb Group exclusively uses external ratings from Standard & Poor's, Moody's and Fitch to assess creditworthiness within the scope of the standardised approach. Nominations are unchanged from the previous year. Export credit agencies have not been nominated for credit assessments.

Allocated exposure classes

The above-mentioned rating agencies have been nominated for all CRSA exposure classes.

Transfer of credit assessments

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

Mapping external credit assessments

pbb Group uses the allocation method prescribed by the European Banking Authority (EBA) pursuant to the CRR for allocation of the external ratings from rating agencies to the credit quality steps of the standardised approach.

Effects of credit risk mitigation

The standardised approach takes guarantees into account as credit risk mitigation by way of a regular PD substitution, meaning that the lower risk weight of the guarantor is allocated to the hedged part of a receivable. This in turn means that the secured part of an IRBA exposure (e.g. of a company) is reported with the lower risk weight of the guarantor (e.g. of a public-law corporation) in the standardised approach, or that guaranteed CRSA exposures are allocated to the lower risk weight and exposure class of the protection seller. pbb's guarantors are mainly financial institutions and public-sector clients. pbb Group treats credit exposures to public-sector clients and financial institutions using the standardised approach.

Quantitative information on credit exposures under the standardised approach

The following tables EU CR4 and EU CR5 pursuant to Articles 444 (e) and 453 (g), (h) and (i) of the CRR provide information on exposure values (before and after credit risk mitigation) and risk-weighted exposure amounts (RWA), risk weights and RWA density, as well as on the implications of credit conversion factors (CCF) applied, and of eligible collateral for on-balance sheet and off-balance sheet CRSA credit exposures, broken down by exposure classes.

EU CR4: Standardised approach – Credit risk exposure and credit risk mitigation effects

	Exposure classes	a	b	c	d	e	f
		Exposures before CCF and before CRM [1]		**Exposures post CCF and post CRM [2]**		**RWAs and RWAs density**	
All figures in € million, unless otherwise stated		**On-balance-sheet exposures**	**Off-balance-sheet exposures**	**On-balance-sheet exposures**	**Off-balance-sheet amount**	**RWAs [3]**	**RWAs density [4] (%)**
1	Central governments or central banks	8,339	-	9,880	-	51	0.52
2	Regional government or local authorities	4,343	125	5,111	62	418	8.07
3	Public sector entities	1,761	-	1,626	-	115	7.07
4	Multilateral development banks	547	-	547	-	-	-
5	International organisations	229	-	229	-	-	-
6	Institutions	918	-	31	-	11	36.57
7	Corporates	1,706	17	526	10	528	98.56
8	Retail	-	-	-	-	-	75.00
9	Secured by mortgages on immovable property	631	55	631	27	228	34.55
10	Exposures in default	49	-	1	-	1	117.12
11	Exposures associated with particularly high risk	111	76	111	39	225	150.00
12	Covered bonds	321	-	321	-	32	10.00
13	Institutions and corporates with a short-term credit assessment	-	-	-	-	-	-
14	Collective investment undertakings	2	-	2	-	31	1,250.00
15	Equity	-	-	-	-	-	-
16	Other items [5]	105	-	105	-	261	250.00
17	**Total**	**19,063**	**273**	**19,121**	**138**	**1,902**	**9.87**

[1] Net value of CRSA exposures: gross carrying amounts after impairments/provisions and amortisation, but before application of credit risk mitigation techniques and credit conversion factors (CCF).
[2] CRSA exposure values (exposure at default, EaD) after impairments/provisions and amortisation, and after application of credit risk mitigation techniques and credit conversion factors (CCF).
[3] Risk-weighted CRSA exposure amounts (risk-weighted assets, RWA).
[4] RWA density (%): calculated by dividing the RWA per CRSA exposure class (column e) by the respective EaD (columns c + d).
[5] Deferred tax assets dependant on future profitability (not) resulting from temporary differences.

EU CR5: Standardised approach

		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q
	Exposure classes	**Risk weight**															**Total**	**Of which unrated** [2]
All figures in € million		**0%**	**2%**	**4%**	**10%**	**20%**	**35%**	**50%**	**70%**	**75%**	**100%**	**150%**	**250%**	**370%**	**1250%**	**Others**		
1	Central governments or central banks	9,630	-	-	-	248	-	-	-	-	2	-	-	-	-	-	9,880	1,312
2	Regional government or local authorities	3,085	-	-	-	2,088	-	-	-	-	-	-	-	-	-	-	5,173	3,935
3	Public sector entities	1,186	-	-	-	394	-	19	-	-	27	-	-	-	-	-	1,626	1,482
4	Multilateral development banks	547	-	-	-	-	-	-	-	-	-	-	-	-	-	-	547	-
5	International organisations	229	-	-	-	-	-	-	-	-	-	-	-	-	-	-	229	-
6	Institutions	-	-	-	-	14	-	17	-	-	-	-	-	-	-	-	31	-
7	Corporates	-	-	-	-	1	-	1	-	-	532	3	-	-	-	-	536	506
8	Retail exposures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	Exposures secured by mortgages on immovable property	-	-	-	-	-	598	61	-	-	-	-	-	-	-	-	659	659
10	Exposures in default	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	1
11	Exposures associated with particularly high risk	-	-	-	-	-	-	-	-	-	-	150	-	-	-	-	150	-
12	Covered bonds	-	-	-	321	-	-	-	-	-	-	-	-	-	-	-	321	-
13	Exposures to institutions and corporates with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	Units or shares in collective investment undertakings	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	2	2
15	Equity exposures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	Other items [3]	-	-	-	-	-	-	-	-	-	-	-	105	-	-	-	105	-
17	**Total**	**14,677**	**0**	**0**	**321**	**2,745**	**598**	**97**	**0**	**0**	**560**	**153**	**105**	**0**	**2**	**0**	**19,260**	**7,898**

[1] EU CR5 provides information on the CRSA exposure values (EaD) after impairments/provisions and amortisation, and after application of credit risk mitigation techniques and credit conversion factors (CCF).
[2] A rating by a renowned rating agency (external credit assessment institutions, ECAI) is not available.
[3] Deferred tax assets dependant on future profitability (not) resulting from temporary differences.

Credit risk – IRB approach

This chapter provides information pursuant to Articles 452 and 453 (g) and (j) as well as 438 (h) of the CRR concerning on-balance sheet and off-balance sheet credit exposures, for which pbb Group calculates risk-weighted exposure amounts in line with the advanced IRB approach based on the Bank-internal rating procedure pursuant to Articles 142 et seqq. of the CRR.

Approved IRB approaches

pbb Group has obtained permission to use the rating systems listed in the following EU CRE table for the advanced IRB approach.

Within the scope of the EBA's current "Regulatory Review of the IRB Approach" programme to review the IRBA models, pbb Group is aiming to extend the IRBA coverage ratio to the sub-portfolios "Property developers who prepare balance sheets" and "Non-trading partnerships" (Gesellschaften bürgerlichen Rechts – GbR) in the "Corporates" exposure class. Further extension of the IRBA coverage ratio to new exposure classes – through a new implementation plan – is currently not scheduled.

Internal rating systems must comply with the minimum requirements for the use of the IRB approach as set out in Articles 143 and 144 of the CRR, fulfil methodical as well as procedural and organisational requirements, and prove their viability for the risk classification of existing and new business. Rating systems within the meaning of Article 142 of the CRR describe "all of the methods, processes, controls, data collection and IT systems that support the assessment of credit risk, the assignment of exposures to rating grades or pools, and the quantification of default and loss estimates that have been developed for a certain type of exposure."

All pbb Group's PD, LGD and CCF rating systems broadly follow a through-the-cycle philosophy, whereby the structure of this philosophy can change between the various models, for example due to the risk factors taken into account in the model. Current default rates, loss given default and CCF ratios may thus differ from the through-the-cycle forecasts – depending on the phase of the economic cycle.

Types of exposure

pbb Group ensures that the debtor of an IRBA default risk exposure is allocated to the PD LGD and CCF rating systems by making use of the rating systems' defined scopes of application. Compliance with the scope is either checked during the rating process or technically ensured via the construction of the system itself.

The "Central governments and central banks", "Institutions" and "Retail exposures" IRBA exposure classes do not apply to pbb Group. As far as its participating interests are concerned, pbb Group applies the simple IRBA risk weight for equity exposures in accordance with Article 155 (2) of the CRR.

The "Corporates" exposure class (including "specialised lending") uses rating systems with statistical models at their core, supplemented by expert model components in the risk classification. After the initial rating, a follow-up rating is performed at least annually for all rating systems. Intra-year re-ratings are carried out in the event of material information becoming available that affects creditworthiness. All relevant input data and the results of the ratings performed are stored for the purpose of data processing to ensure a complete rating history for every debtor and every guarantor as well as every transaction subject to default risks. Debtors are allocated to PD classes 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 classes depending on the segment.

pbb Group defines defaults as per Article 178 of the CRR.

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 rating procedures' scope. The specific scopes are defined in the relevant workflow instructions.
[2] Methodology on which the rating procedure is based.

PD rating systems

The PD rating systems for commercial real estate financing are based on logistical regression models which have been developed and calibrated using historical internal debtor data (default information and qualitative as well as quantitative risk factors) and expert assessments. Calibration requires data for a period of at least seven years. The risk factors are weighted and aggregated to form a score, which yields an individual probability of default. This in turn is subsequently translated into a PD class by way of a standardised PD master scale. The PD rating systems for commercial real estate financing comprise traditional indicators such as the ratio of loan amount to a property's market value or the debt service cover ratio, and usually also information on the debtor's property or property portfolio (e.g. location quality, vacancy rate, regional information) and information concerning the debtors themselves (e.g. commercial/technical qualifications, information about the client/bank relationship).

pbb Group's PD rating systems consider quantitative and qualitative risk factors in addition to differently weighted warning signals. These warning signals generally identify rare events (for instance, a negative feature affecting creditworthiness) which, if they occur, have a significant influence on the debtor's creditworthiness. In addition, pbb Group's PD rating systems ensure that the PD of a debtor cannot be better than the PD of the debtor's country of domicile. This "sovereign ceiling" takes account of government-related additional risks, e.g. transfer risks, when preparing client ratings.

pbb Group applies a standardised PD master scale comprised of 27 PD classes for debtors not yet subject to default which is identical for all rating systems and across all exposure classes, thus allowing for a comparison of rating classifications across all default risk exposures. Each of the 27 PD classes is allocated unequivocal probabilities of default as PD estimates, as well as upper and lower limits for the probabilities of default.

LGD rating systems

Loss given default estimates in per cent (referring to the Exposure at Default (EaD)) are a direct result of pbb Group's LGD rating systems.

The LGD rating system for international commercial real estate financing is based on a stochastic simulation method which, in addition to future macroeconomic developments, also simulates future real estate market-specific developments and calculates the impact on the cash flows and the property value of the specific financing arrangement. The model is calibrated using historical default events since 2008.

The LGD rating system for German real estate financing is based on a structural approach – with the market value of the real estate collateral at the core of the LGD estimate. Individual model parameters such as recovery rates and settlement periods are calculated for differentiated segments (property types, among other things) based on historical pbb Group data and the data pooling initiative of the Association of German Pfandbrief Banks (VdP) (usually based on data from 2008 onwards, at least).

Downturn analyses and tests of significance ensure – for the individual LGD rating systems – that the models are suitable for forecasting downturn LGDs.

CCF rating system

pbb Group uses a model to forecast the credit conversion factor (CCF) for mortgage loans, based on the observable drawing pattern of historical internal defaults since 2008 in a period of 12 months prior to default. A CCF of 100% is applied to all other products (e.g. guarantee credits).

Additional uses of internal estimates

The internal estimates of the probability of default (PD) and loss given default (LGD) are important parameters for risk management and lending decisions. Within the scope of the lending decision process, and taking these risk parameters into account, risk and equity costs are determined which then form the basis for risk-adjusted pricing and the lending decision.

Expected loss (EL) classes are derived from the PD and LGD risk parameters; approval powers within pbb Group for loan approval and loan processing are based on said EL classes.

The results of the internal rating systems are incorporated into the economic risk-bearing capacity calculation (ICAAP) and considered when determining on-balance sheet risk provisioning.

Functions and control mechanisms for IRBA rating systems

The Group Risk Committee (GRC) is responsible for developing and validating rating systems at pbb Group. The GRC is a Management Board sub-committee with the authority to decide on matters related to risk methodology and risk parameters, as well as risk monitoring and relevant guidelines.

The GRC commissions the creation of new models (or development of existing ones), validation concepts, and the implementation of validations in Risk Management & Control (RMC). RMC is independent from departments responsible for initi-

ating and executing transactions. The credit risk monitoring unit within this division is responsible for developing, implementing, maintaining, monitoring, and developing all rating systems throughout the Group. It presents its results to the GRC, which in turn must approve them.

All PD and LGD rating systems are validated once a year; this review comprises statistical and qualitative analyses as well as user feedback to check the calibration, precision and stability, the data quality and model design.

Regarding the LGD rating system for German real estate financing, pbb Group also participates in the pool validation at the level of the Association of German Pfandbrief Banks (VdP).

pbb Group has various technical control mechanisms at its disposal, such as dual-control approval, to check for completeness and to perform plausibility checks for the data input.

The Internal Audit division, as a process-independent unit, reviews the adequacy of the internal rating systems on a regular basis, including compliance with the minimum requirements for using rating systems and for procedural changes implemented.

IRBA rating systems - reporting

All validation reports are presented to, and approved by, the Group Risk Committee (GRC).

Quantitative information on credit exposures in the IRB approach

The following tables EU CR6 and EU CR6a pursuant to Article 452 (b) and (g) of the CRR provide information concerning on-balance sheet and off-balance sheet credit exposures for the portfolios subject to the IRB approach and rated using a rating procedure approved by the supervisory authorities. The tables further provide information on key IRBA parameters used for the calculation of own funds requirements.

Table EU CR6 only comprises information on pbb Group’s significant exposure classes. The “Central governments and central banks”, “Institutions” and “Retail exposures” IRBA exposure classes do not apply to pbb Group. As far as pbb Group’s participating interests are concerned, it applies the simple IRBA risk weight for equity exposures in accordance with Article 155 (2) of the CRR.

Table EU CR7-A pursuant to Article 453 (g) of the CRR outlines the impact of eligible collateral under the IRB approach.

Table EU CR7 pursuant to Article 453 (j) of the CRR regarding the impact of credit derivatives used as a credit risk mitigation technique on risk-weighted exposure amounts (RWA) bears no relevance for pbb Group since its portfolio continues to contain no credit derivatives.

Table EU CR8 in accordance with Article 438 (h) of the CRR outlines the changes in RWA in the fourth quarter of 2022 and high-lights the main reasons for these changes.

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

	a	b	c	d	e	f	g	h	i	j	k	l	m
A-IRB	PD range [1]	On-balance sheet exposures [2]	Off-balance-sheet exposures pre-CCF [3]	Exposure weighted average CCF [4]	Exposure post CCF and post CRM [5]	Exposure weighted average PD (%) [6]	Number of obligors	Exposure weighted average LGD (%) [7]	Exposure weighted average maturity (years)	Risk weighted exposure amount after supporting factors [8]	Density of risk weighted exposure amount (%) [9]	Expected loss amount	Value adjustments and provisions
All figures in € million, unless otherwise stated													
Corporates - SMEs	0.00 to <0.15	30	-	-	29	0.10	20	5.71	4	1	3.69	-	-
	0.00 to <0.10	1	-	-	1	0.05	2	4.10	1	-	0.97	-	-
	0.10 to <0.15	28	-	-	28	0.10	18	5.77	4	1	3.78	-	-
	0.15 to <0.25	66	-	-	66	0.20	36	2.71	4	2	2.45	-	-
	0.25 to <0.50	1,101	51	0.51	1,125	0.42	77	8.19	4	132	11.69	-	-
	0.50 to <0.75	-	-	-	-	-	-	-	-	-	-	-	-
	0.75 to <2.50	284	52	0.57	313	1.01	24	2.14	4	11	3.39	-	1
	0.75 to <1.75	284	52	0.57	313	1.01	24	2.14	4	11	3.39	-	1
	1.75 to <2.5	-	-	-	-	-	-	-	-	-	-	-	-
	2.50 to <10.00	1	-	-	1	3.35	4	3.87	4	-	8.45	-	-
	2.5 to <5	1	-	-	1	2.78	3	3.88	4	-	8.49	-	-
	5 to <10	-	-	-	-	-	-	-	-	-	-	-	-
	10.00 to <100.00	-	-	-	-	-	-	-	-	-	-	-	-
	10 to <20	-	-	-	-	-	-	-	-	-	-	-	-
	20 to <30	-	-	-	-	-	-	-	-	-	-	-	-
	30.00 to <100.00	-	-	-	-	-	-	-	-	-	-	-	-
	100.00 (Default)	7	-	-	7	100.00	3	24.47	5	4	62.50	1	1
Subtotal		**1,489**	**102**	**0.54**	**1,541**	**0.96**	**164**	**6.75**	**4**	**149**	**9.68**	**2**	**1**

	a	b	c	d	e	f	g	h	i	j	k	l	m
A-IRB	**PD range [1]**	**On-balance sheet exposures [2]**	**Off-balance-sheet exposures pre-CCF [3]**	**Exposure weighted average CCF [4]**	**Exposure post CCF and post CRM [5]**	**Exposure weighted average PD (%) [6]**	**Number of obligors**	**Exposure weighted average LGD (%) [7]**	**Exposure weighted average maturity (years)**	**Risk weighted exposure amount after supporting factors [8]**	**Density of risk weighted exposure amount (%) [9]**	**Expected loss amount**	**Value adjustments and provisions**
All figures in € million, unless otherwise stated													
Corporates - specialised lending [10]	0.00 to <0.15	188	-	-	188	0.10	3	5.99	4	6	3.14	-	-
	0.00 to <0.10	-	-	-	-	-	-	-	-	-	-	-	-
	0.10 to <0.15	188	-	-	188	0.10	3	5.99	4	6	3.14	-	-
	0.15 to <0.25	822	-	-	822	0.20	21	20.55	3	164	19.98	-	1
	0.25 to <0.50	6,420	206	0.51	6,513	0.41	127	21.46	3	1,746	26.81	6	24
	0.50 to <0.75	-	-	-	-	-	-	-	-	-	-	-	-
	0.75 to <2.50	8,922	712	0.54	9,306	1.41	157	26.48	3	4,943	53.12	35	52
	0.75 to <1.75	6,924	526	0.52	7,200	1.23	131	27.20	3	3,806	52.86	25	36
	1.75 to <2.5	1,999	186	0.58	2,106	2.00	26	24.03	3	1,138	54.02	10	16
	2.50 to <10.00	7,417	1,667	0.70	8,582	4.26	144	24.43	2	5,346	62.30	84	104
	2.5 to <5	4,827	711	0.59	5,248	3.23	89	27.10	3	3,457	65.86	46	61
	5 to <10	2,590	955	0.78	3,334	5.87	55	20.22	2	1,890	56.69	39	43
	10.00 to <100.00	421	11	0.50	427	13.52	6	33.44	1	545	127.66	19	5
	10 to <20	378	2	0.50	379	11.83	5	33.25	1	470	123.99	15	2
	20 to <30	43	8	0.50	47	27.00	1	35.00	1	74	156.95	4	3
	30.00 to <100.00	-	-	-	-	-	-	-	-	-	-	-	-
	100.00 (Default)	681	4	0.50	683	100.00	13	32.49	1	486	71.10	188	207
Subtotal		**24,871**	**2,600**	**0.64**	**26,521**	**4.77**	**471**	**24.52**	**3**	**13,227**	**49.91**	**332**	**393**

A-IRB	a	b	c	d	e	f	g	h	i	j	k	l	m
	PD range [1]	**On-balance sheet exposures [2]**	**Off-balance-sheet exposures pre-CCF [3]**	**Exposure weighted average CCF [4]**	**Exposure post CCF and post CRM [5]**	**Exposure weighted average PD (%) [6]**	**Number of obligors**	**Exposure weighted average LGD (%) [7]**	**Exposure weighted average maturity (years)**	**Risk weighted exposure amount after supporting factors [8]**	**Density of risk weighted exposure amount (%) [9]**	**Expected loss amount**	**Value adjustments and provisions**
All figures in € million, unless otherwise stated													
Corporates - others	0.00 to <0.15	1,017	-	-	976	0.08	24	8.50	4	51	5.26	-	-
	0.00 to <0.10	388	-	-	361	0.05	9	0.51	4	1	0.33	-	-
	0.10 to <0.15	629	-	-	615	0.10	15	13.20	4	50	8.16	-	-
	0.15 to <0.25	442	37	0.50	457	0.20	13	3.16	5	22	4.91	-	-
	0.25 to <0.50	475	-	-	475	0.33	21	23.12	4	187	39.49	-	-
	0.50 to <0.75	-	-	-	-	-	-	-	-	-	-	-	-
	0.75 to <2.50	-	-	-	-	-	-	-	-	-	-	-	-
	0.75 to <1.75	-	-	-	-	-	-	-	-	-	-	-	-
	1.75 to <2.5	-	-	-	-	-	-	-	-	-	-	-	-
	2.50 to <10.00	-	-	-	-	-	-	-	-	-	-	-	-
	2.5 to <5	-	-	-	-	-	-	-	-	-	-	-	-
	5 to <10	-	-	-	-	-	-	-	-	-	-	-	-
	10.00 to <100.00	-	-	-	-	-	-	-	-	-	-	-	-
	10 to <20	-	-	-	-	-	-	-	-	-	-	-	-
	20 to <30	-	-	-	-	-	-	-	-	-	-	-	-
	30.00 to <100.00	-	-	-	-	-	-	-	-	-	-	-	-
	100.00 (Default)	1	-	-	1	100.00	2	6.11	1	-	62.50	-	-
Subtotal		**1,934**	**37**	**0.50**	**1,908**	**0.20**	**62**	**10.86**	**4**	**262**	**13.71**	**0**	**0**
Total (all exposures classes)		**28,294**	**2,739**	**0.63**	**29,970**	**4.29**	**697**	**22.74**	**3**	**13,638**	**45.54**	**335**	**395**

[1] PD ranges for the estimated probability of default (PD), excluding substitution effects due to credit risk mitigation techniques.
[2] Gross carrying amount before impairments (but after amortisation) and before application of credit risk mitigation techniques.
[3] Nominal value before provisions and application of credit risk mitigation techniques and before credit conversion factors (CCF).
[4] Exposure-weighted conversion factor for off-balance sheet exposures, weighted using the off-balance sheet exposure in column (c).
[5] IRBA exposure value (exposure at default, EaD) after application of credit risk mitigation techniques and credit conversion factors (CCF), but before impairments and provisions.
[6] Exposure-weighted average probability of default (PD), weighted using the exposure value in column (e).
[7] Exposure-weighted average loss given default (LGD), weighted using the exposure value in column (e).
[8] Risk-weighted IRBA exposure amounts (risk-weighted assets, RWA) after SME and infrastructure supporting factors pursuant to Articles 501 and 501a of the CRR.
The IRBA exposure classes “Equity exposures” and “Other non-credit obligation assets”, which are not based on separate LGD and/or CCF estimates, are not disclosed.
[9] RWA density (%): calculated by dividing the RWA (column j) by the respective EaD (column e).
[10] Excluding specialised lending within the meaning of Article 153 (4) of the CRR.

EU CR6-A: Scope of the use of IRB and SA approaches

All figures in € million, unless otherwise stated		a **Exposure value as defined in Article 166 CRR for exposures subject to IRB approach** [1]	b **Total exposure value for exposures subject to the Standardised approach and to the IRB approach** [2]	c **Percentage of total exposure value subject to the permanent partial use of the SA (%)** [3]	d **Percentage of total exposure value subject to IRB Approach (%)** [4]	e **Percentage of total exposurevalue subject to a roll-out plan (%)** [5]
1	Central governments or central banks	-	15,511	100	-	-
1.1	thereof: Regional governments or local authorities	———	4,405	100	-	-
1.2	thereof: Public sector entities	———	1,990	100	-	-
2	Institutions	-	1,240	100	-	-
3	Corporates	30,028	32,684	8.13	-	91.87
3.1	thereof: Corporates - Specialised lending, excluding slotting approach	———	26,681	0.56	-	99.44
3.2	thereof: Corporates - Specialised lending under slotting approach	———	-	-	-	-
4	Retail	-	1	100	-	-
4.1	thereof: Retail – Secured by real estate SMEs	———	-	-	-	-
4.2	thereof: Retail – Secured by real estate non-SMEs	———	1	100	-	-
4.3	thereof: Retail – Qualifying revolving	———	-	-	-	-
4.4	thereof: Retail – Other SMEs	———	-	-	-	-
4.5	thereof: Retail – Other non-SMEs	———	-	-	-	-
5	Equity	-	-	-	-	-
6	Other non-credit obligation assets	55	160	65.51	-	34.49
7	**Total**	**30,083**	**49,596**	**39.34**	**-**	**60.66**

[1] IRBA exposure values (exposure at default, EaD) for exposures subject to the IRB approach.
[2] IRBA and CRSA exposure values for determination of the total exposure measure pursuant to Article 429 (4) of the CRR to calculate the leverage ratio.
[3] Share of exposures subject to the standardised approach (partial use in accordance with Article 150 of the CRR) in the aggregate exposure value as per column (b).
[4] Share of exposures subject to the IRB approach in the aggregate exposure value as per column (b).
[5] Share of exposures, for which the IRB approach is to be sequentially implemented in line with Article 148 of the CRR, in the aggregate exposure value as per column (b).

EU CR7-A: IRB approach – Disclosure of the extent of the use of credit risk mitigation techniques

		a	b	c	d	e	f	g	h	i	j	k	l	m	n
		Total exposures [1]	Credit risk Mitigation techniques [2]											Credit risk Mitigation methods in the calculation of RWEAs	
			Funded credit Protection (FCP)									Unfunded credit Protection (UFCP)			
			Part of exposures covered by Financial Collaterals (%)	Part of exposures covered by Other eligible collaterals (%)				Part of exposures covered by Other funded credit protection (%)				Part of exposures covered by Guarantees (%)	Part of exposures covered by Credit Derivatives (%)	RWA without substitution effects (reduction effects only) [3]	RWA with substitution effects (both reduction and sustitution effects) [4]
	A-IRB				Part of exposures covered by Immovable property Collaterals (%)	Part of exposures covered by Receivables (%)	Part of exposures covered by Other physical collateral (%)		Part of exposures covered by Cash on deposit (%)	Part of exposures covered by Life insurance policies (%)	Part of exposures covered by Instruments held by a third party (%)				
All figures in € million, unless otherwise stated															
1	Central governments and central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	Institutions	-	-	-	-	-	-	-	-	-	-	-	-		
3	Corporates	29,970	-	98.16	98.16	-	-	-	-	-	-	-	-	13,638	13,638
3.1	thereof: Corporates – SMEs	1,541	-	99.88	99.88	-	-	-	-	-	-	-	-	149	149
3.2	thereof: Corporates – Specialised lending	26,521	-	98.31	98.31	-	-	-	-	-	-	-	-	13,227	13,227
3.3	thereof: Corporates – Other	1,908	-	94.78	94.78	-	-	-	-	-	-	-	-	262	262
4	Retail	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	**Total**	**29,970**	**0**	**98.16**	**98.16**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13,638**	**13,638**

[1] Exposure value (exposure at default, EaD) after credit conversion factors (CCF), but excluding credit risk mitigation techniques/substitution effects due to a guarantee.
[2] The collateral disclosed in columns (b) through (l) provides information on the share of the exposures secured by said collateral in the total exposures as per column (a). The collateral value is limited to the value of the secured exposure.
[3] Risk-weighted IRBA exposure amounts (risk-weighted assets, RWA) after credit risk mitigation techniques. The classification to an IRBA exposure class was carried out in line with the relevant exposure classes of the original debtor.
[4] Risk-weighted IRBA exposure amounts (risk-weighted assets, RWA) after credit risk mitigation techniques. The classification to an IRBA exposure class was carried out in line with the relevant exposure classes of the protection seller.

Credit exposures

The relevant regulatory exposure figure for the purposes of calculating the risk-weighted exposure amounts (risk-weighted assets, RWA) and the own funds requirements is the exposure at default (EaD). The CRR-compliant EaD for IRBA credit exposures represents the outstanding exposure in the event of default and corresponds to the IFRS carrying amount (including accrued interest) for most products.

In cases involving an existing committed available line, this – multiplied by the product-specific credit conversion factor (CCF) – is included as a further component of EaD. The CCF expresses how much of an available line is expected to be drawn down within one year before a possible default. The CCF is currently 50% to 100% for mortgage loans and 100% for all other products (for example, guarantees and public-sector financing).

The EaD is calculated for all receivables, irrespective of whether a default event has, in fact, already occurred or not.

The EaD for on-balance sheet and off-balance sheet IRBA credit exposures amounts to € 29,970 million (€ -232 million as against 30 September 2022 and € +717 million as against 30 June 2022), and the RWAs amount to € 13,638 million (€ -207 million as against 30 September 2022 and € +399 million as against 30 June 2022). This excludes the exposure classes “Equity exposures” and “Other non-credit obligation assets”, as these are not based on separate LGD and/or CCF estimates.

The main differences between the EaD referred to above (the exposure value pursuant to Article 166 of the CRR) and the exposure value pursuant to Article 429 (4) of the CRR (for the calculation of the total exposure measure of the leverage ratio) presented in EU CR6-A, column (b) are:

- In the IRB approach, impairments on financial assets (stages 1 to 3) and provisions in off-balance sheet lending business are not deducted from the carrying amount reported in the financial statements, but rather are included in the comparison of impairments as against the expected loss (EL).

- The IRBA approach uses internal credit conversion factors (CCF), while the CCFs under the standardised approach (CRSA) are used to calculate the leverage ratio.

The total IRBA risk-weighted exposure amounts (RWA), including the exposure classes “Equity exposures” and “Other non-credit obligation assets”, amounted to € 13,693 million (30 September 2022: € 13,896 million; 30 June 2022: € 13,239 million). The main reasons behind the reduction in RWA in the fourth quarter of 2022 (€ -203 million) are shown in table EU CR8.

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

		a
All figures in € million		Risk weighted exposure amount [1]
1	**Risk weighted exposure amount as at 31.03.2022**	**13,896**
2	Asset size (+/-)	609
3	Asset quality (+/-)	-162
4	Model updates (+/-)	-
5	Methodology and policy (+/-)	-
6	Acquisitions and disposals (+/-)	-
7	Foreign exchange movements (+/-)	-324
8	Other (+/-)	-328
9	**Risk weighted exposure amount as at 30.06.2022**	**13,693**

[1] Risk-weighted IRBA exposure amounts (risk-weighted assets, RWA) after application of the SME supporting factor pursuant to Article 501 of the CRR, including the IRBA exposure classes “Equity exposures” and “Other non-credit obligation assets”.
In contrast, counterparty credit risk exposures (derivatives and securities financing transactions) are not included in EU CR8.

The RWA increase was due to new business generated in the commercial Real Estate Finance segment during the fourth quarter of 2022 which significantly exceeded repayments/maturities (line 2). This was offset by various effects such as individual PD/LGD rating improvements (line 3), changes in the allocation of exposures to the exposure classes (corporates vs. small and medium-sized enterprises, SMEs), and syndications (line 8). Furthermore, currency effects, above all regarding the US dollar (USD) and the British pound sterling (GBP), led to a decrease in RWA (line 7).

RWA density

The RWA density for the IRBA credit exposures averages 45.5% (30 June 2022: 45.3%); the “Central governments and central banks”, “Institutions” and “Retail exposures” IRBA exposure classes do not apply to pbb Group. Risk weights are a key component used to calculate the risk-weighted exposure amounts to be backed by own funds as part of a risk-oriented approach; the RWAs are calculated by multiplying the risk weight and the IRBA exposure amount (EaD).

PD

The probability of default (PD) indicates the probability that a borrower/counterparty will not be able to service its loan in accordance with the contractual terms in the course of a given year (irrespective of the amount of the exposure and the collateral furnished). The PD for the IRBA credit exposures averages 4.3% (30 June 2022: 3.7%).

LGD

The loss given default (LGD) indicates the expected rate of loss that pbb Group will incur in the event that a customer defaults. The LGD averages 22.7% for the credit exposures based on the IRB approach (30 June 2022: 22.8%).

CCF

The undrawn IRBA loan commitments amount to a total of € 2,739 million (30 June 2022: € 2,824 million). The average CCF, which expresses how much of an available line is expected to be drawn down within one year before a possible default, comes to 63% (30 June 2022: 65%).

All pbb Group’s PD, LGD and CCF rating systems broadly follow a through-the-cycle philosophy, whereby the structure of this philosophy can change between the various models, for example due to the risk factors taken into account in the model. Current default rates, loss given default and CCF ratios may thus differ from the through-the-cycle forecasts – depending on the phase of the economic cycle.

Back-testing of IRBA parameters

Table EU CR9, in accordance with Article 452 (h) of the CRR, shows a comparison of the PD estimates and the actual default rate broken down by IRBA exposure class. All IRBA models used within pbb Group were taken as a basis.

Disclosure of table EU CR9.1 “IRB approach – Back-testing of PD per exposure class (only for PD estimates according to Article 180 (1) (f) of the CRR)” is not relevant for pbb Group. As at the disclosure date, pbb Group does not use what are known as “shadow ratings”, which replicate the credit rating awarded by external rating agencies or comparable institutions, for its internal PD estimates concerning IRBA exposures.

EU CR 9: Back-testing of PD per exposure class (fixed PD scale)

All figures in € million, unless otherwise stated

a	b	c	d	e	f	g	h
A-IRB	**PD range [1]**	**Number of obligors at the end of previous year [2]**	**thereof: number of obligors which defaulted in the year 3)**	**Observed average default rate (%) [4]**	**Exposures weighted average PD (%) [5]**	**Average PD (%) [6]**	**Average historical annual default rate (%) [7]**
Corporates - SMEs	0,00 to < 0,15	21	-	-	0.10	0.09	-
	0,00 to < 0,10	3	-	-	0.05	0.05	-
	0,10 to < 0,15	18	-	-	0.10	0.10	-
	0,15 to < 0,25	43	-	-	0.20	0.20	-
	0,25 to < 0,50	78	-	-	0.42	0.39	0.24
	0,50 to < 0,75		-	-	-	-	-
	0,75 to < 2,50	27	-	-	1.01	1.09	-
	0,75 to < 1,75	27	-	-	1.01	1.09	-
	1,75 to < 2,5		-	-	2.00	-	-
	2,50 to < 10,00	3	-	-	3.35	2.67	-
	2,5 to < 5	3	-	-	2.78	2.67	-
	5 to < 10		-	-	5.00	-	-
	10,00 to < 100,00	1	-	-	-	17.50	-
	10 to < 20	1	-	-	-	17.50	-
	20 to < 30		-	-	-	-	-
	30,00 to < 100,00		-	-	-	-	-
	100,00 (Default)	3	-	-	100	100	-

All figures in € million, unless otherwise stated

a	b	c	d	e	f	g	h
A-IRB	**PD range [1]**	**Number of obligors at the end of previous year [2]**	**thereof: number of obligors which defaulted in the year 3)**	**Observed average default rate (%) [4]**	**Exposures weighted average PD (%) [5]**	**Average PD (%) [6]**	**Average historical annual default rate (%) [7]**
Corporates - specialised lending	0,00 to < 0,15	6	-	-	0.10	0.09	-
	0,00 to < 0,10	1	-	-	-	0.05	-
	0,10 to < 0,15	5	-	-	0.10	0.10	-
	0,15 to < 0,25	22	-	-	0.20	0.20	0.49
	0,25 to < 0,50	122	-	-	0.41	0.39	0.57
	0,50 to < 0,75	-	-	-	-	-	-
	0,75 to < 2,50	167	1	0.6	1.41	1.29	1.04
	0,75 to < 1,75	147	1	0.68	1.23	1.20	0.85
	1,75 to < 2,5	20	-	-	2.00	2.00	1.89
	2,50 to < 10,00	120	4	3.33	4.26	4.04	2.14
	2,5 to < 5	78	3	3.85	3.23	3.08	2.24
	5 to < 10	42	1	2.38	5.87	5.81	1.82
	10,00 to < 100,00	7	-	-	13.52	12.79	-
	10 to < 20	6	-	-	11.83	10.42	-
	20 to < 30	1	-	-	27.00	27.00	-
	30,00 to < 100,00	-	-	-	-	-	-
	100,00 (Default)	9	-	-	100	100	-

All figures in € million, unless otherwise stated

a	b	c	d	e	f	g	h
A-IRB	**PD range** [1]	**Number of obligors at the end of previous year** [2]	**thereof: number of obligors which defaulted in the year** [3]	**Observed average default rate (%)** [4]	**Exposures weighted average PD (%)** [5]	**Average PD (%)** [6]	**Average historical annual default rate (%)** [7]
Corporates -others	0,00 to < 0,15	19	-	-	0.08	0.09	-
	0,00 to < 0,10	5	-	-	0.05	0.05	-
	0,10 to < 0,15	14	-	-	0.10	0.10	-
	0,15 to < 0,25	16	-	-	0.20	0.20	-
	0,25 to < 0,50	21	-	-	0.33	0.37	-
	0,50 to < 0,75	-	-	-	-	-	-
	0,75 to < 2,50	5	-	-	1.00	1.10	-
	0,75 to < 1,75	5	-	-	1.00	1.10	-
	1,75 to < 2,5	-	-	-	-	-	-
	2,50 to < 10,00	1	-	-	-	5.00	-
	2,5 to < 5	-	-	-	-	-	-
	5 to < 10	1	-	-	-	5.00	-
	10,00 to < 100,00	1	1	100	-	17.50	20.00
	10 to < 20	1	1	100	-	17.50	20.00
	20 to < 30	-	-	-	-	-	-
	30,00 to < 100,00	-	-	-	-	-	-
	100,00 (Default)	2	-	-	100	100	-

[1] PD ranges for the estimated probability of default (PD) of each obligor in this exposure class at the start of the disclosure period, excluding substitution effects due to credit risk mitigation techniques.
[2] Number of obligors at the end of previous year, i.e. at the start of the disclosure period.
[3] Number of obligors that defaulted in the course of the year (i.e. the year prior to the disclosure date) pursuant to Article 178 of the CRR.
[4] Arithmetic mean of the observed one-year default rate pursuant to Article 4(1) no. 78 of the CRR in relation to the obligors not yet subject to default at the start of the one-year observation period.
[5] Exposure value-weighted average probability of default (PD) weighted using the exposure at default (EaD) according to EU CR6 (column e) at the beginning of the disclosure period.
[6] Obligor-weighted average probability of default (PD) weighted using the number of obligors (EU CR9, column c) at the start of the disclosure period.
[7] The simple average of the annual default rates for the last five years.

There were six defaults in the reporting period. This does not include one new obligor whose financing was not yet in place at the end of 2021. Due to what are partly low quantities (particularly with regard to defaults in recent years), as well as the calibration of the rating models to long-term average default rates, the average historical default rate can deviate from the forecast average PD. No observations are assigned to the 0.50 to 0.75 PD range due to the uniform pbb Group PD master scale used. The “Central governments and central banks”, “Institutions” and “Retail exposures” IRBA exposure classes do not apply to pbb Group.

Three clients defaulted in the reporting period for whom an available line existed one year prior to default, considered with a credit conversion factor (CCF) of 50%. An average CCF of 33.8% was realised.

Counterparty credit risk

This chapter sets out the information on pbb Group's counterparty credit risk resulting from derivatives and securities financing transactions (securities lending/repo transactions) in accordance with Article 439 of the CRR and also Articles 438 (h), 444 (e) and 452 (g) of the CRR.

Counterparty credit risk (CCR) is the risk of default by the counterparty in the context of a derivative or securities financing transaction before the final settlement of the payments associated with the transaction concerned.

Objectives and counterparties

Derivatives

pbb Group uses derivatives mainly to hedge market risks resulting, for example, from changes in interest rates or exchange rates. These hedging transactions are countered by underlying asset or liability items. 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. pbb Group also provides derivatives for real estate customers and public-law entities, for example to enable them to hedge market risks associated with commercial real estate financing on their side.

Securities financing transactions

Securities lending/repo transactions are used for short-term liquidity management and are also an important source of collateralised funding for pbb. The counterparties are primarily OECD credit institutions or Eurex Repo.

Qualifying central counterparty

pbb is a direct clearing member of Eurex Clearing. Eurex Clearing is the central clearing house used by pbb/the qualifying central counterparty (qualifying CCP) pursuant to Article 4 no. 88 of the CRR. This allows pbb Group to make use of the option of settling certain types of contracts via a central counterparty, reducing bilateral default risk in the process.

Methods for determining the own funds requirement

Derivatives

pbb Group has applied the standardised approach (SA-CCR) to the calculation of own funds requirements for counterparty credit risk pursuant to Part 3, Title II, Chapter 6 of the of the CRR (for derivative transactions) since 28 June 2021 in accordance with Articles 274 et seqq. of the CRR. Until the CRR II came into force, pbb Group used the mark-to-market method.

pbb Group uses the standardised approach pursuant to Article 384 of the CRR to calculate the additional own funds requirement for OTC derivatives for credit valuation adjustment risk (CVA risk) according to Part 3, Title VI of the CRR.

Securities financing transactions

As far as securities financing transactions (securities lending/repo transactions) are concerned, pbb Group applies the provisions for credit risk mitigation in accordance with Chapter 4 of the CRR, namely the Financial Collateral Comprehensive Method in accordance with Articles 223 et seqq. of the CRR.

Qualifying central counterparty

When it comes to calculating the own funds requirements for pre-funded contributions to the default fund of a qualifying central counterparty, pbb Group applies the risk-sensitive approach in accordance with Article 308 of the CRR.

Quantitative disclosures on counterparty credit risk

Tables EU CCR1 to EU CCR5 and EU CCR8 below show pbb Group's counterparty credit risk exposures as at the disclosure date of 31 December 2022.

Table EU CCR6 "Credit derivatives exposures" in accordance with Article 439 (j) of the CRR is not relevant for pbb Group. pbb Group has not executed any hedging transactions with credit derivatives (purchased or sold credit protection), either as protection buyer or protection seller.

Table EU CCR7 "RWA flow statements of CCR exposures under the IMM" in accordance with Article 438 (h) of the CRR is also not relevant for pbb Group. pbb Group does not use an Internal Model Method (IMM) for counterparty credit risk.

Counterparty credit risk exposures

The exposure value (EaD) for counterparty credit risk, excluding initial margin and default fund contributions, amounts to € 874 million (€ +472 million compared to 30 June 2022), € 204 million of which relates to exposures to the central counterparty Eurex Clearing. In the second half of 2022, higher EaD resulted primarily from new securities financing transactions (repo and reverse repo transactions) entered into. The volume of derivatives, on the other hand, was down. Higher interest rates led to a significantly lower faire value of hedging derivatives.

Of the total of € 874 million, an amount of € 866 million refers to exposures that are recorded under the standardised approach (CRSA) (see EU CCR3), and an amount of around € 9 million to exposures for which pbb Group calculates RWA under the advanced IRB approach (IRBA) based on Bank-internal rating procedures (see EU CCR4).

The exposure values (exposure at default, EaD) for the CVA risk (see EU CC2) amounts to € 195 million (€ -14 million as against 30 June 2022). The CVA charge is the additional own funds requirement for the risk of a credit valuation adjustment (CVA risk) for OTC derivatives, i.e. for potential (unexpected) market value losses in connection with a deterioration in a counterparty's credit rating. Transactions with Eurex Clearing are not included in the own funds requirement for CVA risk.

The exposures for contributions to Eurex Clearing's default fund (see EU CCR8) amount to approximately € 7 million and are thus unchanged compared to 30 June 2022. The default fund is used to cover losses that could arise due to the default of one or more clearing members and that exceed the losses covered by the margin calls (initial margin).

Table EU CCR1 shows the counterparty credit risk based on the method used in accordance with Article 439 (f), (g), (k) and (m) of the CRR. Exposures to central counterparties are not included; these are shown separately in table EU CCR8 below.

EU CCR1: Analysis of CCR exposure by approach

All figures in € million, unless otherwise stated		a	b	c	d	e	f	g	h
		Replacement cost (RC) [4]	**Potential future exposure (PFE) [5]**	**EEPE [6]**	**Alpha used for computing regulatory exposure value**	**Exposure value pre-CRM [7]**	**Exposure value post-CRM [8]**	**Exposure value [9]**	**RWA [10]**
EU-1	EU - Original Exposure Method (for derivatives)	-	-	———	1.4	-	-	-	-
EU-2	EU - Simplified SA-CCR (for derivatives)	-	-	———	1.4	-	-	-	-
1	SA-CCR (for derivatives) [1) 2)]	442	260	———	1.4	740	210	207	106
2	IMM (for derivatives and SFTs)	———	———	-	-	-	-	-	-
2a	thereof securities financing transactions netting sets	———	———	-	———	-	-	-	-
2b	thereof derivatives and long settlement transactions netting sets	———	———	-	———	-	-	-	-
2c	thereof from contractual cross-product netting sets	———	———	-	———	-	-	-	-
3	Financial collateral simple method (for SFTs)	———	———	———	———	-	-	-	-
4	Financial collateral comprehensive method (for SFTs) [3]	———	———	———	———	1,709	463	463	175
5	VaR for SFTs	———	———	———	———	-	-	-	-
6	**Total**	———	———	———	———	**2,448**	**672**	**670**	**281**

1) Table EU CCR1 does not include any exposures to central counterparties (CCPs).
2) pbb measures the exposure value for the counterparty credit risk associated with derivative transactions using the standardised approach (SA-CCR) in accordance with Part 3, Chapter 6, Section 3 of the CRR.
3) As far as securities financing transactions (securities lending/repo transactions) are concerned, pbb applies the provisions for credit risk mitigation in accordance with Part 3, Chapter 4 of the CRR, namely the Financial Collateral Comprehensive Method in accordance with Articles 223 et seqq. of the CRR.
4) Replacement cost (RC), including collateral received/furnished, calculated in accordance with Article 275 of the CRR.
5) Potential future exposure (PFE) calculated in accordance with Article 278 of the CRR.
6) Effective expected positive exposure (effective EPE) pursuant to Article 272 no. 22 of the CRR applying the internal model method (IMM).
7) Derivatives (line 1): Exposure value after netting, but before credit risk mitigation (collateral received) and excluding CVA (credit valuation adjustment) losses recognised in the income statement.
SFTs (line 4): Exposure value (cash or securities amount) before netting and before credit risk mitigation.
8) Derivatives (line 1): Exposure value after netting and after credit risk mitigation (collateral received), but excluding CVA losses recognised in the income statement.
SFTs (line 4): Exposure value (exposure at default, EaD) after netting and after credit risk mitigation.
9) Exposure value (exposure at default, EaD), the relevant amount (this contains the counterparty risk weight) for calculating the risk-weighted exposure amounts (column h).
The EaD of a netting set is calculated as follows: EaD = 1.4 x (RC + PFE).
Derivatives (line 1): Exposure after netting and after credit risk mitigation (collateral received), and also including CVA losses recognised in the income statement.
SFTs (line 4): Exposure after netting and after credit risk mitigation.
10) Risk-weighted exposure amount (risk-weighted assets, RWA) for calculating own funds requirements based on the Credit Risk Standardised/IRB approach.

Table EU CCR8 shows the exposures to central counterparties in accordance with Article 439 (i) of the CRR. The qualifying central counterparty (qualifying CCP) used by pbb is Eurex Clearing.

EU CCR8: Exposures to CCPs

All figures in € million, unless otherwise stated		a Exposure value [1]	b RWA [2]
1	**Exposures to QCCPs (total)**	**—**	**5**
2	Exposures for trades at QCCPs (excluding initial margin and default fund contributions); thereof	204	4
3	(i) OTC derivatives	7	-
4	(ii) Exchange-traded derivatives	-	-
5	(iii) SFTs	197	4
6	(iv) Netting sets where cross-product netting has been approved	-	-
7	Segregated initial margin [3]	-	—
8	Non-segregated initial margin [4]	-	-
9	Prefunded default fund contributions	-	-
10	Unfunded default fund contributions	7	1
19	Prefunded default fund contributions	-	-
20	Unfunded default fund contributions	-	-

[1] Exposure amount (exposure at default, EaD), excluding exposures to non-CCPs.
[2] Risk-weighted exposure amount (risk-weighted assets, RWA), excluding exposures to non-CCPs.
[3] Collateral held out of court bankruptcy remote within the meaning of Article 300 no. 1 of the CRR.
[4] Collateral not held out of court bankruptcy remote within the meaning of Article 300 no. 1 of the CRR.

Table EU CCR2 shows the own funds requirements for CVA risk based on the method used in accordance with Article 439 (h) of the CRR. No CVA charge is calculated for exposures to the central counterparty Eurex Clearing in accordance with Article 382 of the CRR.

EU CCR2: Transactions subject to own funds requirements for CVA risk

		a	b
All figures in € million, unless otherwise stated		**Exposure value [2]**	**RWEA**
1	Total transactions subject to the Advanced method	-	-
2	(i) VaR component (including the 3× multiplier)	———	-
3	(ii) stressed VaR component (including the 3× multiplier)	———	-
4	Transactions subject to the Standardised method [1]	195	146
EU-4	Transactions subject to the Alternative approach (Based on the Original Exposure Method)	-	-
5	**Total transactions subject to own funds requirements for CVA risk**	**195**	**146**

[1] pbb uses the standardised method in accordance with Article 384 of the CRR to calculate the own funds requirements for credit valuation adjustment risk (CVA risk) for OTC derivatives. Transactions with Eurex Clearing, the central counterparty (CCP) used by pbb, are not included in the own funds requirements for CVA risk.
[2] Exposure amount (exposure at default, EaD), the relevant amount (this contains the counterparty risk weight) for calculating the risk-weighted exposure amounts (column b).

Table EU CCR3 shows the counterparty credit risk based on the standardised approach by exposure class and risk weight in accordance with Articles 439 (l) and 444 (e) of the CRR. The exposure values vis-à-vis Eurex Clearing are shown in the standardised approach, among other things (“Institutions” exposure class).

EU CCR3: Standardised approach – CCR exposures by regulatory exposure class and risk weights

		a	b	c	d	e	f	g	h	i	j	k	l
	Exposure classes	**Risk weight**											**Total exposure value** [1]
All figures in € million, unless otherwise stated		**0%**	**2%**	**4%**	**10%**	**20%**	**50%**	**70%**	**75%**	**100%**	**150%**	**Others**	
1	Central governments or central banks	-	-	-	-	-	-	-	-	-	-	-	-
2	Regional government or local authorities	-	-	-	-	-	-	-	-	-	-	-	-
3	Public sector entities	1	-	-	-	-	-	-	-	-	-	-	1
4	Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-	-
5	International organisations	-	-	-	-	-	-	-	-	-	-	-	-
6	Institutions	-	204	-	-	207	450	-	-	-	-	-	861
7	Corporates	-	-	-	-	-	-	-	-	3	-	-	3
8	Retail	-	-	-	-	-	-	-	-	-	-	-	-
9	Institutions and corporates with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-
10	Other items	-	-	-	-	-	-	-	-	-	-	-	-
11	**Total exposure value**	**1**	**204**	**0**	**0**	**207**	**450**	**0**	**0**	**3**	**0**	**0**	**866**

[1] Exposure amount (exposure at default, EaD), including transactions settled with Eurex Clearing, in accordance with the COREP reporting of own funds and own funds requirements.

Table EU CCR4 shows the counterparty credit risk based on the IRB approach by exposure class and PD scale in accordance with Articles 439 (l) and 452 (g) of the CRR. No counterparty credit risk exposures are allocated to the “Central governments and central banks”, “Institutions” or “Retail exposures” IRBA exposure classes either as at the disclosure date or as at the end of the first half of the year, which is why table EU CCR4 is only shown for the “Corporates” exposure class.

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

			a	b	c	d	e	f	g
All figures in € million, unless otherwise stated	**Exposure class**	**PD scale** [1]	**Exposure value** [2]	**Exposure weighted average PD (%)** [3]	**Number of obligors**	**Exposure weighted average LGD (%)** [4]	**Exposure weighted average maturity (years)**	**RWA** [5]	**Density of risk weighted exposure amounts (%)** [6]
1	**Corporates - Specialised Lending**	0.00 to <0.15	-	-	-	56.01	-	-	-
2		0.15 to <0.25	-	0.20	4	56.01	5	-	81.12
3		0.25 to <0.50	1	0.41	27	56.01	3	1	72.16
4		0.50 to <0.75	-	-	-	-	-	-	-
5		0.75 to <2.50	3	1.49	34	56.01	3	4	116.67
6		2.50 to <10.00	3	2.92	18	56.01	5	5	199.11
7		10.00 to <100.00	-	12.50	3	56.01	1	1	251.33
8		100.00 (Default)	-	-	-	-	-	-	-
	Sub-total		**8**	**2.30**	**86**	**56.01**	**4**	**11**	**143.23**
1	**Corporates - Specialised Lending**	0.00 to <0.15	1	0.08	3	56.01	4	-	48.74
2		0.15 to <0.25	-	0.20	1	56.01	5	-	88.41
3		0.25 to <0.50	-	-	-	-	-	-	-
4		0.50 to <0.75	-	-	-	-	-	-	-
5		0.75 to <2.50	-	-	-	-	-	-	-
6		2.50 to <10.00	-	-	-	-	-	-	-
7		10.00 to <100.00	-	-	-	-	-	-	-
8		100.00 (Default)	-	-	-	-	-	-	-
	Sub-total		**1**	**0.12**	**4**	**56.01**	**4**	**0**	**61.83**
Total (all CCR-relevant risk position classes) [7]			**9**	**2.09**	**90**	**56.01**	**4**	**12**	**135.66**

[1] PD ranges for the estimated probability of default (PD), excluding substitution effects due to credit risk mitigation techniques.
[2] Exposure value (exposure at default, EaD).
[3] Exposure value-weighted average probability of default (PD), weighted using the exposure amount in column (a).
[4] Exposure value-weighted average loss given default (LGD), weighted using the exposure amount in column (a).
[5] Risk-weighted exposure amounts (risk-weighted assets, RWA).
[6] RWA density (%): calculated by dividing the RWA (column f) by the respective EaD (column a).
[7] As no CCR exposures are allocated to the “Central governments and central banks”, “Institutions” or “Retail exposures” IRBA exposure classes as at the disclosure date, no breakdown has been provided for these exposure classes.

Table EU CCR5 shows the collateral received and furnished for counterparty credit risk, with separate information provided for derivatives and securities financing transactions, in accordance with Article 439 (e) of the CRR. Further information on the collateral used is described in the section entitled "Mitigation of counterparty credit risk and securing collateral".

EU CCR5: Composition of collateral for CCR exposures

		a	b	c	d	e	f	g	h
		Collateral used in derivative transactions				**Collateral used in SFTs**			
	Collateral type	**Fair value of collateral received**		**Fair value of posted collateral**		**Fair value of collateral received**		**Fair value of posted collateral**	
All figures in € million		**Segregated** [1]	**Unsegregated** [2]	**Segregated** [1]	**Unsegregated** [2]	**Segregated** [1]	**Unsegregated** [2]	**Segregated** [1]	**Unsegregated** [2]
1	Cash – domestic currency	-	286	-	1,496	-	44	-	-
2	Cash – other currencies	-	97	-	-	-	-	-	-
3	Domestic sovereign debt	-	-	-	-	-	-	-	-
4	Other sovereign debt	-	-	-	-	-	70	-	-
5	Government agency debt	-	-	-	-	-	-	-	-
6	Corporate bonds	-	-	-	-	-	-	-	-
7	Equity securities	-	-	-	-	-	-	-	-
8	Other collateral	-	-	-	-	-	1,000	-	-
9	**Total**	**0**	**383**	**0**	**1,496**	**0**	**1,115**	**0**	**0**

[1] Collateral held out of court bankruptcy remote within the meaning of Article 300 no. 1 of the CRR.

[2] Collateral not held out of court bankruptcy remote within the meaning of Article 300 no. 1 of the CRR.

Internal capital allocation and upper limits for counterparty credit risk exposures

Capital allocation and the limits that apply to default risks vis-à-vis counterparties (including Eurex Clearing, the central clearing house used by pbb) are embedded in the general allocation and limit-setting process for default risks that apply within pbb Group. pbb Group does not have any separate capital allocation or limits for default risks in connection with derivative or securities financing transactions. Limits are allocated based primarily on counterparty credit ratings, which are determined to a decisive degree by the rating procedures used. For details on capital allocation to risk types, please refer to the chapter on the ICAAP and monitoring of risk-bearing capacity (see chapter entitled “Economic capital and risk-bearing capacity (ICAAP)”). In all other respects, the methodology used in the context of regulatory large exposure management applies. Counterparty limit utilisation is monitored continually by Risk Management & Control (RMC) on a daily basis.

Wrong-way risk

The requirement set out in Article 439(c) of the CRR regarding a discussion of policies with respect to wrong-way risk exposures is not relevant for pbb Group. pbb Group does not trade in products whose underlying is directly correlated with the counterparty’s probability of default.

Mitigation of counterparty credit risk and securing collateral

In accordance with Article 439 (b) of the of the CRR, the section below discusses the policies for mitigating default risk and securing collateral. Within this context, pbb Group applies the regulatory provisions on off-balance sheet netting for both derivative financial instruments and securities lending/repo transactions where the contractual agreements meet the requirements for risk-mitigating recognition in accordance with Article 296 of the of the CRR and Article 206 of the CRR. pbb Group uses the standard market master agreements, including the relevant collateral agreements.

Netting agreements

The business with both derivatives and securities lending/repo transactions is usually concluded based on standardised bilateral netting contracts which serve to minimise the legal risk, as well as the economic and regulatory default risk and which enable mutual risks to be netted (netting). In doing so, the positive and negative market values of all contracts included in one netting arrangement may be netted, and the future regulatory risk premiums for these products may be reduced. As a result of the netting process, the default risk is reduced to one single net receivable from the counterparty. pbb Group does not use cross-product netting (derivatives versus securities financing transactions).

These risk-reducing methods are used for both regulatory reporting and internal measurement and monitoring of credit exposures – only when these are considered enforceable upon the relevant business partner's insolvency in the respective jurisdiction. Validity and enforceability are reviewed on the basis of legal opinions.

The national/international agreements used for derivative and securities lending/repo transactions are the German Master Agreement on Financial Derivatives (Deutscher Rahmenvertrag für Finanztermingeschäfte – “DRV”) under German law and the ISDA Master Agreement of the International Swaps and Derivatives Association (ISDA), as well as the Global Master Repurchase Agreement (GMRA), the German Master Agreement for Securities Repurchase Transactions (DRV), the Master Agreement for Financial Transactions/ European Master Agreement (EMA), the German Master Agreement for Securities Lending (DRV) and the Global Master Securities Lending Agreement (GMSLA).

pbb is a direct clearing member of Eurex Clearing. Eurex Clearing is the central clearing house used by pbb/the qualifying central counterparty (qualifying CCP) pursuant to Article 4 no. 88 of the CRR. This allows pbb Group to make use of the option of settling certain types of contracts via a central counterparty, reducing bilateral default risk in the process.

Collateral agreements

In line with the netting contracts, pbb Group also enters into standard market collateral agreements (German Collateral Annex to the DRV or ISDA Collateral Support Annex) with certain counterparties in addition to the netting contracts in order to hedge the net receivable/liability that remains after netting (receipt or furnishing of collateral). The collateral agreements limit the default risk through prompt valuation and adjustment of the customer exposure (limit relief), meaning that they free up scope for new transactions within the counterparty lines that have been granted.

Collateral used for derivative and securities lending/repo transactions comprises financial collateral (mainly cash collateral, but partly also securities). Collateral is usually provided by full transfer of rights, and in the case of securities, also by way of pledging. pbb usually furnishes and receives cash collateral in euros. The collateral received is documented in the system. pbb Group also verifies the validity and enforceability of collateral by means of legal opinions.

The current hedging requirements are calculated on a daily basis using mark-to-market valuations and are coordinated with the counterparties. Where threshold amounts have been agreed, collateral is only requested when the threshold amount that applies to the counterparty concerned has been reached. If minimum transfer amounts have been agreed, the same procedure as that used for threshold amounts applies. A payment request (call) is only made when the relevant minimum transfer amount is reached or exceeded. No call is made in the event of changes in the mark-to-market valuation below this threshold in order to limit the settlement costs. Incoming payments are monitored and the counterparty is issued with a reminder where appropriate.

There is also a collateral agreement in place for the central counterparty Eurex Clearing. The collateral furnished for both derivatives and securities lending/repo transactions consists primarily of securities made available specifically for Eurex Clearing in a securities portfolio. Cash collateral can also, however, be furnished.

Rating-based collateral service agreements

As at the disclosure date, pbb Group has not concluded any rating-based collateral service agreements (CSA) with counterparties which provide for a reduction in the minimum transfer amount in the event of a rating downgrade. On a general note, the extent of the adjustment is explicitly agreed with the counterparty in the collateral service agreement. At present, the collateral service agreements also do not include any provision for threshold amounts based on 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, the cash flows are postponed and no additional payments are made. This is due 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 as of which payments have to be made. If the minimum transfer amount is reduced, meaning that payments have to be made as of a lower threshold, this has no impact on the amount of collateral itself, but rather only on the amount as of which changes in value in the CSA portfolio are offset. This means that changes in value are offset earlier on for smaller minimum transfer amounts.

The non-rating-based minimum transfer amounts agreed in the collateral agreements total € 17 million as at 31 December 2022 (31 December 2021: € 22 million).

The following table shows the senior unsecured ratings mandated by pbb as at the disclosure date.

Senior unsecured ratings (EU CCRA)

Deutsche Pfandbriefbank AG		Standard & Poor's
	Long-term issuer rating / outlook	BBB+ / Stabil
	Short-term issuer rating	A-2
	Long-term “preferred” senior unsecured debt rating [1]	BBB+
	Long-term “non-preferred” senior unsecured debt rating [2]	BBB-

[1] „Senior unsecured debt“.
[2] „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 assessment and usage of ratings, please refer to the rating agencies’ pertinent criteria and explanations, and pay attention to the relevant terms of use. 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.

Establishing credit reserves

The section below describes the policies for establishing credit reserves (loss allowance) for derivatives and securities financing transactions (securities lending/repo transactions) pursuant to Article 439 (b) of the CRR.

Derivatives

Under IFRS 9, derivatives are to be measured at fair value through profit or loss, unless they are used as hedging instruments in cash flow hedge accounting. For those financial assets that are subsequently measured at fair value through profit or loss, an impairment is implied in the fair value. This means that value adjustments resulting from a counterparty credit risk are reflected directly in the calculation of fair value. The maximum default risk is reflected in the nominal value for derivative assets measured at fair value through profit or loss.

The positive/negative market values of stand-alone derivatives are reported in the balance sheet under "Financial assets at fair value through profit or loss" or "Financial liabilities at fair value through profit or loss". Changes in fair value within a period are recognised through profit or loss in the income statement item “Result of financial instruments measured at fair value through profit or loss” (fair value valuation result).

The positive/negative market values of hedge accounting derivatives are shown under the balance sheet items “Positive fair values of hedge accounting derivatives” or “Negative fair values of hedge accounting derivatives”. Hedge accounting derivatives contain the fair values of the derivatives which are used as hedges in hedge accounting. As the pbb Group no longer designates any derivatives in cash flow hedge accounting, this only includes derivatives in micro fair value hedge accounting or the portfolio hedge for interest rate risks and, to a minimal extent, currency risks. These are measured at fair value. Changes in fair value during a period are shown through profit or loss in the item “Net income from hedge accounting” in the income statement.

CVA and DVA

In order to account for expected counterparty credit risks in the case of OTC derivatives, the pbb Group recognises credit value adjustments (CVA) and debt value adjustments (DVA), i.e. adjustments to the valuation of OTC derivatives for accounting purposes. The CVA describes the valuation adjustments to reflect the counterparty default risk (the deterioration in the counterparty’s credit standing), and the DVA describes the adjustments relating to pbb’s own default risk (the deterioration in pbb’s own credit standing) with regard to a counterparty. The CVA losses are recognised in the income statement and are taken into account when calculating the exposure value. The DVA adjustments are deducted from the CET1 capital.

CVA charge

pbb Group uses the standardised approach pursuant to Article 384 of the CRR to calculate the additional own funds requirement for OTC derivatives for credit valuation adjustment risk (CVA risk) according to Part 3, Title VI of the CRR, i.e. for potential market value losses in connection with a deterioration in the counterparty's credit rating.

Securities financing transactions

In the case of securities financing transactions (securities lending/repo agreements), the general provisions and regulations on credit risk adjustments and impairment according to IFRS 9 described in the chapter "Credit risk", in the section "Credit risk adjustments" apply. These regulations apply, among other things, to financial assets "at amortised cost" or "measured at fair value through other comprehensive income".

Securitisations

As at the disclosure date of 31 December 2022, pbb Group still has no exposures from securitisations in its portfolio. As a result, the information and tables pursuant to Article 449 of the CRR in conjunction with EU SEC1 to EU SEC5 do not have to be disclosed for pbb Group.

There are no plans for any new securitisations of pbb's own exposures in the 2023 financial year. pbb Group's business strategy does not currently define new securitisation transactions as an objective.

Market risk

The chapter "Market risk" describes the risk management targets and policy for pbb Group's market risk (including interest rate risk) in accordance with Article 435 (1) of the CRR, and offers information about the calculation of own funds requirements pursuant to Article 445 of the CRR and also about interest rate risk in the banking book pursuant to Article 448 of the CRR. However, disclosure pursuant to Article 455 of the CRR ("Use of Internal Market Risk Models") is not relevant for pbb Group. pbb Group is currently not using internal models (IMA) for calculating its own funds requirements, but instead adopts the Standardised Approach as set out in Articles 325 et seqq. of the CRR.

Market risk management

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. The transactions entered into by pbb Group are mainly subject to the following types of market risk:

- General interest rate risk (risk from changes in market interest rates)
- Basis risk (risk from changes in tenor basis spreads or cross-currency basis spreads)
- Volatility risk (risk from changes in implied volatility)
- Credit spread risk (risk from changes in credit spreads)
- Foreign currency risk (risk from changes in foreign exchange rates)
- Concentration risk (risk of additional losses due to a non-diversified portfolio mix).

Risk strategy

pbb 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 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 for the period. In addition, credit spread risks in the banking book (CSRBB) are included in the regular risk measurement, controlling and monitoring as well.

Organisation

Positions with regard to Market risk are monitored by way of a present value approach by Risk Management & Control (RMC), which is separated from trading in the structural organisation, right through to the Management Board. The Finance department monitors the periodic interest rate risk.

Risk reporting

RMC prepares detailed market risk reports for senior management and operational management purposes, on a daily basis. The daily market risk report, which is primarily addressed to the Management Board, includes:

> Market risk value-at-risk (VaR) and VaR limit utilisations for the entire CSRBB and IRRBB market risk (and its components of general interest rate risk, basis risk and option/volatility risk),
> sensitivities of market risk factors at various levels of detail and monitoring of sensitivity triggers and
> a presentation of the economic performance measurement and the breakdown of the economic performance by individual risk factors.

pbb provides quarterly reports on changes in effects on income, and effects on accumulated other comprehensive income (recognised directly in equity), given pre-defined interest rate scenarios and assuming a dynamically changing balance sheet, to monitor periodic interest rate risk.

Risk quantification – market risk measurement and market risk 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 as at the disclosure date can be summarised as follows:

> The simulation model has been 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 2022, market risk VaR amounted to € 30 million, taking diversification effects between the individual market risk types into consideration (31 December 2021: € 17 million). The increase in the market risk VaR was largely attributable to higher interest rate volatility, caused primarily by the monetary policy measures taken by the ECB and other central banks to combat inflation (especially key rate hikes and communications regarding further interest rate hikes). Accordingly, the total market risk VaR limit was € 60 million throughout 2022 (year-end 2021: € 100 million).

The consolidated IRRBB VaR of all interest rate risk categories in the banking book (general interest rate risk, tenor basis spread risks, cross-currency spread risks, option risks and volatility risks) amounted to € 21 million as at year-end 2022 and CSRBB VaR amounted to € 16 million. As well as limiting market risk VaR, specific limits have been monitored daily for IRRBB VaR (limit as at the 2022 year-end: € 25 million) and CSRBB VaR (limit as at the 2022 year-end: € 50 million).

There were no breaches of market risk VaR limits during the disclosure period.

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

Sensitivity analyses

Overnight yield curves are used for the purposes of measurement relevant to sensitivity analyses Sensitivity analyses quantify the impact of changes in individual market parameters upon the value of positions. For instance, the credit spread sensitivity provides an indication of the change in economic present value which results from an isolated one basis point increase in the credit spreads which are relevant for measurement purposes.

Stress testing

Whilst VaR measures market risk in “normal” market conditions and does not provide a measure for potential maximum losses, internal economic stress scenarios are used to map market risk in difficult or even extreme economic framework conditions. pbb Group employs hypothetical and historical stress scenarios for key risk drivers on a monthly and quarterly basis, to determine the impact of strong to extreme changes in market data and assumptions regarding client behaviour on the economic present value.

In addition to internal economic stress scenarios, external regulatory stress scenarios relating to the supervisory standard test and the early warning indicator are calculated and analysed.

The Management Board and the executive bodies are informed about the results of stress test scenarios on a regular basis. In connection with managing interest rate risk in the banking book (including credit spread risks), the changes in present value of selected internal and external stress scenarios have also been monitored through specific limits or triggers.

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. For the qualitative analysis of the risk model the Basel Capital Accord’s “traffic light” system is used. For this purpose, the number of outliers detected in back-testing within a period of 250 trading days is counted. Two outliers were observed during the 250 trading days until the end of 2022; they were attributable in particular to relatively strong increases in euro swap rates in February and June 2022. 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 (dynamic earnings), thus simulating changes in future income statements and balance sheet developments, which will materialise if the balance sheet develops as planned, and under pre-defined interest rate scenarios. Measurement and monitoring of periodic interest rate risks was carried out at the end of each quarter, for a simulation horizon covering the following four quarters. Negative deviations from the base value were monitored, using a trigger of € 60 million for effects on income, and a trigger of € 100 million for effects on accumulated other comprehensive income (recognised directly in equity). Both triggers were not exceeded Both triggers were not exceeded during the dis-closure period.

Economic capital for market risk

The chapter “Economic capital and risk-bearing capacity (ICAAP)” provides details concerning the calculation as well as the quantification of economic capital for market risk.

Mapping and recognition of economic hedges as on-balance-sheet hedges

Unter Hedge Accounting sind die speziellen Bilanzierungsvorschriften für Sicherungsbeziehungen der IFRS zu verstehen, deren Ziel die weitgehend kompensierende Erfassung der Wertänderungen der abgesicherten Grundgeschäfte und Sicherungsinstrumente ist. Für die bilanzielle Erfassung von Sicherungsbeziehungen müssen die Voraussetzungen der IFRS erfüllt sein. Diese Voraussetzungen wie zum Beispiel die Anforderungen an die Wirksamkeit einer Sicherungsbeziehung stimmen teilweise nicht mit den in der Banksteuerung verwendeten Methoden überein. Daher kann es zu Abweichungen zwischen den ökonomischen und den bilanziellen Sicherungsbeziehungen kommen.

Market risk management, monitoring, and reduction

pbb Group uses a three-pillar approach for managing and monitoring market risk:

- management of positions maintained by Treasury
- risk measurement and monitoring compliance with triggers and limits (independent from trading units)
- escalation processes across all decision-making bodies, right through to the Management Board.

Financial derivatives are mainly used for hedging purposes.

General interest rate risk

General interest rate risk or gap risk amounted to € 21 million at the end of December 2022. The increase of € 12 million relative to the comparative value at the end of 2021 was due, above all, to the interest rate increases described in the section "Market risk value at risk".

Basis risks

Basis risks refer to tenor basis spread and cross-currency basis spread risks. As at the disclosure date, tenor basis spread risks amount to € 3 million (year-end 2021: € 1 million) and cross-currency basis spread risks to € 2 million (year-end 2021: € 1 million).

Volatility risks

Volatility risks amounted to € 1 million as at 31 December 2022 (year-end 2021: € 1 million).

Credit spread risk (CSRBB)

The majority of credit spread risk is attributable to assets eligible for inclusion in Pfandbrief cover. The Bank has risk measurement systems in place to determine credit spread risks 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.

Foreign Currency Risks

The present value of foreign currency risk amounted to € 0.5 million as at end of 2022 (year-end 2021: € 0.3 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.

Interest rate risk exposures which are outstanding 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 extended, for example.

Own funds requirement for market risk

In accordance with Part 3, Title IV of the CRR, market risks must be backed by own funds. pbb Group still does not maintain a trading book for securities or derivatives portfolios held to realise short-term gains. Thus, only own funds requirements for foreign exchange risk (the risk arising from changes in interest rates) apply to pbb Group's operations, as illustrated in table EU MR1 (below) in accordance with Article 445 of the CRR. pbb Group uses the Standardised Approach pursuant to Articles 325 et seqq. of the CRR to calculate its own funds requirements.

pbb Group is currently not using any internal models (IMA) pursuant to Articles 362 et seqq. for calculating its own funds requirements. Tables EU MRB, EU MR2-A / EU MR2-B, EU MR3 and EU MR4 in accordance with Articles 455 and 438 (h) of the CRR are therefore not relevant for pbb Group.

Quantitative information on market risk

Table EU MR1 in accordance with Article 445 of the CRR shows the own funds requirements and risk-weighted assets (RWAs) for pbb Group's market risk.

The own funds requirement for market risks as at the disclosure date decreased markedly to € 2 million (30 June 2022: € 5 million). The decline results from lower foreign currency exposure (€ -31 million decline in RWAs compared to 30 June 2022).

EU MR1: Market risk using the Standardised Approach

		a	a
All figures in € million		**Risk-weighted assets (RWA)**	**Minimum capital requirement**
	Outright products		
1	Interest rate risk (general and specific)	-	-
2	Equity risk (general and specific)	-	-
3	Foreign exchange risk	31	2
4	Commodity risk	-	-
	Options		
5	Simplified approach	-	-
6	Delta-plus approach	-	-
7	Scenario approach	-	-
8	Securitisation (specific risk)	-	-
9	**Total**	**31**	**2**

Interest rate risk in the banking book

In contrast to credit risk (counterparty credit risk), other market risks (foreign currency risks) or operational risk, the CRR stipulates no regulatory own funds requirement for interest rate risk in the banking book.

However, in the absence of a regulatory own funds requirement, pbb Group nevertheless applies the same methods and processes for interest rate risk in the banking book as for market risk, as set out in the chapter “Market risk management”. As set out therein, pbb also incorporates periodic interest rate risks in parallel with present value interest rate risks, and measures, manages and monitors these risks on a regular basis.

pbb is directly supervised by the ECB and meets the additional own funds requirements and capital requirements under the ECB’s Supervisory Review and Evaluation Process (SREP).

Risk metrics and risk reporting

Interest rate risk at present value

Interest rate risk in the banking book at present value refers to an institution’s risk in terms of economic value resulting from unfavourable interest rate movements that impact instruments sensitive to interest rates, and includes the risk of yield curve shifts (gap risk), base risk and option risk. Interest rate risk at present value is measured through sensitivities and Value-at-Risk metrics and is determined by Risk Management & Control (RMC) on a daily basis, independently of trading units, for all items in the banking book sensitive to interest rates. Compliance with sensitivity triggers and Value at Risk (VaR) limits is also checked on a daily basis and reported to pbb’s Management Board. The internal and regulatory stress scenarios for interest rate risk in the banking book, including the six interest rate scenarios prescribed by the EBA Guidelines EBA/GL/2018/02, are calculated on a monthly basis.

Periodic interest rate risk

The periodic interest rate risk in the banking book reflects the risk arising from changes in the yield curve relative to the Bank’s earnings. The measurement looks at changes in net interest income which result from interest rate changes, assuming a constant balance sheet (delta static net interest income) pursuant to IFRS 9. Calculations are carried out at the end of each half of the year and at year-end, for a simulation horizon covering the following four quarters.

The dynamic earnings model is also used to manage periodic interest rate risk (in accordance with EBA/GL/2018/02). In contrast to the static net interest income assumption, this model does not assume a constant balance sheet, but instead uses new business data from multi-year planning. Furthermore, not only net income, but also fee and commission income, net income from realisations, net income on financial instruments recognised through profit or loss, and changes of cumulative other income are calculated. Negative deviations from the base value are monitored at the end of each quarter, using a trigger each for changes in the income statement and for changes in accumulated other comprehensive income. As in the first half of 2022, no trigger event occurred in any of the eight different interest rate stress scenarios (including those prescribed by the EBA) in the disclosure period from 30 June 2022 to 31 December 2022. Periodic interest rate risk is assessed on a quarterly basis, using the dynamic earnings model.

Disclosures on models and parameters

In line with regulatory requirements (see EBA/GL/2018/02 “Guidelines on the management of interest rate risk arising from non-trading book activities”), non-interest-bearing equity components (recognised under liabilities) are not taken into account. However, investments of such funds (recognised under assets) are included in the calculation of interest rate risk in the banking book.

Interest rate risk at present value

Interest rate risk at present value

To determine the present value of regulatory shocks, risk-free yield curves (based on currency-specific overnight index swap curves) are used for the purposes of discounting. As a matter of consistency, the cash flows of all financial instruments included in interest rate risk in the banking book do not comprise any client-related spreads. In addition, the present-value perspective assumes a constant balance sheet as at the reporting date (i.e. no assumptions are made as to the reinvestment of maturing exposures, or as to new business). Assumptions are made regarding the cash flows of any recognised write-downs and their fixed-rate period. Moreover, specific assumptions are made as to early loan repayments and for the interest rate adjustment period of perpetual core deposits in the retail business. For these core deposits, the average time interval for adjustments of the interest rate is 0.85 years, while the longest is 3.0 years For non-core perpetual deposits in the retail business, the contractually agreed overnight fixed-rate period applies.

Periodic interest rate risk

Regarding periodic interest rate risk in the banking book, maturing exposures and repaying units are closed again at equal terms (based on the assumption of a constant balance sheet). Under the constant balance sheet (renewals) assumption, maturing or repaying units of assets, liabilities or derivatives with equivalent characteristics, especially in terms of volume, currency, term, fixed-rate period, reference index, and terms specific to a particular interest rate scenario, are renewed. Overnight deposits are used according to their terms and conditions and are extended on a rolling basis. In addition, the model book for early repayments implemented at pbb is also used as part of the internal method.

Risk management and mitigation strategy

To ensure sustainable risk management, pbb aims for stable profitability. This requires that (normative and economic) risk-bearing capacity is given, and that specific risk limits and triggers are complied with. pbb also aims to maintain and strengthen equity from the annual results, and to distribute the anticipated dividend. At the same time, the Bank strives to contain fluctuations in the periodic income statement emanating from interest rate and credit spread effects.

Under the present-value perspective, long-term interest rate risks excluding client margins are assessed on a daily basis and managed as efficiently as possible using natural hedging (reduction of interest rate risks through offsetting hedged items, excluding derivatives), portfolio hedging (portfolio fair value hedge accounting), micro hedges (micro fair value hedge accounting), and derivatives outside of hedge accounting.

Quantitative information on interest rate risk in the banking book

Table EU IRRBB1 in accordance with Article 448 (1) (a) and (b) of the CRR shows pbb Group's interest rate risk in the banking book. The table includes changes in net interest income and in the present value of banking book positions resulting from yield curve shifts within the six interest rate scenarios prescribed in the EBA Guidelines EBA/GL/2018/02.

Interest rate risk at present value

Under the assumptions made above in accordance with EBA/GL/2018/02, the largest potential change in present value as at 31 December 2022 arises from the interest rate shock scenario simulating a parallel upward shift in the yield curve. In this scenario, the present value loss in the banking book amounts to € 240 million.

Periodic interest rate risk

Looking at periodic interest rate risks, a sudden parallel upward shift of the yield curve would have a negative effect on delta static NII. In case of a parallel shift in the yield curve by +200 basis points or -200 basis points (with a dynamic interest rate floor in accordance with EBA/GL/2018/02), the change in delta static NII as at 31 December 2022 amounts to a total of € -40 million or € 18 million, respectively. The change compared to the previous year is mainly due to the adjustments of conditions and partial repayment of Targeted Longer Term Refinancing Operations (TLTRO III) and the associated reduction of cash reserves.

EU IRRBB1: Interest rate risk of non-trading book activities

		a	b	c	d
	Supervisory shock scenarios	Changes of economic value of equity [1]		Changes of the net interest income [2]	
All figures in € million		31.12.2022	30.06.2022	31.12.2022	30.06.2022
1	Parallel up	-240	-246	-40	104
2	Parallel down	137	164	18	-18
3	Steepener	-21	-25	-	-
4	Flattener	-24	-10	-	-
5	Short rate up	-95	-81	-	-
6	Short rate down	50	63	-	-

[1] ∆ EVE: This is a metric measuring changes – in the net present value of all instruments in the banking book sensitive to interest rates – resulting from sudden interest rate movements, assuming that all banking book positions run off.

[2] ∆ NII: This is an earnings-based metric measuring changes in the net interest income originating from sudden interest rate changes for the subsequent four quarters. The ∆ NII information presented here refers to a parallel shift in the yield curves by +/- 200 basis points.

Liquidity and funding risk

The chapter "Liquidity and funding risk" presents pbb Group's risk management targets and policies for liquidity and funding risk in accordance with Articles 435 (1) and 451a (1) and (4) of the CRR. It also includes information about pbb Group's Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR) in accordance with Article 451a (2) and (3) of the CRR.

Liquidity and funding risk management

Definition

Liquidity risk is the risk that current or future payment obligations cannot be met at all, not in full or not when due in terms of volume and timing structure.

Internal 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 is designed to 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. The liquidity risk strategy is a key component of pbb's risk strategy. It is broken down into various modules (comprising various liquidity scenarios, given certain market conditions and stress parameters). This is to ensure that pbb's short- and medium-term funding is monitored and managed by means of a limit system. The limits are defined as part of the annual business planning process, approved by the Management Board.

Organisation

Risk Management & Control (RMC) identifies, measures, reports and monitors liquidity risk. The Treasury department, which is independent from RMC, is responsible for managing liquidity risk. The processes and methods employed are reviewed on a regular basis by the Risk Committee and the Asset Liability Committee. Liquidity Risk cannot be calculated and reported at a business segment level.

Risk reporting

Liquidity management reports are prepared daily and submitted to the entire Management Board, as well as to the Joint Supervisory Team (JST) of ECB and national competent authorities responsible for pbb. 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 projections 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 situations". 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 scenario. Limits in the risk and the (historic) stress scenario are applicable for a six- respectively three-month horizon.

The limit system consists of:

- limits relating to the liquidity stress profile (risk scenario and [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 JST of ECB and national competent authorities responsible for pbb.

Risk monitoring and risk management

Monitoring of liquidity risks is ascertained through daily reporting of the liquidity situation and a defined escalation process. A liquidity emergency plan has also been adopted in this context; this plan forms the functional and organisational framework for the handling of any liquidity shortages. The liquidity emergency plan is part of the pbb Recovery Plan and updated at least annually.

Liquidity risk management is based on various interconnected components (daily and monthly liquidity reports), which are based on a "liquidity risk tolerance" defined by the Management Board. This is to ensure that pbb Group has adequate liquidity reserves at its disposal.

Risk hedging and risk mitigation

A risk tolerance system is in place to limit liquidity risk. Risk tolerance is integrated in the liquidity management process by means of triggers (limit system), in order to safeguard a "survival period" for pbb Group under stressed conditions.

The limits applicable for risk tolerance are determined in line with stress scenarios, and adjusted at regular intervals.

Opportunities

The cumulative liquidity position in the base scenario shown in the chapter “Development of liquidity risks” generally opens up the opportunity to react flexibly, particularly with regard to potential new business.

If the external factors specified in the section “Expected liquidity requirement” within the chapter “Development of liquidity risks” were to develop favourably for pbb, this would result in a lower future liquidity requirement.

Development of liquidity risks

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 2022 amounted to € 4.9 billion for a 12-month horizon in the base scenario – a € 0.3 billion increase compared to the previous year (based on the same projection horizon). As at 31 December 2022, the cumulative liquidity position for a six-month horizon amounted to € 2.2 billion in the risk scenario (31 December 2021: € 1.8 billion). The cumulative liquidity position in the stress scenario for a six-month horizon amounted to € 0.9 billion as of 31 December 2022 (31 December 2021: € 0.6 billion).

Regulatory liquidity coverage requirements

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 LCR figures for pbb Group during the third quarter of 2022 significantly exceeded 100% at all times. The Liquidity Coverage Ratio as at 31 December 2022 was 171%.

Since 30 June 2021, a Net Stable Funding Ratio (NSFR) ratio of 100% must be maintained. The NSFR shows the ratio of available stable refinancing (ASF) to required stable refinancing (RSF), and is designed to secure the medium and long-term structural liquidity. The figures determined during 2022 significantly exceeded the ratio required under the regulatory regime. The NSFR ratio as at 31 December 2022 was 110%.

For further information on the LCR and NSSFR, please refer to the chapters “Liquidity Coverage Ratio” and “Net Stable Funding Ratio”.

Funding markets

Please refer to the explanations in pbb Group’s Annual Report 2022, section “Development in financial position” in the Report on the Economic position, for details concerning developments on funding markets and changes in funding volumes during the dis-closure period.

Expected liquidity requirement

Aside from the expected liquidity requirement for new business, the size of the future liquidity requirement depends on various external factors:

- Monetary policy response to the inflationary trend (sudden interest rate hikes) and geopolitical risks, and their potential impact on the real economy
- Potential impact of ESG factors on credit spreads and funding opportunities
- 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 excess cover in the cover pools
- Refinancing requirements of real estate investors.

Funding risk

The chapter “Economic capital and risk-bearing capacity (ICAAP)” provides details concerning funding risk as part of business and strategic risk.

Market liquidity risk

For financial instruments, quantitative details for a better market liquidity risk assessment can be obtained from the presentation of the three levels of the fair value hierarchy in the Notes to pbb Group’s Annual Report 2022. Generally, there is no intention to sell holdings measured at amortised cost for liquidity management purposes, as liquidity for these holdings can mainly be generated by way of including them in the cover pool, using the funding opportunities provided by the central bank, or using them in repo transactions. Market liquidity risk is included in the internal risk management process as part of market risk.

Liquidity Coverage Ratio

The liquidity coverage requirement or Liquidity Coverage Ratio (LCR) is the ratio of an institution's liquidity buffer (i.e. the sum of high-quality liquid assets) to its net cash outflows during a phase of stress lasting 30 calendar days. The LCR is stated as a percentage.

Pursuant to Article 412 of the CRR, the LCR obliges institutions to hold a liquidity buffer in the form of high-quality liquid assets, in order to be able to compensate for net cash outflows under stressed conditions over a period of thirty days. The prescribed scenario includes both market-wide and institution-specific effects. In phases of stress, institutions may use up their liquid assets to cover their net cash outflows, even if the LCR might then fall below the applicable minimum of 100%.

Regulatory provisions require a minimum LCR of 100%. The LCR figures for pbb Group during the 2022 financial year significantly exceeded 100% at all times. As at the disclosure date of 31 December 2022, the Liquidity Coverage Ratio amounted to 171% (30 September 2022: 288%).

Disclosures on the Liquidity Coverage Ratio

Table EU LIQ1 below, in accordance with Article 451a (2) of the CRR, shows all information on the LCR for pbb Group, including all values and figures for each of the four calendar quarters preceding the disclosure date (31 December 2022). However, as opposed to the above-mentioned values as at the reporting date, these values and figures are simple averages of the figures collected at the end of each month over the twelve months preceding the end of each quarter. Table EU LIQ1 includes all items needed for the calculation of the LCR.

In the fourth quarter of 2022, the LCR exceeded 170% at all times, largely due the institution’s substantial liquidity reserve consisting of high-quality liquid assets (HQLA). Changes in the liquidity reserve and in net cash outflows are linked to the different dynamics of new business in Real Estate Financing and its funding.

Liquidity management within pbb Group

pbb is pbb Group’s only credit institution. Thus, only pbb performs liquidity management.

Funding sources

pbb Group uses a broad range of funding sources. Aside from deposits made by retail and institutional clients, funding is obtained through the issuance of Pfandbriefe, promissory notes and unsecured bonds on the capital market, but also through open-market transactions with the ECB and repo transactions on the interbank market and Eurex.

Liquidity buffer

As at the disclosure date of 31 December 2022, liquidity reserves amounted to € 5,588 million (on average), consisting of high-quality level 1 liquid assets. The liquidity buffer consists primarily of liquid cash reserves (around 90%) and HQLA level 1 bonds. Level 1 comprises deductible deposits at Deutsche Bundesbank, along with debt securities issued by central governments, regional governments or local authorities, public institutions, multilateral development banks, international organisations or credit institutions backed by state guarantees.

Liquidity inflows and outflows

Liquidity inflows primarily consist of expected loan repayments and funding obtained. Liquidity outflows are composed as follows (in order of size):

- Undrawn mortgage or other loan commitments
- Maturing funding instruments
- Potential collateral calls.

On average, cash outflows from derivatives accounted for only a minor share of all net cash outflows in the fourth quarter of 2022. To calculate potential collateral calls for derivatives, pbb Group uses the historical look-back approach (HLBA), meaning that collateral calls from the past are analysed to derive a conservative assumption as to future collateral calls. The assumption amounted to € 470 million on average. Potential rating changes are not expected to have significant effects on the ability to provide collateral.

Currency mismatches

The sensitivity of foreign currency cash flows has no material impact on pbb Group’s liquidity position. Based on the definition of the Basel Committee on Banking Supervision (BCBS), pbb Group's currency exposures are not considered material.

EU LIQ1: Quantitative information on LCR

All figures in € million, unless otherwise stated		a	b	c	d	e	f	g	h
		Total unweighted value (average) [1]				Total weighted value (average) [1]			
EU 1a	**Quarter ending on:**	**31.12.2022**	**30.09.2022**	**30.06.2022**	**31.03.2022**	**31.12.2022**	**30.09.2022**	**30.06.2022**	**31.03.2022**
EU 1b	Number of data points used in the calculation of averages	12	12	12	12	12	12	12	12
High-quality liquid assets									
1	Total high-quality liquid assets (HQLA)	———	———	———	———	**5,588**	**5,784**	**5,837**	**5,961**
Cash - outflows									
2	Retail deposits and deposits from small business customers, of which:	982	810	752	741	217	185	171	167
3	Stable deposits	-	-	-	-	-	-	-	-
4	Less stable deposits	956	782	726	718	191	156	145	143
5	Unsecured wholesale funding	970	1,057	1,054	1,068	688	766	774	792
6	Operational deposits (all counterparties) and deposits in networks of cooperative banks	-	-	-	-	-	-	-	-
7	Non-operational deposits (all counterparties)	582	618	597	584	300	327	317	308
8	Unsecured debt	388	439	457	484	388	439	457	484
9	Secured wholesale funding	———	———	———	———	35	3	1	-
10	Additional requirements	470	470	460	453	470	470	460	453
11	Outflows related to derivative exposures and other collateral requirements	470	470	460	453	470	470	460	453
12	Outflows related to loss of funding on debt products	-	-	-	-	-	-	-	-
13	Credit and liquidity facilities	-	-	-	-	-	-	-	-
14	Other contractual funding obligations	32	38	36	41	14	20	18	24
15	Other contingent funding obligations	3,563	3,631	3,616	3,642	1,246	1,278	1,279	1,257
16	**Total cash outflows**	———	———	———	———	**2,670**	**2,722**	**2,703**	**2,693**
Cash - inflows									
17	Secured lending (e.g. reverse repos)	304	291	207	161	9	13	11	8
18	Inflows from fully performing exposures	385	352	353	417	241	223	221	253
19	Other cash inflows	89	68	60	62	89	68	60	62
EU-19a	(Difference between total weighted inflows and total weighted outflows arising from transactions in third countries where there are transfer restrictions or which are denominated in non-convertible currencies)	———	———	———	———	-	-	-	-
EU-19b	(Excess inflows from a related specialised credit institution)	———	———	———	———	-	-	-	-
20	**Total cash inflows**	778	711	620	640	**339**	**303**	**292**	**324**
EU-20a	Fully exempt inflows	-	-	-	-	-	-	-	-
EU-20b	Inflows subject to 90% cap	-	-	-	-	-	-	-	-
EU-20c	Inflows subject to 75% cap	778	711	620	640	339	303	292	324
Total adjusted value									
EU-21	**Liquidity buffer**	———	———	———	———	**5,588**	**5,784**	**5,837**	**5,961**
22	**Total net cash outflows**	———	———	———	———	**2,331**	**2,419**	**2,411**	**2,368**
23	**Liquidity coverage ratio (%)**	———	———	———	———	**254**	**250**	**254**	**270**

[1] These values and figures are calculated for each of the four calendar quarters preceding the disclosure date, simply using the average of the figures collected at the end of each month over the twelve months preceding the end of each quarter.

Net Stable Funding Ratio

The Net Stable Funding Ratio (NSFR) is the ratio of available stable funding (ASF) to required stable funding (RSF). The NSFR is stated as a percentage.

In contrast to the Liquidity Coverage Ratio (LCR), which is designed to ensure a liquidity buffer under stressed conditions over a period of 30 days, the Net Stable Funding Ratio (NSFR) serves to secure stable liquidity over the medium- and long term. The goal is to ensure a robust maturity structure of assets vs. liabilities. Determining factors are real estate and public infrastructure financing on the one hand, and corresponding funding activities on the other. No assets or liabilities are treated as being interdependent by pbb Group.

Regulatory provisions require a minimum LCR of 100%. The NSFR determined for pbb Group exceeds the regulatory minimum level, amounting to 111% as at 31 December 2022 (30 June 2022: 114%).

Quantitative information on the Net Stable Funding Ratio (NSFR)

Below, the tables EU LIQ2 pursuant to Article 451a (3) of the CRR show the quarter-end figures relevant for pbb Group's NSFR, broken down to each quarter of the relevant disclosure period 2022.

The fluctuations in the NSFR in the second half of the year 2022 primarily result from changes in the maturity structure of assets vs. liabilities, which were particularly driven by roll-down effects within funding.

EU LIQ2: Net Stable Funding Ratio (quarter-end values as at 31 December 2022)

Quarter-end figures as of 31.12.2022 All figures in € million, unless otherwise stated		a	b	c	d	e
		Unweighted value by residual maturity				Weighted value
		No maturity	< 6 months	6 months to < 1yr	≥ 1 year	
Available stable funding (ASF) Items						
1	Capital items and instruments	3,223	-	-	566	3,789
2	Own funds	3,223	-	-	566	3,789
3	Other capital instruments	——	-	-	-	-
4	Retail deposits	——	1,794	966	1,677	4,161
5	Stable deposits	——	-	-	-	-
6	Less stable deposits	——	1,794	966	1,677	4,161
7	Wholesale funding:	——	8,598	2,619	30,960	32,559
8	Operational deposits	——	-	-	-	-
9	Other wholesale funding	——	8,598	2,619	30,960	32,559
10	Interdependent liabilities	——	-	-	-	-
11	Other liabilities:	309	-	-	75	75
12	NSFR derivative liabilities	309	——	——	——	——
13	All other liabilities and capital instruments not included in the above categories	——	-	-	75	75
14	**Total available stable funding (ASF)**	——	——	——	——	**40,584**
Required stable funding (RSF) Items						
15	Total high-quality liquid assets (HQLA)	——	——	——	——	1,922
EU-15a	Assets encumbered for more than 12m in cover pool	——	-	-	24,632	20,937
16	Deposits held at other financial institutions for operational purposes	——	-	-	-	-
17	Performing loans and securities:	——	3,616	6,063	9,502	12,131
18	Performing securities financing transactions with financial customers collateralised by Level 1 HQLA subject to 0% haircut	——	1,904	2,338	-	1,494
19	Performing securities financing transactions with financial customer collateralised by other assets and loans and advances to financial institutions	——	88	169	391	484
20	Performing loans to non- financial corporate clients, loans to retail and small business customers, and loans to sovereigns, and PSEs, thereof:	——	1,354	3,093	7,440	9,677
21	With a risk weight of less than or equal to 35% under the Basel II Standardised Approach for credit risk	——	86	80	99	1,086
22	Performing residential mortgages, thereof:	——	245	429	1,189	-
23	With a risk weight of less than or equal to 35% under the Basel II Standardised Approach for credit risk	——	186	401	993	-
24	Other loans and securities that are not in default and do not qualify as HQLA, including exchange-traded equities and trade finance on-balance sheet products	——	24	34	1,196	1,082
25	Interdependent assets	——	-	-	-	-
26	Other assets:	-	2,413	-	169	969
27	Physical traded commodities	——	——	——	-	-
28	Assets posted as initial margin for derivative contracts and contributions to default funds of CCPs	——	-	-	-	-
29	NSFR derivative assets	——	-	-	-	-
30	NSFR derivative liabilities before deduction of variation margin posted	——	1,698	-	-	85
31	All other assets not included in the above categories	——	715	-	169	884
32	Off-balance sheet items	——	-	-	2,945	696
33	**Total RSF**	——	——	——	——	**36,655**
34	**Net stable funding ratio (%)**	——	——	——	——	**111**

EU LIQ2: Net Stable Funding Ratio (quarter-end values as at 30 September 2022)

Quarter-end figures as of 30.09.2022 All figures in € million, unless otherwise stated		a	b	c	d	e
		Unweighted value by residual maturity				**Weighted value**
		No maturity	**< 6 months**	**6 months to < 1yr**	**≥ 1 year**	
Available stable funding (ASF) Items						
1	Capital items and instruments	3,190	-	-	594	3,783
2	Own funds	3,190	-	-	594	3,783
3	Other capital instruments	——	-	-	-	-
4	Retail deposits	——	1,391	737	1,525	3,440
5	Stable deposits	——	-	-	-	-
6	Less stable deposits	——	1,391	736.813	1,525	3,440
7	Wholesale funding:	——	4,866	10,200	30,519	36,079
8	Operational deposits	——	-	-	-	-
9	Other wholesale funding	——	4,866	10,200	30,519	36,079
10	Interdependent liabilities	——	-	-	-	-
11	Other liabilities:	254	-	-	76	76
12	NSFR derivative liabilities	254	——	——	——	——
13	All other liabilities and capital instruments not included in the above categories	——	-	-	76	76
14	**Total available stable funding (ASF)**	——	——	——	——	**43,379**
Required stable funding (RSF) Items						
15	Total high-quality liquid assets (HQLA)	——	——	——	——	2,270
EU-15a	Assets encumbered for more than 12m in cover pool	——	-	-	24,420	20,757
16	Deposits held at other financial institutions for operational purposes	——	-	-	-	-
17	Performing loans and securities:	——	3,331	6,080	10,646	13,853
18	Performing securities financing transactions with financial customers collateralised by Level 1 HQLA subject to 0% haircut	——	693	3,635	-	2,511
19	Performing securities financing transactions with financial customer collateralised by other assets and loans and advances to financial institutions	——	88	101	393	453
20	Performing loans to non- financial corporate clients, loans to retail and small business customers, and loans to sovereigns, and PSEs, thereof:	——	2,363	1,950	8,483	10,513
21	With a risk weight of less than or equal to 35% under the Basel II Standardised Approach for credit risk	——	70	98	204	1,153
22	Performing residential mortgages, thereof:	——	155	367	1,368	-
23	With a risk weight of less than or equal to 35% under the Basel II Standardised Approach for credit risk	——	24	309	1,185	-
24	Other loans and securities that are not in default and do not qualify as HQLA, including exchange-traded equities and trade finance on-balance sheet products	——	32	27	402	377
25	Interdependent assets	——	-	-	-	-
26	Other assets:	-	2,334	-	154	812
27	Physical traded commodities	——	——	——	-	-
28	Assets posted as initial margin for derivative contracts and contributions to default funds of CCPs	——	-	-	-	-
29	NSFR derivative assets	——	-	-	-	-
30	NSFR derivative liabilities before deduction of variation margin posted	——	1,764	-	-	88
31	All other assets not included in the above categories	——	569	-	154	724
32	Off-balance sheet items	——	-	-	3,581	1,107
33	**Total RSF**	——	——	——	——	**38,798**
34	**Net stable funding ratio (%)**	——	——	——	——	**112**

EU LIQ2: Net Stable Funding Ratio (quarter-end values as at 30 June 2022)

		a	b	c	d	e
	Quarter-end figures as of 30.06.2022	**Unweighted value by residual maturity**				**Weighted value**
	All figures in € million, unless otherwise stated	**No maturity**	**< 6 months**	**6 months to < 1yr**	**≥ 1 year**	
Available stable funding (ASF) Items						
1	Capital items and instruments	3,208	-	-	565	3,773
2	Own funds	3,208	-	-	565	3,773
3	Other capital instruments	—	-	-	-	-
4	Retail deposits	—	1,376	554	1,464	3,201
5	Stable deposits	—	-	-	-	-
6	Less stable deposits	—	1,376	554	1,464	3,201
7	Wholesale funding:	—	3,182	10,991	31,136	37,242
8	Operational deposits	—	-	-	-	-
9	Other wholesale funding	—	3,182	10,991	31,136	37,242
10	Interdependent liabilities	—	-	-	-	-
11	Other liabilities:	177	-	-	77	77
12	NSFR derivative liabilities	177	—	—	—	—
13	All other liabilities and capital instruments not included in the above categories	—	-	-	77	77
14	**Total available stable funding (ASF)**	—	—	—	—	**44,293**
Required stable funding (RSF) Items						
15	Total high-quality liquid assets (HQLA)	—	—	—	—	3,217
EU-15a	Assets encumbered for more than 12m in cover pool	—	-	-	26,123	22,205
16	Deposits held at other financial institutions for operational purposes	—	-	-	-	-
17	Performing loans and securities:	—	2,714	3,387	9,671	11,525
18	Performing securities financing transactions with financial customers collateralised by Level 1 HQLA subject to 0% haircut	—	963	1,000	-	1,463
19	Performing securities financing transactions with financial customer collateralised by other assets and loans and advances to financial institutions	—	67	95	325	379
20	Performing loans to non- financial corporate clients, loans to retail and small business customers, and loans to sovereigns, and PSEs, thereof:	—	1,537	2,192	7,716	9,294
21	With a risk weight of less than or equal to 35% under the Basel II Standardised Approach for credit risk	—	75	102	186	965
22	Performing residential mortgages, thereof:	—	125	69	1,209	-
23	With a risk weight of less than or equal to 35% under the Basel II Standardised Approach for credit risk	—	70	34	1,084	-
24	Other loans and securities that are not in default and do not qualify as HQLA, including exchange-traded equities and trade finance on-balance sheet products	—	23	31	421	390
25	Interdependent assets	—	-	-	-	-
26	Other assets:	-	2,098	-	158	796
27	Physical traded commodities	—	—	—	-	-
28	Assets posted as initial margin for derivative contracts and contributions to default funds of CCPs	—	-	-	-	-
29	NSFR derivative assets	—	-	-	-	-
30	NSFR derivative liabilities before deduction of variation margin posted	—	1,537	-	-	77
31	All other assets not included in the above categories	—	562	-	158	719
32	Off-balance sheet items	—	-	-	3,424	1,144
33	**Total RSF**	—	—	—	—	**38,887**
34	**Net stable funding ratio (%)**	—	—	—	—	**114**

EU LIQ2: Net Stable Funding Ratio (quarter-end values as at 31 March 2022)

		a	b	c	d	e
Quarter-end figures as of 31.03.2022		**Unweighted value by residual maturity**				**Weighted value**
All figures in € million, unless otherwise stated		**No maturity**	**< 6 months**	**6 months to < 1yr**	**≥ 1 year**	
Available stable funding (ASF) Items						
1	Capital items and instruments	3,187	-	-	579	3,765
2	Own funds	3,187	-	-	579	3,765
3	Other capital instruments	——	-	-	-	-
4	Retail deposits	——	1,383	508	1,380	3,081
5	Stable deposits	——	-	-	-	-
6	Less stable deposits	——	1,383	508	1,380	3,081
7	Wholesale funding:	——	3,154	3,941	39,139	41,641
8	Operational deposits	——	-	-	-	-
9	Other wholesale funding	——	3,154	3,941	39,139	41,641
10	Interdependent liabilities	——	-	-	-	-
11	Other liabilities:	80,870	-	-	114	114
12	NSFR derivative liabilities	80,870	——	——	——	——
13	All other liabilities and capital instruments not included in the above categories	——	-	-	114	114
14	**Total available stable funding (ASF)**	——	——	——	——	**48,602**
Required stable funding (RSF) Items						
15	Total high-quality liquid assets (HQLA)	——	——	——	——	5,052
EU-15a	Assets encumbered for more than 12m in cover pool	——	-	-	25,960	22,066
16	Deposits held at other financial institutions for operational purposes	——	-	-	-	-
17	Performing loans and securities:	——	3,202	2,918	10,033	12,337
18	Performing securities financing transactions with financial customers collateralised by Level 1 HQLA subject to 0% haircut	——	1,043	-	-	1,043
19	Performing securities financing transactions with financial customer collateralised by other assets and loans and advances to financial institutions	——	74	70	294	336
20	Performing loans to non- financial corporate clients, loans to retail and small business customers, and loans to sovereigns, and PSEs, thereof:	——	1,291	2,553	7,189	8,997
21	With a risk weight of less than or equal to 35% under the Basel II Standardised Approach for credit risk	——	76	82	202	937
22	Performing residential mortgages, thereof:	——	57	264	1,177	-
23	With a risk weight of less than or equal to 35% under the Basel II Standardised Approach for credit risk	——	52	66	1,028	-
24	Other loans and securities that are not in default and do not qualify as HQLA, including exchange-traded equities and trade finance on-balance sheet products	——	738	32	1,373	1,961
25	Interdependent assets	——	-	-	-	-
26	Other assets:	-	1,904	-	374	814
27	Physical traded commodities	——	——	——	-	-
28	Assets posted as initial margin for derivative contracts and contributions to default funds of CCPs	——	-	-	-	-
29	NSFR derivative assets	——	-	-	-	-
30	NSFR derivative liabilities before deduction of variation margin posted	——	1,541	-	-	77
31	All other assets not included in the above categories	——	363	-	374	737
32	Off-balance sheet items	——	-	-	3,173	718
33	**Total RSF**	——	——	——	——	**40,986**
34	**Net stable funding ratio (%)**	——	——	——	——	**119**

Operational risk

The chapter "Operational risk" describes pbb Group's risk management targets and policies for operational risk pursuant to Article 435 (1) of the CRR, and provides information on operational risk management and the assessment of own funds requirements pursuant to Article 446 of the CRR. Disclosure pursuant to Article 446 (b) and (c) of the CRR and pursuant to Article 454 of the CRR is not relevant for pbb Group. pbb Group is currently using no advanced measurement approaches for calculating its own funds requirements, but instead adopts the Standardised Approach set out in Articles 317 et seqq. of the CRR.

Operational risk management

Definition

pbb defines operational risk in accordance with the CRR 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, outsourcing risk, model risk as well as risks associated with information and communication technologies (ICT systems risk).

Risk strategy

The top priority of pbb Group's operational risk management is to prevent operational risk events and to meet the defined risk appetite. Key cornerstones of this strategy are the early recognition, systematic recording and assessment of operational risk, taking measures for risk mitigation as well as implementing 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 pbb Group's risk management strategy as well as the risk appetite regarding operational risk.

Organisation

A consistent Group-wide framework is in place, governing responsibilities for managing operational risk based on the principle of the three lines of defence. In this context, heads of divisions – as risk owners –are responsible for managing operational risk, and for implementing risk-mitigating measures within the various business units (first line of defence). The second line of defence comprises: RMC with Operational Risk (all operational risks) and Validation & Model Risk Management (model risk) as well as Compliance (compliance risks, conduct risk), Finance (outsourcing risk, tax risks), Information Security in the Corporate Office (ICT Security Risk), Business Continuity Management (BCM) in IT, Legal (legal risk) and Communications (reputational risk). Within RMC, the Operational Risk unit – as the overarching Second Line of Defence for all operational risks – is responsible for uniform pro-cesses, instruments 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

Essential components of operational risk management include the recording and analysis of internal and external loss data, operational risk self-assessments (ORSA), scenario-based analysis and stress testing. A structured and central reporting system is used to inform Management Board and division heads, the Risk Committee and other supervisory bodies concerning risk events on a regular, timely and comprehensive basis. Reports are prepared both ad-hoc (where material risk events are escalated) as well as on a monthly basis (Group Risk Report), on a quarterly (Key Risk Indicator Report) or annual (Annual

OpRisk Report) basis. Operational risk reporting encompasses relevant loss events, top risk issues, development of risk indicators, as well as the results from ORSA and scenario analyses.

Management of the ICT systems risk as well as outsourcing risk is fully integrated into operational risk management, and thus into pbb'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. Key elements of outsourcing risk management include the risk assessment of all outsourcing relationships (which is updated at least once a year), ongoing coverage by the Accountable Person for outsourcing, monitoring using suitable key risk indicators, and quarterly reporting to the Outsourcing Committee.

pbb Group uses models to quantify risks within the individual risk types, and to measure the fair value of financial instruments, which leads to model risks being potentially incurred as a result of models which are incorrectly designed, implemented, or applied. To ensure that model risks are as low as possible, pbb has established a framework for model risk management.

Management of legal risk is mainly aimed 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 comprehensive, forward-looking business- and solution-oriented 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. 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 Finance department as to whether provisions for pending legal cases have to be recognised. Moreover, the OpRisk loss database captures losses from – and provisions for – 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.

ESG risks included in operational risk are also integrated into operational risk management.

Risk quantification

Please refer to the chapter "Economic capital and risk-bearing capacity (ICAAP)" for further details on the quantification of operational risk including legal risks as well as calculation results of the economic capital for operational risk.

The regulatory own funds requirement for operational risk, which is calculated annually at year-end, amounted to € 77 million as at 31 December 2022 (31 December 2021: € 74 million) according to the Standardised Approach set out in Articles 317 et seqq. of the CRR, and is described in detail in the following chapter ("Own funds requirement for operational risk").

Opportunities

pbb Group aims to reduce potential operational risk to the extent possible, through continuous development of its operational risk framework and the ongoing optimisation of processes.

Operational risk profile

pbb Group suffered a financial loss of € 0.6 million from operational risks during 2022 (2021: € 0.3 million). Overall, pbb assesses its operational risk profile as stable.

Own funds requirement for operational risk

To comply with the own funds requirements pursuant to the CRR, operational risk must be backed with own funds. pbb Group determines the own funds requirement for operational risk using the Standardised Approach in accordance with Articles 317 et seqq. of the CRR.

EU OR1: Operational risk own funds requirements and risk-weighted exposure amounts

		a	b	c	d	e
		Relevant indicator [1]			Own funds requirements	Risk weighted exposure amount
		Year-3	Year-2	Last year		
1	Banking activities subject to basic indicator approach (BIA)	-	-	-	-	-
2	Banking activities subject to standardised (SA) / alternative standardised (ASA) approaches	484	514	522	77	959
3	Subject to SA	484	514	522		
4	Subject to ASA	-	-	-		
5	Banking activities subject to advanced measurement approaches AMA	-	-	-	-	-

[1] After confirmed financial statements and appropriation of profits.

For each business line, the relevant indicator is determined for the last three financial years in accordance with Article 316 of the CRR. The corresponding beta factors per business line comply with the values defined in Article 317 of the CRR. pbb Group's business lines consist only of commercial and retail banking, with commercial banking being the decisive contributor to the relevant indicator. The own funds requirement for operational risk is based on the sum of the three-year averages of the relevant indicator per business line, weighted with the corresponding beta factor.

The regulatory own funds requirement, which is calculated annually at year-end, amounted to € 77 million at the disclosure date (31 December 2021: € 74 million).

pbb Group is currently not using any advanced measurement approaches to determine its own funds requirements pursuant to Articles 321-324 of the CRR. Thus, disclosure pursuant to Article 446 (b) and (c) of the CRR and pursuant to Article 454 of the CRR is not relevant for pbb Group.

Environmental, social and governance (ESG) risk

This chapter provides information on environmental, social and governance risks (ESG risks) in accordance with Article 449a of the CRR in conjunction with Article 435 of the CRR. In accordance with Article 499a of the CRR, large, capital markets-oriented institutions shall disclose information on ESG risks, including qualitative information on handling ESG risks (business model and strategy, corporate governance and management, risk management) and quantitative information on climate-related and environmental risks, physical risks, and above all transition risks arising from the adjustment process towards a lower-carbon and more environmentally sustainable economy. As stipulated in Commission Implementing Regulation (EU) 2022/2453, the scope of quantitative ESG disclosure obligations will be gradually increased up until 31 December 2024, with qualitative and quantitative data such as disclosures on the Green Asset Ratio (GAR) being added from 31 December 2023 onwards.

ESG risk management

Definition

In accordance with the EBA Report on Management and Supervision of ESG Risks for Credit Institutions and Investment Firms (EBA/REP/2021/18) and the ECB Guide on Climate-related and Environmental Risks, pbb Group defines environmental, social and governance (ESG) risk as the risk of adverse financial effects on the institution resulting from the current or expected impact of ESG factors on the Group's counterparties, or on its invested assets. ESG factors are environmental, social or governance aspects that could have a positive or negative impact on the financial performance or solvency of a company, sovereign state, or an individual. ESG risk also encompasses negative financial, economic and social impacts that could arise from the activities of the institution itself.

ESG factors can have adverse financial impacts via a large number of risk drivers. The term "risk drivers" refers to measures or circumstances as a result of which ESG factors can incur negative financial impacts. The causal chains that explain how these risk drivers affect institutions via their counterparties and invested assets are referred to as transmission channels.

ESG risks are a sub-category of non-financial risks. This classification reflects the impact of ESG factors that have traditionally been considered non-financial, such as greenhouse gas emissions, environmental footprint, human rights and equal rights, as well as those factors that have traditionally been considered financial, such as profit, capital and costs.

Climate-related and environmental risks

pbb Group uses the concept of "environmental risks" as an umbrella term for both climate-related and environmental risks. Climate-related and environmental risks refer to risks of losses and negative impacts due to climate change and the destruction of the environment. Climate change is generally understood as being the change to the global climate caused by humans. Consequences of climate change include global warming (higher annual average temperature) as well as increased climate variability and extreme weather. The general understanding is that climate-related and environmental risks comprise the following two main risk drivers:

- Physical risk: Physical risk refers to the financial impact of a changing climate. These impacts include more frequent extreme weather events and gradual changes in the climate, as well as environmental destruction. A physical risk is considered to be acute if it materialises due to extreme events, such as drought, flooding or storms. If it is the result of gradual changes, it is classified as chronic. Impacts can occur directly (e.g. as

physical loss or damage or in the form of lower productivity) or indirectly, e.g. as a result of subsequent events such as supply chain disruptions.

- Transition risk: Transition risk describes financial losses that can be incurred, directly or indirectly, as a result of the adjustment process towards a lower-carbon and more environmentally sustainable economy. This risk could materialise, for example, due to political measures adopted at very short notice to protect the climate and the environment, due to technical progress or due to changes in market sentiment and preferences. Environmental risks refer not only to climate action and climate change adaptation, but also to the protection and restoration of biodiversity and ecosystems.

Social risks

Social risks are defined as the risks of a negative financial impact on the institution resulting from current or future effects of social factors on its counterparties or invested assets. Negative effects can also result from social factors associated with the institution's own activities.

Governance risks

Governance risks are defined as the risks of a negative financial impact on the institution resulting from current or future effects of governance factors on its counterparties or invested assets. Negative effects can also result from governance factors associated with the institution's own activities.

Identifying and assessing materiality

Materiality assessment

In order to allow for adequate consideration of ESG risks in the Bank's risk management processes, an identification and assessment process for ESG risk drivers has been established as a firm component of the annual risk inventory. Identifying and describing the possible transmission channels of potential ESG risk factors revealed the extent to which

- a company's economic and financial activities are affected (financial materiality / outside-in),
- or how a company's activities impact ESG factors (environmental and social materiality / inside-out)

and in what timeframe. The distinction between these two perspectives results from the application of the principle of "double materiality" and is to be applied for the assessment of materiality.

Overall, risk factors have been identified for environmental, social and governance aspects. The impact of the potential ESG risk drivers identified on the individual risk types is examined and assessed as the final step.

All relevant experts are involved in the individual steps of the assessment process, in particular those with lending and property valuation expertise, experts from HR, Legal and Compliance, as well as from Risk Management & Control.

Identification of material risk factors

The process for identifying material ESG risk factors consists of four consecutive steps and is described below.

> Step 1 “Categorised list of risk factors”:

The process starts with the list of possible risk factors. Both external sources (in particular the EU taxonomy, the ECB Guide on Climate-related and Environmental Risks, the EBA Report on Management and Supervision of ESG Risks, and the BaFin Guidance Notice on Dealing with Sustainability Risks) and internal sources (non-financial materiality analysis, expert opinions) were used to draw up the initial list.

> Step 2 “Transmission channels, impacts and time horizon”:

The next step involves analysing and recording possible transmission channels. One typical example of the transmission channel of a physical risk would be a flood resulting in damage to properties financed by the Bank’s Real Estate Finance (REF) segment. Borrowers incur repair costs, rental losses, and business disruptions as a result. Overall, the net operating income of borrowers is reduced, their credit quality deteriorates and the value of properties serving as collateral is impaired. Some of these effects cannot be cushioned, even with good insurance coverage. For example, the LGD could increase due to a fall in property value, e.g. in the event that a whole region is affected by environmental or climate events, even if the property itself was not actually damaged. Furthermore, insurers themselves are subject to uncertainty, for example bankruptcy of the insurance or re-insurance company, waves of lawsuits, delays in disbursements, etc.

When determining the impact channels, effects are conceivable from a lower credit rating, reduced collateral value or increased risk provisioning on the institution (for all segments), among other things.

Once the possible transmission channels of the individual risk factors are known, it becomes evident to which extent a borrower’s economic and financial activities are affected (financial materiality / outside-in), or how a company’s activities impact ESG factors (environmental and social materiality / inside-out). ESG factors can thus be quantified, implemented mitigating measures described, and the time horizon of possible impacts identified and recorded.

> Step 3 “Analysis and assessment of impact in terms of materiality”:

Based on the analysis of the transmission channels and possible effects, the latter are analysed and assessed. The aim is to identify whether the ESG risk factor being analysed has an impact on the parameters and benchmarks that are relevant to the institution (e.g. credit quality, property value, market share) and, as a result, on the Bank’s risk profile. This determines the financial materiality. The process also looks at whether the risk factor is material from an environmental and social perspective.

> Step 4 “Relevance for the other risk types”:

The analysis of the transmission channels, as well as the relevant parameters and benchmarks, reveals which risk types are impacted. Counterparty credit risk, market risk, business and strategic risk, liquidity and funding risk, and operational risk, including reputational risk, are often impacted.

The results of the risk inventory with regard to ESG materiality are recorded in a separate ESG assessment register and serve as the basis for the development of the management strategy, including the definition of the ESG risk appetite as part of the risk strategy, and as the starting point for scenario analyses and stress tests.

Materiality assessment results

pbb Group has summarised the physical and transition climate-related and environmental risks mentioned below, along with social and governance factors, and indicated the time horizon, to assess the materiality of ESG factors.

Type	Material	Non-material
Physical risk: Climate-related risk factors	**Acute:** floods, heavy precipitation, storms (including cyclones, hurricanes, and typhoons), tornados Time horizon: In the long term: heavy precipitation In the short and medium term: all the others Only Public Sector & Corporates (PS&C): forest fires, droughts, heat waves, landslides Time horizon: In the long term: droughts In the short and medium term: all the other factors **Chronic:** -	**Acute:** glacial lake outburst floods, avalanches, submergence of land, cold snaps / frost **Chronic:** changing wind patterns, coastal erosion, soil degradation, soil erosion, solifluction, changes in precipitation, changing precipitation patterns and types, rising sea levels, water resources stress, changes in temperature, heat stress, temperature fluctuations, permafrost thaw, precipitation and/or hydrological variability, ocean acidification, saline intrusion
Physical risk: Environmental factors	Pollution/contamination (only Real Estate Finance, REF) Time horizon: In the short and medium term Earthquakes Time horizon: In the long term volcanic eruptions (only Public Sector & Corporates, PS&C) Time horizon: short- and medium term	Loss of biodiversity / changes in the use of land / exploitation of organisms / invasive non-native species / habitat destruction, production of hazardous waste / re-usability / recyclability, water consumption intensity of buildings or other objects financed, tsunamis
Transition risk factors	Energy efficiency, carbon footprint (scope 1, 2, 3 emissions) Time horizon: short- and medium term New sustainability-related and environmental regulations / carbon pricing (only Real Estate Finance), market sentiment (only Real Estate Finance), Time horizon: long-term for all factors	-
Social factors	-	Human and labour rights, business partner / client relationships, human rights of employees, social commitment, accessibility, client orientation, diversity and equality
Governance factors	Unfair communication, insufficient client data security and data protection (also material from an environmental and social perspective), integrity shortcomings (money laundering, terrorist financing, etc.), external counterparty ESG risks, insufficient incorporation of external (ES)G risks in the business strategy/processes, insufficient incorporation of external (ES)G risks in internal governance, insufficient incorporation of external (ES)G risks in the risk management framework, insufficient compliance with disclosure of information rules and practices, and insufficient internal corporate governance regarding own ESG/compliance risks Time horizon: short- and medium term for all factors	-

Biodiversity and environmental risks

To assess biodiversity and environmental risks, we conducted a quantitative evaluation of the public environmental and biodiversity scores that are suitable for the entire portfolio for the clients' underlying economic sectors. For the Real Estate Finance segment, satellite data on the type of land coverage at the locations of the properties financed in Europe were used to evaluate a potential contribution to the loss of biodiversity through changes in the use of land. All analyses were then assessed by experts.

“Financially material” risk factors

All risk factors identified as material were classified as “financially material” (outside-in). Some risk factors – pollution and contamination, property energy efficiency, carbon footprint, general market sentiment, unfair communication, insufficient client data security and data protection, insufficient integrity (money laundering, terrorist financing, etc.) – were also recognised as being environmentally and socially material for the inside-out perspective.

To determine the effects of ESG risk factors on the traditional risk types such as credit risk (counterparty credit risk), operational risk and reputational risk, stress tests and scenario analyses were carried out. To determine the influence of ESG factors on operational and reputational risk, scenario analyses were conducted, including in relation to damage to the Group’s own physical assets and infrastructure by extreme weather events, potential accusations of greenwashing, and unfavourable public perception of the Bank relating to sustainability issues. Furthermore, pbb Group considered ESG risk factors in its monitoring and reporting.

Impact of ESG risk factors on credit risk

Physical and transition risk factors assessed as material and the “external ESG risks of counterparties” governance factor affect credit risk.

Stress tests and scenario analyses were carried out to determine the effects of ESG risk factors on credit risk. In particular, the effects of relevant climate threats and transition factors on credit risk were determined using a macroeconomic stress test.

Impact of ESG risk factors on market risk

ESG risk is classified as non-material within market risk. There are currently no indications of any direct sustainability risks to pbb Group’s market risk position.

Impact of ESG risk factors on liquidity and funding risk

ESG risk is classified as non-material in the ILAAP (Internal Liquidity Adequacy Assessment Process). There are currently no indications of any direct explicit ESG or sustainability risks to pbb’s liquidity position. All material ESG risk aspects potentially relevant for liquidity risk have already been considered in the known prudential types of risk, such as credit and market risk.

Impact of ESG risk factors on operational risk, including reputational risk and legal/liability risks

A bank’s business operations can generally be disrupted by damage to its property, by outages or failures of locations and data centres (infrastructure failure) due to extreme weather events (acute climate threats), and by environmental factors such as earthquakes or volcanic eruptions.

To determine the influence of ESG factors on operational and reputational risk, scenario analyses were conducted, including with regard to damage to the Group’s own physical assets and infrastructure by extreme weather events, potential accusations of greenwashing, and unfavourable public perception of the Bank relating to sustainability issues. Based on the quantitative and qualitative analyses concerning acute and chronic climate threats and environmental threats, the acute climate threats are classified as relevant for operational risk and included in the operational risk determination process. Individual environmental factors may also impact reputational risk.

As a mere lender, pbb Group is not subject to relevant original liability risks vis-à-vis third parties in the Real Estate Finance (REF) and Public Investment Finance (PIF) segments due to climate threats or environmental factors. The same applies to potential credit default risks as a result of potential liability risks of REF clients vis-à-vis third parties in connection with climate threats or due to environmental factors. The Public Investment Finance segment is not subject to additional credit default risks due to potential liability risks of clients vis-à-vis third parties in connection with climate threats or due to environmental factors.

Environmental risk factors such as pollution, contamination, property energy efficiency, carbon footprint (scope 1, 2, 3 emissions) and market sentiment could potentially impact our clients' or the public's perception of pbb and thus the Bank's reputation, which is why they are considered relevant to reputational risk.

Governance factors are also relevant to operational risk and reputational risk. Potential legal/liability risks also exist for the following governance factors: "fair communication, client data security and data protection, insufficient integrity (money laundering, terrorist financing, etc.)", "insufficient compliance with disclosure of information rules and practices", and "insufficient internal corporate governance regarding own ESG/compliance risks".

pbb Group has laid down ethical and moral standards in its Code of Conduct to mitigate reputational risk and does not support business practices that could harm its reputation or give rise to the suspicion that the client is acting unlawfully, or which violate pbb Group's ethical and moral standards. The Group dissociates itself from any unlawful or other activities that might damage the Bank's reputation, and excludes the following activities, amongst others:

> Money laundering
> Terrorist financing
> Drug trafficking
> Illegal weapons trade
> Violation of human rights
> Human trafficking
> Smuggling of goods
> Bribery of government officials or other officials
> Granting and/or accepting undue benefits
> Tax offences
> Illegal or unauthorised use of property, including land ownership
> Market abuse, such as market manipulation or insider trading
> All forms of organised crime
> Environmental pollution, including excessive emissions, illegal waste disposal as well as any type of falsification of documents associated therewith
> Illegal use of labour, including forced labour and child labour.

Impact of ESG risk factors on business and strategic risk

ESG risk drivers impact business and strategic risk by incurring negative deviations from planned income and expenses. Strategic ESG decisions, incorrect ESG planning assumptions or unexpected changes to the external ESG environment can also incur risks.

All three subsections of business and strategic risk include ESG factors with a material role:

> Strategic risk includes the risk of poor management decisions on ESG aspects. Collateral performance is a critical risk driver in the REF segment – for example, the energy efficiency of buildings gives rise to transition risk.

> Planning risk results from erroneous planning assumptions regarding ESG components within operative planning. This planning risk can be examined as to its materiality within a quantitative scenario, by taking into account the scheduled energy efficiency of collateral in new business. Assumptions made during the planning process, e.g. on the minimum energy efficiency requirements, could prove incorrect or insufficiently conservative. They bear planning risk, thereby incurring margin pressure on buildings that are especially energy-efficient.

Once again, a realistic view would suggest that margins will deviate in such a way that this deviation is classified as material.

- Business environmental risk includes changing general market sentiment towards more or less sustainability, and the risk of structural rifts and fundamental changes to the Bank's environment from an ESG perspective, reflecting impacts on the new business margin via a similar transmission channel as strategic risk, which is why an equivalent materiality/scenario assessment applies.

pbb Group thus classifies the effect of ESG risks on business and strategic risk as material in both the economic (ECap ≥ € 1 million) and normative ICAAP perspective (potential impact can be seen upon the regulatory capital ratios, the MREL, the leverage ratio and/or the large exposure threshold).

Strategy

pbb Group aims to consider sustainability aspects within all its business activities, exploit ESG opportunities, and minimise the risk of negative consequences due to ESG risks. pbb Group wishes to make an active contribution to the 1.5 degree target of the Paris Climate Agreement and has defined sustainable finance as being a central pillar of its ESG strategy, which promotes sustainability in the Bank's core lending and funding business. To this end, pbb has not only developed the Green Loan and Green Bond Frameworks, including respective products, but has also successfully placed them on the market.

From a risk perspective, the focus is clearly on the options for exerting influence at all stages in the commercial real estate financing value chain, starting with fundraising and ranging from deal onboarding, loan extension, and the entire loan coverage process to repayment or the realisation of collateral. Close links between Sales, Credit and Risk Management, plus the real estate experts, ensure that the principle of environmental sustainability of the properties to be financed is applied across pbb Group; it is an integral part of the lending decision process.

The analysis regarding sustainability within the meaning of the EU taxonomy alignment requirements (i.e. substantial contribution thus far to the "climate change mitigation" environmental objective; the "do no significant harm" principle regarding other environmental objectives) or rather the analysis of additional environmental criteria defined in line with the pbb Green Scoring Model with its three sets of criteria (energy efficiency, green building certificates, and further sustainability criteria, such as use of green electricity) has been established as a firm component. In addition, pbb uses a proprietary decarbonisation tool based on the CRREM tool for the risk and opportunity analysis in the lending process, concentrating on the possibility of transforming collateral into a sustainable building; the potential of such a transformation is also discussed with clients.

To systematically retrieve sustainability information, pbb collected data for new and existing business in the larger part of the loan portfolio. The response rate by year-end 2022 was 56%; further data will be retrieved in 2023. pbb Group is thus increasingly gaining a better overview of the sustainability of its credit portfolio and associated risks, which can then be used to manage ESG risks over the long term.

Based on the insights gained from the materiality analysis and risk inventory, the impact of climate risks for pbb Group was analysed using various scenarios.

- In order to systematically examine the potential vulnerability of pbb's portfolio and capital position with regard to medium-term transition climate-related risks, a corresponding transition scenario was defined, fully calculated and analysed within the normative and economic ICAAP perspectives, and then firmly integrated into the stress test programme.
- To expand the focus to include potential events that could occur over a longer horizon, a long-term transition scenario was introduced that looks at the period up to 2050 under different climate transition paths.
- The impact of acute physical risks was analysed in a dedicated scenario.

The medium-term transition climate scenario is part of the ICAAP management approaches and the internal definition of adequate capitalisation. Both other scenarios were analysed and discussed by the Management Board.

ESG factors are integrated in ILAAP and are regularly examined and evaluated there. In addition to a qualitative assessment, potential effects on pbb's liquidity position are quantified as part of the short-term transition climate risk scenario.

Overall, pbb Group aims to sustainably place ESG at the centre of its activities by further integrating ESG into its processes, product range and corporate culture, which also includes, apart from the governance and project structure implemented within pbb, the issuance of green bonds along with green loans established as a new product. pbb aims to reinforce market perception of the Bank as a proactive force in the ESG space. Regarding the Products & Portfolio field of implementation, pbb aims to expand and reinforce its positioning as a transformation partner for its clients, and to achieve its strategic objective of sustainable funding and financing. Both are addressed by the use and further development of ESG products and active management using ESG-related KPIs.

Sustainable development targets

pbb Group is also expressly committed to the Paris Climate Agreement – whose overall goal is to limit global warming to well below 2 degrees Celsius, preferably to 1.5 degrees (compared to pre-industrial levels) – and strives to align its loan portfolios with it. To this end, pbb has initially set itself a fundamental long-term climate target to achieve alignment to the 1.5-degree target by 2050. A corresponding climate management approach will be established on this basis, going forward.

pbb has defined specific indicators and targets for an active and strategic management of its assets. By 2026, pbb is planning that assets eligible for green loan financing will account for 30% of the REF portfolio (based on the requirements set out in pbb's Green Loan Framework). Other management indicators are the new business volumes generated with green loans and green CapEx/developments. The latter are geared towards leveraging the potential of financing the transformation of non-green to green assets in new and existing business; the targets and management approach are currently being developed.

pbb is also committed to the 17 UN Sustainable Development Goals (SDGs), three of which were identified as being particularly relevant:

- Affordable and clean energy (SDG 7) – providing funding to increase the energy efficiency of buildings
- Sustainable cities and communities (SDG 11) – providing funding for new housing, being one of the leading European specialist banks for real estate finance
- Climate action (SDG 13) – actively contributing to the decarbonisation of the real estate sector and reducing pbb's own environmental footprint.

In addition, pbb has been a participant of the UN Global Compact since February 2022, committing itself to the ten universal principles in the areas of human rights, labour, environmental protection and anti-corruption. As part of this commitment, pbb published its first Communication of Progress in April 2022.

pbb Group is also constantly considering other external voluntary commitments.

Governance risks related to counterparties

Aside from actively managing the existing portfolio, pbb Group also wants to learn more about the clients' perspective. To this end, pbb has analysed – after a first round of client talks – how its clients perceive ESG in general, the transformation pressure related to it, and the resulting business opportunities. This has also helped to make pbb's existing ESG expertise and products more visible. Based on these first client talks, pbb intends to establish a systematic client dialogue over the long term, including suitable exchange formats to enhance the Bank's presence, e.g. an ESG network, and to gain additional insights into clients' needs.

Green Bond and Green Loan Framework

To take sustainability aspects more into account when granting loans, pbb has been systematically gathering data on various sustainability criteria pertaining to its financed properties since May 2020. These criteria include energy consumption, Green Building certificates, energy performance certificates and additional sustainability criteria. In the context of granting individual loans, pbb has developed internal analytical processes and analytical tools to identify ESG risks.

Green Bond Framework

On this basis, pbb has established a Green Bond Framework and aims to increasingly raise funding via green bonds. In January 2021, pbb successfully placed its first Green Bond on the market, and has placed further issues since then. By issuing green bonds, pbb Group enables investors to make targeted investments in sustainable capital market products.

With an outstanding volume of around € 2.9 billion as at 31 December 2022, pbb is among the most active issuers of green bonds.

Green Loan Framework

In addition, pbb Group has developed a Green Loan Framework in accordance with the LMA Green Loan Principles and taking the EU taxonomy into account for the issuance of green loans.

pbb has been offering green loans as a new credit product since the fourth quarter of 2021. This includes loans to finance existing green buildings, development financing for green buildings as well as transformation financing for existing properties to convert them into green buildings. Since there is as yet no established standard for green loans on the market, and most instruments are aligned with the LMA Green Loan Principles, pbb has established its own Green Loan Framework based on two elements: a standalone sustainability scoring model or the requirements set out in the EU taxonomy (i.e. substantial contribution thus far to the “climate change mitigation ” environmental objectives; the “do no significant harm” principle regarding other environmental objectives). The pbb scoring model allows for the assessment of real estate using specific criteria; from a defined score upwards, real estate qualifies for green lending. As an alternative, pbb grants green loans to buildings compliant with the requirements of the EU taxonomy set out above.

The volume of green loans which pbb has issued since the fourth quarter of 2021 rose to around € 1.4 billion by year-end 2022, with issuance during the 2022 financial year amounting to € 1.2 billion. By 2026, pbb is planning that assets eligible for green loan financing will account for 30% of the REF portfolio (based on the requirements set out in pbb’s Green Loan Framework).

pbb’s scoring model

pbb’s scoring model takes three dimensions into account: the energy efficiency of a building, building certifications, and further sustainability factors such as soil surface sealing, the type of heating, and the use of green electricity. The factors of this category are based on the “do no significant harm” principle embedded in the EU taxonomy.

pbb deliberately includes more than just the energy efficiency of a building as a prerequisite for green loan-eligibility. Low energy consumption is just one of various requirements. Green building certificates considered include BNB, BREEAM, DGNB, HQE and LEED.

Project selection within pbb Group

Assets, traditional investment financings, financing of modernisation / renovation projects for existing buildings, and construction financings can qualify for pbb's green loan financing or funding.

When assessing whether a project/building is eligible for green financing, pbb also takes into account the most recent publications issued by the EU Technical Expert Group on Sustainable Finance and expert opinions for individual buildings within the Bank's due diligence process.

Projects/buildings whose primary use is the production of weapons, pesticides, nuclear energy, fossil fuels, pornography or sex work are generally not eligible for pbb's green financing. The same applies to buildings with a high concentration of tenants whose activities have an unacceptable environmental impact, and to projects/buildings that fail to meet the criteria regarding avoidance of significant harm set out in the EU Taxonomy Regulation.

Once a project/building is deemed eligible for green financing by pbb, the Bank's Credit Committee evaluates potential approval for the project/building based on a dedicated green lending process, taking into account all other parameters relevant to pbb's credit risk within the scope of the respective loan.

Organisation

pbb Group has been systematically integrating ESG into its governance structures. An ESG Committee, which deals with ESG aspects and ESG risks throughout pbb Group, was established in July 2021. The ESG Committee comprises the entire Management Board and the Heads of Communications, Compliance, Human Resources, Information Technology, Property Analysis & Valuation, Credit Risk Management, Treasury, Risk Management & Control, Loan Markets, Sales Germany, plus the members of the ESG Programme Management team as well as project managers of the various ESG sub-project streams Environment (E), E(SG) Risks, Governance (G), and Social (S) and of the ESG Communications and ESG Disclosure sub-project streams. The ESG Committee is primarily responsible for developing an ESG business and risk strategy, and for monitoring the corresponding implementation measures within pbb Group. The committee develops ESG targets, and the measures required to achieve them.

Risk management organisation

<table>
<tr><td colspan="9">Risk Management and Liquidity Strategy Committee (RLA) of the Supervisory Board</td></tr>
<tr><td colspan="9">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><td rowspan="2">Environmental, Social and Governance (ESG) Committee</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.

pbb set up an ESG programme (ESG@pbb) in 2021, which covers all three ESG dimensions. This programme addresses all ESG topics relevant to pbb – strategy, environment, social aspects and good governance, as well as ESG risk, data management, communication and reporting – and is based on a governance structure with clearly defined responsibilities and committees (ESG Committee and Green Financing Committee).

ESG Programme Management

The Management Board set up an ESG Programme Management team in July 2021, which is responsible for supporting the ESG Committee and preparing resolutions to be passed by the ESG Committee. Progress in the programme is reported to the Supervisory Board twice a year. The remit of the ESG programme management team includes, in particular:

- the central, ongoing, holistic identification of all ESG topics, as well as the statutory/regulatory requirements and the expectations of investors, clients and other stakeholders that emerge on the market or are consistent with best practice,
- the central overall coordination, across all divisions, of pbb's ESG activities and measures as adopted by the ESG Committee,
- defining, developing and refining a Group-wide ESG strategy, taking ESG risks, opportunities and fundamental regulatory/statutory requirements into account,
- central management of the development of an overarching ESG data pool, and
- the central coordination of regulatory enquiries on ESG issues (e.g. submitted by the ECB) and corresponding reports.

pbb Group is concentrating on ESG operationalisation, i.e. the creation of an integrated organisational ESG model, thereby ensuring that ESG aspects are advanced in the long term and independently of specific projects. This model focuses on synergies which emerge when working on ESG topics, the smooth integration of ESG-related tasks into standard processes and the acquisition of specific ESG know-how in the various departments. In this context, a long-term ESG governance objective has been developed, which is being implemented step by step.

As part of the ESG operationalisation process, pbb will continue passing on ESG topics already developed to the relevant divisions for ongoing processing, and integrate them into standard processes. This saves programme resources, or frees them up for dealing with newly arising change topics. In addition, pbb will establish an ESG Office, which is to manage cross-divisional ESG tasks and coordinate divisional tasks going forward. Its responsibilities will include cross-divisional content-related questions and committee support, but also the long-term monitoring of ESG issues and setting up new project structures for newly arising change topics.

Risk reporting

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

Risk quantification

ESG risk as a risk driver of traditional risk types is a firm component of the annual risk inventory and integrated into the general risk quantification process. 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 pbb Group's capital and liquidity resources, and scans them as to potential risk concentrations. To the extent possible, risks are quantified using applicable risk models or other methods. To adequately monitor ESG risks, pbb is working on integrating the various ESG risk factors into the relevant types of risk, including monitoring, reporting and quantification. The Bank is also working on refining climate-specific stress tests and scenario analyses.

Risk management and monitoring

pbb Group aims to consider sustainability aspects within all its business activities, exploit ESG opportunities, and minimise the risk of negative consequences due to ESG risks. ESG risks are managed in line with the Three Lines of Defence ("3LoD") principle, whereby risk owners in the various divisions which are particularly close to clients or the general public (Sales, PAV, CRM, Communications, Finance, Treasury, and the Corporate Office) form the first line of defence. The second line of defence comprises Risk Management & Control and Compliance, together with Legal, Human Resources, and IT. Group Internal Audit (GIA) is the third line of defence.

Outside-in perspective

To monitor the various aspects of ESG risk, pbb Group has enhanced its monitoring of non-financial indicators, defining a strategic ESG KPI set in the process, which comprises nine environmental indicators and two social indicators, all of which are associated with the sustainable ecological responsibility pbb Group is aiming for.

Said indicators mainly aim to create transparency on the status quo, establishment and refinement of an internal reporting system, along with related, targeted internal ESG management.

pbb Group has not established specific targets for the defined KPIs or the details of a corresponding management set-up as of today. pbb Group aims to perform an annual evaluation of the KPI set and defined targets, deriving a reporting timeline with a permanent focus. ICAAP integration and a corresponding limitation are scheduled for 2023/2024.

Monitoring and management of external environmental risk currently focuses on the aspects of avoidance of (and adaptation to) climate change associated with the properties pbb Group finances. Both physical and transition risks are taken into account. Corresponding monitoring of both aspects is currently being tested as part of a transition phase in 2022.

The monitoring and management of external social and governance risks currently focuses primarily on governance indicators, such as the prevention of money laundering and terrorist financing, compliance with financial sanctions and embargoes, and the prevention of fraud and other criminal acts, particularly the prevention of corruption. pbb Group has put appropriate safeguards in place in this respect and, in addition to a Compliance Policy and the Code of Conduct, has issued various other internal guide-lines, instructions and process descriptions. Compliance is responsible for ensuring due and proper adherence to these requirements. As an investment service provider, pbb Group also observes a whole range of regulations and requirements, in particular to ensure appropriate client/investor protection and, consequently, also to safeguard its own reputation.

Inside-out perspective

Specific risk indicators have been defined and assigned to the individual components for monitoring the various aspects of the Group's own ESG risk. Based on a traffic light system, amber and red thresholds have been defined for these risk indicators and form the basis for compliance with the Bank's own targets. 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 footprint, whilst indicators on diversity, operational safety, and personnel development have been established to monitor the social risk. "Governance risk" is monitored using 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.

Coordination of the remuneration policy

pbb Group promotes practices related to its climate-related and environmental as well as social risk approach in the context of variable remuneration, by also linking variable remuneration to the achievement of the respective ESG targets.

In line with the requirements set out in the remuneration strategy, pbb Group annually determines overarching strategic priorities for variable remuneration which are closely linked to the material institutional targets and the plans derived from the business and risk strategy. The Management Board also establishes overall corporate strategic priorities from the environmental, social and governance (ESG) field. This particularly serves to promote practices related to pbb's climate and environmental as well as social risk approach. The divisional targets are based on the Corporate Strategic Priorities and communicated to the relevant staff at the beginning of the year. At the individual level, every employee is provided with an annual target agreement comprising quantitative and qualitative targets for the current financial year. The individual targets are aligned with the divisional targets, and thus fundamentally also with the Corporate Strategic Priorities.

The 2022 ESG targets relevant to environmental and climate issues focused on the one hand on the alignment of pbb Group's business and risk strategy with ESG aspects and on the new business and portfolio planning aiming for a green asset share of 30%. On the other hand, ex-post data collection, stocktaking and risk assessment of the portfolio in terms of ESG criteria and impending reporting obligations as well as the implementation of the ESG risk analysis into the credit process were central targets to promote pbb's risk approach. Moreover, targets were set for the continuation of green bonds issuance and extensive ESG operationalisation in the divisions and core banking processes. Through the advancement of young people and women, talent management and diversity, special attention was given to key social sustainability targets. These were complemented by targets regarding time and cost invested in staff training.

Risk hedging and risk mitigation

pbb Group's sustainability strategy is designed to consider sustainability aspects within all its business activities, exploit ESG opportunities, and minimise sustainability risks at the same time.

From a risk perspective, the focus is on the options for exerting influence at all stages in the commercial real estate financing value chain, starting with fundraising and ranging from the initiation of business and the entire loan coverage process to repayment or the realisation of collateral. Within pbb Group, the principle of environmental sustainability of the properties to be financed is based on close links between Sales, Credit and Risk Management, plus the real estate experts, and is an integral part of the lending decision process.

When it comes to financing commercial real estate or public infrastructure projects, ESG aspects play a key role alongside commercial aspects. Taking these ESG aspects into account not only aims at making a positive contribution to the overarching sustainability targets, but also helps avoid ESG/sustainability risks.

pbb Group defines exclusion criteria relating to social and governance aspects for its financing activities. Within the scope of new business origination, comparing a property's climate pathway with the pathway towards the strategic carbon neutrality

goal has become an integral component of the lending process. In terms of new business for office real estate, deviations from the “green” status already require Management Board approval.

Opportunities

ESG risks generally also offer potential opportunities related to sector-specific aspects – especially by offering sustainable financing solutions (green loans), expanding activities as a transformation financier (green capex) as well as issuing green bonds. Sustainable financing solutions decrease the probability of loan defaults, increase the value of the collateral furnished and reduce potential reputational damage.

Moreover, the qualifications and satisfaction of our employees are the main foundation for the quality of their work, and thus for the Company’s potential.

The sustainability strategy is essentially an integral part of the business strategy and is designed to continue to reinforce ESG as a core brand element, minimise sustainability risks, whilst making use of the different opportunities that arise.

Climate-related and environmental risk

Quantitative disclosures on climate-related and environmental risk

Information on climate-related and environmental risk is disclosed in tables EU ESG1, EU ESG2, EU ESG5, and EU ESG10 below, pursuant to Article 449a of the CRR.

Table EU ESG4 is not relevant for pbb Group as pbb Group has no exposure to the top 20 most carbon-intensive corporations worldwide as at the reporting date.

Table EU ESG1 presents a breakdown of exposures towards non-financial corporations operating in sectors (using NACE codes) that highly contribute to climate change and are consequently more exposed to the risks that may arise from the transition to a low-carbon and climate resilient economy ("transition risk"). The table also contains information on the quality of these exposures and their maturity buckets. Sectors that highly contribute to climate change as defined in Recital 6 of the Commission Delegated Regulation (EU) 2020/1818 include oil, gas, mining and transport.

Table EU ESG2 presents the transition risk for loans and advances collateralised with commercial and residential immovable property and of repossessed real estate collaterals, including information on the collateral's level of energy efficiency measures in terms of kWh/m^2 or in terms of the Energy Performance Certificate ("EPC") label. These exposures are broken down by location of the real estate collateral (EU/non-EU).

Table EU ESG5 presents information on exposures towards non-financial corporations on loans collateralised with immovable property and on repossessed real estate collaterals exposed to chronic and acute climate-related hazards subject to physical risk. The table also contains information on the credit quality of these exposures and their maturity buckets. The counterparties are bro-ken down by sector of economic activity (NACE classification) and geography, as recommended by the Task Force on Climate-related Financial Disclosures (TCFD). Regarding geography (i.e. areas prone to climate-related hazards), pbb Group's information in Table EU ESG5 refers to Germany and all other countries combined.

Table EU ESG10 presents an overview of loans and bonds that support the transition to sustainable growth and a climate-neutral economy as at year-end 2022. It covers additional climate protection measures and activities that pbb Group has taken to mitigate climate-related risks (transition and physical risks). Given a lack of energy level benchmarks, it has not been possible to make a conclusive assessment of the alignment of the measures included in this table (green loans and green bonds) with the EU Taxonomy. However, these measures support our counterparties for the objectives of transition and climate change adaptation. The tables covers all exposures based on pbb's Green Loan Framework that are aimed at mitigating climate-related risks, including those that might not be aligned with the EU Taxonomy criteria.

EU ESG1: Banking book – Indicators of potential climate change transition risk: Credit quality of exposures by sector, emissions and residual maturity

		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
		Gross carrying amount [2)]					**Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions**			**GHG financed emissions (scope 1, scope 2 and scope 3 emissions of the counter-party) (in tons of CO2 equivalent) [5)]**		**GHG emis-sions (column i) [6)]**	**Remaining maturity**				
	Sector/subsector [1)]		**thereof exposures towards companies excluded from EU Paris-aligned Benchmarks [3)]**	**thereof environ-mentally sustaina-ble (CCM) [4)]**	**thereof stage 2 expo-sures**	**thereof non-per-forming expo-sures**		**thereof Stage 2 expo-sures**	**thereof non-per-forming expo-sures**		**thereof Scope 3 financed emis-sions**		**<= 5 years**	**> 5 year <= 10 years**	**> 10 year <= 20 years**	**> 20 years**	**Average weighted maturity**
	All figures in € million, unless otherwise stated																
1	**Exposures towards sectors that highly contribute to climate change***	**28,804**	**0**	**-**	**8,475**	**806**	**-382**	**-128**	**-211**	**-**	**-**	**-**	**22,308**	**5,414**	**934**	**148**	**4**
2	A - Agriculture, forestry and fishing	0	0	-	0	0	0	0	0	-	-	-	0	0	0	0	0
3	B - Mining and quarrying	0	0	-	0	0	0	0	0	-	-	-	0	0	0	0	0
4	B.05 - Mining of coal and lignite	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	B.06 - Extraction of crude petroleum and natural gas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	B.07 - Mining of metal ores	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	B.08 - Other mining and quarrying	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	B.09 - Mining support service activities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	C - Manufacturing	52	0	-	52	0	0	0	0	-	-	-	0	52	0	0	9
10	C.10 - Manufacture of food products	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	C.11 - Manufacture of beverages	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	C.12 - Manufacture of tobacco products	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	C.13 - Manufacture of textiles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	C.14 - Manufacture of wearing apparel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	C.15 - Manufacture of leather and related products	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	C.16 - Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	C.17 - Manufacture of pulp, paper and paperboard	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	C.18 - Printing and service activities related to printing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	C.19 - Manufacture of coke oven products	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	C.20 - Production of chemicals	52	-	-	52	-	-	-	-	-	-	-	-	52	-	-	9
21	C.21 - Manufacture of pharmaceutical preparations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	C.22 - Manufacture of rubber products	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
		Gross carrying amount [2]					Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions			GHG financed emissions (scope 1, scope 2 and scope 3 emissions of the counter-party) (in tons of CO2 equivalent) [5]		GHG emis-sions (column i) [6]	Remaining maturity				
	Sector/subsector [1]		thereof exposures towards companies excluded from EU Paris-aligned Benchmarks [3]	thereof environ-mentally sustaina-ble (CCM) [4]	thereof stage 2 expo-sures	thereof non-per-forming expo-sures		thereof Stage 2 expo-sures	thereof non-per-forming expo-sures		thereof Scope 3 financed emis-sions		<= 5 years	> 5 year <= 10 years	> 10 year <= 20 years	> 20 years	Average weighted maturity
All figures in € million, unless otherwise stated																	
23	C.23 - Manufacture of other non-metallic mineral products	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	C.24 - Manufacture of basic metals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	C.25 - Manufacture of fabricated metal products, except machinery and equipment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	C.26 - Manufacture of computer, electronic and optical products	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	C.27 - Manufacture of electrical equipment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	C.28 - Manufacture of machinery and equipment n.e.c.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	C.29 - Manufacture of motor vehicles, trailers and semi-trailers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	C.30 - Manufacture of other transport equipment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	C.31 - Manufacture of furniture	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	C.32 - Other manufacturing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	C.33 - Repair and installation of machinery and equipment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	D - Electricity, gas, steam and air conditioning supply	40	0	-	0	0	0	0	0	-	-	-	15	25	0	0	6
35	D35.1 - Electric power generation, transmission and distribution	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	D35.11 - Production of electricity	40	-	-	-	-	-	-	-	-	-	-	15	25	-	-	6
37	D35.2 - Manufacture of gas; distribution of gaseous fuels through mains	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	D35.3 - Steam and air conditioning supply	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	E - Water supply; sewerage, waste management and remediation activities	162	0	-	0	0	0	0	0	-	-	-	109	0	52	0	5
40	F - Construction	325	0	-	72	0	0	0	0	-	-	-	288	37	0	0	2
41	F.41 - Construction of buildings	325	-	-	72	-	-	-	-	-	-	-	288	37	-	-	2
42	F.42 - Civil engineering	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	F.43 - Specialised construction activities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7
44	G - Wholesale and retail trade; repair of motor vehicles and motorcycles	102	0	-	0	0	0	0	0	-	-	-	102	0	0	1	2

	Sector/subsector [1]	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
		Gross carrying amount [2]					**Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions**			**GHG financed emissions (scope 1, scope 2 and scope 3 emissions of the counterparty) (in tons of CO2 equivalent) [5]**		**GHG emissions (column i) [6]**	**Remaining maturity**				
			thereof exposures towards companies excluded from EU Paris-aligned Benchmarks [3]	**thereof environmentally sustainable (Climate Change Mitigation, CCM) [4]**	**thereof stage 2 exposures**	**thereof non-performing exposures**		**thereof Stage 2 exposures**	**thereof non-performing exposures**		**thereof Scope 3 financed emissions**		**<= 5 years**	**> 5 year <= 10 years**	**> 10 year <= 20 years**	**> 20 years**	**Average weighted maturity**
	All figures in € million, unless otherwise stated																
45	H - Transportation and storage	66	0	-	35	24	-2	-1	-2	-	-	-	24	35	8	0	6
46	H.49 - Land transport and transport via pipelines	31	-	-	-	24	-2	-	-2	-	-	-	24	-	-	-	7
47	H.50 - Water transport	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	H.51 - Air transport	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
49	H.52 - Warehousing and support activities for transportation	35	-	-	35	-	-1	-1	-	-	-	-	-	35	-	-	6
50	H.53 - Postal and courier activities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
51	I - Accommodation and food service activities	136	0	-	39	0	-1	-1	0	-	-	-	2	134	0	0	8
52	L - Real estate activities	27,921	0	-	8,278	782	-379	-127	-209	-	-	-	21,768	5,130	874	147	4
53	**Exposures towards sectors other than those that highly contribute to climate change***	**836**	**0**	**-**	**104**	**0**	**0**	**0**	**0**	—	—	—	**241**	**70**	**362**	**163**	**13**
54	K - Financial and insurance activities [7]	-	-	-	-	-	-	-	-	—	—	—	-	-	-	-	-
55	Exposures to other sectors (NACE codes J, M - U)	836	-	-	104	-	-	-	-	—	—	—	241	70	362	163	13
56	**Total**	**29,640**	**0**	**0**	**8,579**	**806**	**-383**	**-128**	**-211**	**-**	**-**	**-**	**22,549**	**5,484**	**1,296**	**311**	**4**

[1] Classification according to the counterparty's NACE code is based on the main business activity of the direct counterparty (e.g. the direct borrower, counterparty or securities issuer) or that of the most relevant or significant borrower. The NACE codes are in line with the NACE Regulation: statistical classification of economic sectors in the European Community.

[2] Gross carrying amount – before impairments on financial assets, after amortisation, before application of credit risk mitigation techniques – of loans and advances, debt securities and equity instruments in the banking book, i.e. excluding financial assets held for trading or held for sale.

[3] Exposures towards companies excluded from EU Paris-aligned benchmarks as specified in Article 12(1), points (d) to (g) and Article 12(2) of Delegated Regulation (EU) 2020/1818.

[4] Column c: EBA/ITS/2022/01 asks institutions to start disclosing this information (if not yet available) as per 31 December 2023 (for exposures included in the Green Asset Ratio's numerator) or 31 December 2024 (for exposures included in the Banking Book Taxonomy Alignment Ratio's numerator, but not the Green Asset Ratio's numerator).

[5] Columns i to k: EBA/ITS/2022/01 asks institutions to start disclosing this information (if not yet available) as per 30 June 2024.

[6] Greenhouse gas emissions ("GHG"). Column k shows the percentage share in the portfolio for which information on the counterparties' scope 1/2/3 GHG emissions is already available.

[7] Line 54 (sector K) includes exposures towards non-financial corporations (FINREP definition); it does not include exposures towards credit institutions and other financial corporations.

EU ESG2: Banking book – Indicators of potential climate change transition risk: Loans collateralised by immovable property – Energy efficiency of the collateral

		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
		Total gross carrying amount [1]															
			Level of energy efficiency [2] (EP score in kWh/m² of collateral)						Level of energy efficiency (EPC label of collateral) [3]							Without EPC label of collateral	
	Counterparty sector		0; <= 100	> 100; <= 200	> 200; <= 300	> 300; <= 400	> 400; <= 500	> 500	A	B	C	D	E	F	G		thereof level of energy efficiency estimated [4]
All figures in € million, unless otherwise stated																	
1	**Total EU area**	**22,049**	**8,752**	**8,634**	**3,696**	**866**	**27**	**74**	**324**	**362**	**282**	**286**	**513**	**121**	**93**	**20,068**	**60%**
2	thereof Loans collateralised by commercial immovable property	18,060	7,700	6,536	2,858	864	27	74	216	163	68	49	129	12	16	17,406	54%
3	thereof Loans collateralised by residential immovable property	3,989	1,052	2,098	838	2	-	-	107	200	213	237	384	109	76	2,662	98%
4	thereof Collateral obtained by taking possession: residential and commercial immovable properties	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	thereof Level of energy efficiency (EP score in kWh/m² of collateral) estimated	11,988	5,357	3,686	2,652	292	-	-	—	—	—	—	—	—	—	11,988	100%
6	**Total non-EU area**	**6,956**	**1,736**	**1,677**	**1,976**	**1,567**	**-**	**-**	**-**	**159**	**-**	**-**	**-**	**-**	**-**	**6,797**	**89%**
7	thereof Loans collateralised by commercial immovable property	5,895	1,141	1,331	1,856	1,567	-	-	-	159	-	-	-	-	-	5,737	87%
8	thereof Loans collateralised by residential immovable property	1,061	595	346	120	-	-	-	-	-	-	-	-	-	-	1,061	100%
9	thereof Collateral obtained by taking possession: residential and commercial immovable properties	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	thereof Level of energy efficiency (EP score in kWh/m² of collateral) estimated	6,074	1,504	1,152	1,976	1,442	-	-	—	—	—	—	—	—	—	6,074	100%

[1] Gross carrying amount of loans and advances collateralised by immovable property before impairments on financial assets, after amortisation, before application of credit risk mitigation techniques.
[2] Columns b to g: Exposures by energy efficiency, based on the specific energy consumption of the collaterals measured in terms of kWh/m².
[3] Columns h to n: Exposures by EPC label of the collateral (where a mapping to the EPC label exists).
[4] Column p: Share of column o for which the collaterals' energy efficiency was indicated based on estimates (energy consumption in kWh/m²), reported as a percentage and in line with the EBA's Q&A 2022-6625.

EU ESG5: Banking book – Indicators of potential climate change physical risk: Exposures subject to physical risk (Germany)

	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	Variable: Geographical area subject to climate change physical risk - acute and chronic events [2) 3)] **Germany**	**Gross carrying amount [1)]**	**thereof exposures sensitive to impact from climate change physical events**										**Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions**		
			Breakdown by maturity bucket					**thereof exposures sensitive to impact from chronic climate change events**	**thereof exposures sensitive to impact from acute climate change events**	**thereof exposures sensitive to impact both from chronic and acute climate change events**	**thereof Stage 2 exposures**	**thereof non-performing exposures**			
All figures in € million, unless otherwise stated			**<= 5 years**	**> 5 year <= 10 years**	**> 10 year <= 20 years**	**> 20 years [4)]**	**Average weighted maturity**							**thereof Stage 2 exposures**	**thereof non-performing exposures**
1	A - Agriculture, forestry and fishing	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	B - Mining and quarrying	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	C - Manufacturing	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	D - Electricity, gas, steam and air conditioning supply	5	2	3	-	-	40	-	5	-	-	-	-	-	-
5	E - Water supply; sewerage, waste management and remediation activities	97	97	-	-	-	7	-	97	-	-	-	-	-	-
6	F - Construction	245	-	-	-	-	-	-	-	-	-	-	-	-	-
7	G - Wholesale and retail trade; repair of motor vehicles and motorcycles	2	-	-	-	-	-	-	1	-	-	-	-	-	-
8	H - Transportation and storage	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	L - Real estate activities	8,921	779	735	135	-	12	-	1,468	194	162	-	-3	-1	-
10	Loans collateralised by residential immovable property	3,255	384	489	3	4	2	-	819	60	344	7	-4	-2	-1
11	Loans collateralised by commercial immovable property	5,796	247	234	130	1	25	-	478	134	1,148	58	-38	-14	-15
12	Repossessed collaterals	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	Other relevant sectors (breakdown below where relevant)	142	-	-	-	-	-	-	1	-	6	-	-	-	-

[1)] Gross carrying amount – before impairments on financial assets, after amortisation, before application of credit risk mitigation techniques – of loans and advances, debt securities and equity instruments in the banking book, i.e. excluding financial assets held for trading or held for sale.
[2)] Classification according to the counterparty's NACE code is based on the main business activity of the direct counterparty (e.g. the direct borrower, counterparty or securities issuer) or that of the most relevant or significant borrower. The NACE codes are in line with the NACE Regulation: statistical classification of economic sectors in the European Community.
[3)] Assignment to a geographical area subject to physical risk (acute and chronic events) due to climate change hinges on the location of the debtor, i.e. the debtor's place of habitual residence or the location of the assets (real estate) in cases involving specialised lending.
[4)] In accordance with EBA/ITS/2022/01 the "> 20 years" maturity bucket can also include exposures that have no specific residual maturity for reasons other than the counterparty being able to choose the redemption date.

EU ESG5: Banking book – Indicators of potential climate change physical risk: Exposures subject to physical risk (other countries)

	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
		Gross carrying amount [1]													
			thereof exposures sensitive to impact from climate change physical events												
	Variable: Geographical area subject to climate change physical risk - acute and chronic events [2) 3)] Other countries (without Germany)		Breakdown by maturity bucket					thereof exposures sensitive to impact from chronic climate change events	thereof exposures sensitive to impact from acute climate change events	thereof exposures sensitive to impact both from chronic and acute climate change events	thereof Stage 2 exposures	thereof non-performing exposures	Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions		
All figures in € million, unless otherwise stated			<= 5 years	> 5 year <= 10 years	> 10 year <= 20 years	> 20 years [4]	Average weighted maturity							thereof Stage 2 exposures	thereof non-performing exposures
1	A - Agriculture, forestry and fishing	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	B - Mining and quarrying	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	C - Manufacturing	52	-	52	-	-	9	-	-	52	52	-	-	-	-
4	D - Electricity, gas, steam and air conditioning supply	35	13	22	-	-	6	-	35	-	-	-	-	-	-
5	E - Water supply; sewerage, waste management and remediation activities	65	13	-	52	-	10	-	65	-	-	-	-	-	-
6	F - Construction	81	-	-	-	-	-	-	-	-	-	-	-	-	-
7	G - Wholesale and retail trade; repair of motor vehicles and motorcycles	101	101	-	-	-	1	-	101	-	-	-	-	-	-
8	H - Transportation and storage	66	24	35	8	-	6	-	66	-	35	24	-2	-1	-2
9	L - Real estate activities	19,000	7,781	432	171	-	2	-	8,083	301	2,886	465	-162	-45	-105
10	Loans collateralised by residential immovable property	1,645	846	142	-	-	2	-	884	105	749	-	-12	-10	-
11	Loans collateralised by commercial immovable property	17,294	6,873	283	-	-	2	-	6,961	196	6,140	717	-325	-102	-194
12	Repossessed collaterals	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	Other relevant sectors (breakdown below where relevant)	829	-	-	-	-	-	-	-	-	137	-	-1	-1	-

[1] Gross carrying amount – before impairments on financial assets, after amortisation, before application of credit risk mitigation techniques – of loans and advances, debt securities and equity instruments in the banking book, i.e. excluding financial assets held for trading or held for sale.

[2] Classification according to the counterparty's NACE code is based on the main business activity of the direct counterparty (e.g. the direct borrower, counterparty or securities issuer) or that of the most relevant or significant borrower. The NACE codes are in line with the NACE Regulation: statistical classification of economic sectors in the European Community.

[3] Assignment to a geographical area subject to physical risk (acute and chronic events) due to climate change hinges on the location of the debtor, i.e. the debtor's place of habitual residence or the location of the assets (real estate) in cases involving specialised lending.

[4] In accordance with EBA/ITS/2022/01 the "> 20 years" maturity bucket can also include exposures that have no specific residual maturity for reasons other than the counterparty being able to choose the redemption date.

EU ESG10: Other climate change mitigating actions that are not covered in Regulation (EU) 2020/852 (EU Taxonomy)

	a	b	c	d	e	f
	Type of financial instrument	Type of counterparty	Gross carrying amount	Type of risk mitigated (Climate change transition risk)	Type of risk mitigated (Climate change physical risk)	Qualitative information on the nature of the mitigating actions [1]
All figures in € million, unless otherwise stated						
1	**Bonds** (e.g. green, sustainable, sustainability-linked under standards other than the EU standards)	Financial corporations	60	Climate change transition risk	-	Green bonds issued by the European Investment Bank (“EIB”) or Germany’s Kreditanstalt für Wiederaufbau (“KfW”)
2		Non-financial corporations	-	-	-	
3		thereof Loans collateralised by commercial immovable property	-	-	-	
4		Other counterparties	76	Climate change transition risk	-	Funding of local authorities to support their sustainable investments
5	**Loans** [2] (e.g. green, sustainable, sustainability-linked under standards other than the EU standards)	Financial corporations	-	-	-	
6		Non-financial corporations	571	Climate change transition risk	-	Loans classified as sustainable in line with pbb’s ESG scoring
7		thereof Loans collateralised by commercial immovable property	571	Climate change transition risk	-	Loans classified as sustainable in line with pbb’s ESG scoring
8		Households	-	-	-	
9		thereof Loans collateralised by residential immovable property	-	-	-	
10		thereof building renovation loans	-	-	-	
11		Other counterparties	-	-	-	

[1] Column f provides information on the type of “other” mitigating measures that are not fully aligned with the EU Taxonomy.
[2] The volume of green loans which the Bank has issued since the fourth quarter of 2021 rose to around € 1.4 billion by the end of June 2022 (including irrevocable loan commitments). The gross carrying amount of the loans that have already been paid out amounts to € 571 million.

Explanatory notes to the information disclosed

EU ESG1: Banking book – Indicators of potential climate change transition risk: Credit quality of exposures by sector, emissions and residual maturity

Table EU ESG1 presents a breakdown of exposures – loans and advances, debt securities and equity instruments – towards non-financial corporations operating in sectors (using NACE codes) that highly contribute to climate change and are consequently more exposed to the risks that may arise from the transition to a low-carbon and climate resilient economy.

95% of these exposures towards non-financial corporations relate to the L sector ("Real estate activities"; row 52; € 27.9 billion) and the F sector ("Construction"; row 40; € 325 million), given the nature of pbb Group's business model, which focuses on Real Estate Finance ("REF") and Public Investment Finance ("PIF"). The remaining sectors combined account for around 5%; on an individual basis, none of them accounts for more than 1% of the exposures. pbb Group is not exposed to companies that are excluded from the Paris-aligned EU benchmarks (e.g. weapons, tobacco, coal, oil, gaseous fuels, etc.) (column b).

Table EU ESG1 is based on FINREP data (reporting of financial information according to IFRS). Counterparties' scope 1, scope 2 and scope 3 emissions (columns i, j and k) must be disclosed starting 30 June 2024. pbb Group intends to draw on the standard established by the Partnership for Carbon Accounting Financials ("PCAF") for this purpose, which was created to ensure that banks and other financial institutions be consistent in the way they disclose the GHG emissions they finance. Transparency in disclosing GHG emissions and reliable comparisons with other institutions serve to support the implementation of pbb Group's sustainability strategy.

EU ESG2: Banking book – Indicators of potential climate change transition risk: Loans collateralised by immovable property – Energy efficiency of the collateral

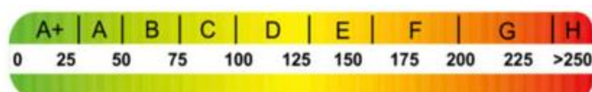
Table EU ESG2 presents the transition risk arising from the adaptation to a lower-carbon economy for loans and advances collateralised with commercial and residential immovable property and of repossessed real estate collaterals, including information on the collateral's level of energy efficiency measures in terms of kWh/m^2 or in terms of the Energy Performance Certificate ("EPC") label. These exposures are broken down by location of the real estate collateral (EU/non-EU).

pbb Group's Commercial Real Estate Finance portfolio continues to be dominated by investment financing, i.e. financing of properties whose debt servicing capacity essentially rests on their operating cash flow. Financed objects mainly involve office buildings, properties for residential use, retail and logistics properties. 83% of the exposures (loans and advances collateralised with immovable property) shown in Table EU ESG2 are commercial properties, while 17% are residential properties. The geographic focus of pbb Group's business operations remains on Europe and the US. pbb's significant European core markets are Germany, France, the United Kingdom, the Nordic countries, selected Central and Eastern European countries, Spain and the Benelux countries. 76% of exposures are towards EU countries, and 24% to non-EU countries.

FINREP information (i.e. the reporting of financial information according to IFRS) was the main source of information for Table EU ESG2. Information on the properties' energy efficiency also makes use of the results of carbon emissions calculations, where each property ID is assigned a final energy consumption value, measured in kWh/m^2. Table EU ESG2 (columns h to n) presents the exposures for which an EPC label is available. Rows 5 to 10 indicate where energy efficiency and energy consumption are based on estimates due to a lack of EPC labels.

The methodology used to estimate energy consumption in kWh/m^2, the data sources and proxy values used, as well as the assumptions made, are described below.

Every residential property for which an EPC label was available was mapped to a category of the German EPC label for residential buildings, with no distinction being made between energy consumption and energy demand (the German standard allows both metrics to be used). The categories are linearly spread across an energy scale ranging from 0 to 250 kWh/m² (from A+ to G; H for > 250 kWh/m²). The A and A+ categories were combined to A for EU ESG2; likewise, the G and H categories were combined to G. There is no rating with uniform energy efficiency standards for commercial properties in Germany.



German EPC categories for residential buildings, in kWh/m²
(energy efficiency for residential buildings – fuel consumption given in kilowatt hours per square metre on an annual basis (shortened to: kWh/m² a).

For every residential property with an EPC label there will also be information available on its final energy consumption per year in kWh/m². While EPC labels do not apply to commercial property, their final energy consumption in kWh/m² is known if their EPC is known (i.e. Energy efficiency in kWh/m²). If no information on a property's energy demand was available, proxy values were used instead.

If no data on final energy consumption was available for a given property, an assessment was made based on information on the property type and its year of construction:

- Property type: Average values for the property type in question were used as a proxy to estimate the property's final energy consumption. The property types are: residential, office, retail, hotel or logistics. For the average final energy consumption per property type, please see the chart below.

  The total residential factor indicates the ratio of total annual energy consumption of one of the four commercial property types and the total annual energy consumption of a commercial property. The total residential factor for residential properties is 1.00.

- Year of construction: Information about the year of construction was included to improve the proxy's accuracy. Please see the chart below for average final energy consumption per year of construction. Where the year of construction was unknown, the average year (1981) was used for scaling purposes. Where a building was constructed before 1918, 1918 was used as a proxy.

Building category	Energy consumption p.a. (electricity) in kWh/m²	Energy consumption p.a. (heating) in kWh/ m²	Total energy consumption in kWh/ m²	Residential factor total
Hotel	60	95	155	1.14
Retail	85	70	155	1.14
Office	85	110	195	1.43
Logistics	35	30	65	0.48
Residential	34	102	136	1.00

Average final energy consumption per property type.
Sources: Non-residential buildings (https://geg-info.de/geg/210503_bmwi_bmi_regeln_energieverbrauchskennwerte_nichtwohnbestand.pdf) and Residential buildings (https://www.bmwk.de/Redaktion/DE/Downloads/Studien/vorbereitende-untersuchungen-zur-langfristigen-renovierungsstrategie-ergaenzung.pdf?__blob=publicationFile&v=6)

Construction year	Primary energy demand in kWh/m²	Final energy demand in kWh/ m²	Final energy consumption in kWh/ m²
1918 - 1934	260	225	150
1935 - 1947	265	230	150
1948 - 1949	255	205	150
1950 - 1959	255	205	145
1960 - 1977	240	180	145
1978 - 1989	220	165	140
1990 - 1999	165	125	125
2000	125	100	125
2001	125	100	100
2002 - 2003	100	95	80
2004	95	80	80
2005	90	80	80
2006 - 2007	80	70	75
2008	75	70	75
2009 - 2027	55	50	75

Average final energy consumption per year of construction. Source: https://www.dena.de/fileadmin/user_upload/8162_dena-Gebaeudereport.pdf
The source is only applicable to residential buildings. The other types of property were assigned proxies following a scaling for each property type.

The average final energy consumption in kWh/m² was calculated separately for heating and electricity for every combination of property type and year of construction based on the above charts (property types: residential, office, retail, hotel or logistics; years of construction: every year between 1918 and 2027). The sum of the final energy consumption for heating and electricity yields the total final energy consumption in kWh/m² by year of construction and property type; this total final energy consumption was used as a proxy for all properties without an EPC Label or as a first indication of their energy efficiency.

Reporting on the energy efficiency of financed properties is an integral part of pbb's regular internal reporting to management.

EU ESG4: Banking book – Indicators of potential climate change transition risk: Exposures to top 20 carbon-intensive firms

Table EU ESG4 is not relevant for pbb Group as pbb Group has no exposure to the top 20 most carbon-intensive corporations worldwide as at the reporting date.

(Source: Carbon Majors Report 2017, https://cdn.cdp.net/cdp-production/cms/reports/documents/000/002/327/original/Carbon-Majors-Report-2017.pdf?1501833772)

EU ESG5: Banking book – Indicators of potential climate change physical risk: Exposures subject to physical risk

Table EU ESG5 includes information on exposures (loans, debt securities and equity instruments) to non-financial corporates, on loans collateralised with immovable property and on repossessed real estate collaterals, potentially exposed to physical risk from chronic and acute climate-related hazards. The table also contains information on the credit quality of these exposures and their maturity buckets. The counterparties are broken down by sector of economic activity (NACE classification) and geography, as recommended by the Task Force on Climate-related Financial Disclosures (TCFD).

Regarding geography (i.e. areas prone to climate-related hazards), pbb Group's information in Table EU ESG5 refers to Germany and all other countries combined. Germany alone accounts for around 32% of all risk exposures towards non-financial corporates, 97% of which relate to the L (Real estate activities) and F (Construction) sectors. Other countries (excluding Germany) account for around 68% of risk exposures, 94% of which relate to the L (Real estate activities) and F (Construction) sectors.

Risk exposures that are only subject to chronic climate change-related events do not exist in Germany or in the other countries as at the disclosure date. A physical risk is considered to be acute if it materialises due to extreme events, such as drought, flooding or storms. Risk exposures that are only subject to acute climate change-related events amount to € 1,571 million in Germany (17% of the total risk exposures relating to Germany) and to € 8,350 million in all other countries combined (41% of the total risk exposures relating to these countries). A physical risk is considered to be chronic if it results from gradual

changes (for example, rising sea levels). Risk exposures prone to both chronic and acute events as a result of climate change amount to € 194 million in Germany (2% of the total risk exposures relating to Germany) and to € 353 million in all other countries combined (2% of the total risk exposures relating to these countries).

FINREP information (i.e. the reporting of financial information according to IFRS) was the main source of information for Table EU ESG5. The methodology applied for preparing the table and assessing the sensitivity to physical events as a result of climate change, together with the data sources, assumptions, approximations and expert assessments used for this report are all described below. A distinction was made between collateralised financings where the sensitivity analysis is based on collateral (commercial and residential properties), and uncollateralised financings where the counterparty and its area of economic activity were used to assess physical risks.

The physical risk assessments for collateralised financings are available per property. Contract and property IDs were mapped (in an m:n relationship) to facilitate allocation of collateral to the respective contract; based on this, we developed an allocation algorithm (which includes weighting the market value of the properties) to allocate gross carrying amounts to physical risk assessments. The gross carrying amounts were then assessed by reference to the individual physical risk of each property.

Physical risk assessments for uncollateralised financings looked at the business partner ID, taking the postal code of the business partner's head office into account (based on the European Union's Nomenclature of Territorial Units for Statistics – NUTS, which breaks the EU down into regions).

Sensitivity of the financings towards climate hazards was assessed based on the results of the physical risk assessment for pbb Group's risk inventory. For the purposes of systematically identifying and analysing potential risks arising from the business model or pbb Group's external environment, pbb 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 pbb Group's capital and liquidity resources, and scans them as to potential risk concentrations. In order to ensure that ESG risks are given adequate consideration in the Bank's risk management processes, an identification and assessment process for ESG risk drivers has been established as a firm component of the annual risk inventory.

As part of the risk assessment for the risk inventory, each property was attributed a qualitative risk level on a risk scale (traffic light system) for ten acute (flooding, heavy rain, storm surge, storm, tornado, hail, drought, forest fire, heat, and landslide) and two chronic climate risks (coastal erosion, rising sea levels). The risk scales for most of these risks come from external sources (K.A.R.L., ThinkHazard, WRI Aqueduct) and are therefore generally not subject to expert assessments by pbb (no override), with the exception of climate risks posed by wildfires and landslides. These risk scales underwent expert review and were supplemented by a vegetation analysis / the altitude profiles of the properties. pbb therefore fully considers all physical climate risks mentioned as examples in the Implementing Regulation (EU) 2022/2453 for its assessments.

The difference between acute and chronic risks is based on the EBA's report on management and supervision of ESG risks for credit institutions and investment firms (EBA/REP/2021/18), amongst others. If, for one acute risk or more, the assessment of a property or counterparty indicated the second-highest risk level, this property was classified as being sensitive to acute physical risks. The same approach was used for chronic physical risks. Since we applied a very conservative approach, the disclosure in Table EU ESG5 can be regarded as an upper risk barrier for pbb Group. In addition, the result of the assessment should be considered as gross risk, meaning before any risk mitigation measures or individual climate assessments (e.g. insurance policies and/or construction measures by the borrower or changes in contract terms or special due diligence approaches by the Bank).

Risk assessments for flooding, heavy rain, storm surge, storm, tornado and hail were based on data provided by Köln.Assekuranz Risiko Lösungen (K.A.R.L.). K.A.R.L. offers an analysis tool to identify and quantify location- and property-related risks from natural hazards. To assess the risk situation, K.A.R.L. combines the location-specific hazard situation and the resilience (vulnerability) of the respective property or industry location using a loss projection function specific to the property type. Table EU ESG5 was therefore populated using expected annual loss amounts; these were translated into a five-level qualitative risk assessment for the specific location, in line with the traffic light system of the K.A.R.L. risk scale.

Risk	Lower barrier in %	Upper barrier in %
No risk	-	0.00
Very low risk	0.00	0.05
Low risk	0.05	0.10
Medium risk	0.10	0.70
High risk	0.70	-

Risk assessment per property, based on the expected loss in % for all physical risks covered by K.A.R.L

The drought, forest fire, heat, landslide, rising sea level and coastal erosion risk categories were assessed based on publicly available hazard maps from the World Bank's ThinkHazard tool and WRI Aqueduct (which sets standards for the Greenhouse Gas Protocol). Our assessment follows ThinkHazard's method with its thresholds for the risk scale. For all risks not covered by ThinkHazard, the ThinkHazard thresholds were extrapolated by our experts (coastal erosion, rising sea levels).

The risk assessment by geography was based on the European Union's Nomenclature of Territorial Units for Statistics (NUTS), which breaks down the EU into regions. For non-European geographies, the respective areas were approximated using a geo-graphical coordinate and its realistic impact radius in each case.

EU ESG10: Other climate change mitigating actions that are not covered in Regulation (EU) 2020/852 (EU Taxonomy)

Table EU ESG10 presents an overview of loans and bonds that support the transition to sustainable growth and a climate-neutral economy as at year-end 2022. It covers all exposures that are aimed at mitigating climate-related risks, including those that might be aligned with the EU Taxonomy criteria. pbb Group carries both green loans (based on the provisions of pbb's Green Loan Framework) and green bonds on its balance sheet.

pbb Group aims to consider sustainability aspects within all its business activities, exploit ESG opportunities, and minimise the risk of negative consequences due to ESG risks. It has defined sustainable finance as being a central pillar of its ESG strategy – which promotes sustainability in the Bank's core lending and funding business – and has not only developed the Green Loan and Green Bond Frameworks, including respective products, but also successfully placed them on the market.

- pbb Group has established a Green Bond Framework aimed at raising funds through the issuance of green bonds. By issuing green bonds, pbb Group enables investors to make targeted investments in sustainable capital market products.
- In addition, pbb Group has developed a Green Loan Framework in accordance with the LMA Green Loan Principles and taking the EU taxonomy into account, whose requirements go even further than those of the Green Bond Framework.

pbb has been offering green loans as a new credit product since the fourth quarter of 2021. This includes loans to finance existing green buildings, development financing for green buildings as well as transformation financing for existing properties to convert them into green buildings. There is as yet no established standard for green loans on the market. Therefore, pbb has developed a Green Loan Framework based on two elements: a standalone sustainability scoring model, and the EU Taxonomy. The pbb scoring model allows for the assessment of real estate using specific criteria; from a defined score upwards, real estate qualifies for green lending. As an alternative, pbb grants green loans to buildings compliant with the EU Taxonomy. pbb's scoring model takes three dimensions into account: the energy efficiency of a building, building certifications, and further sustainability factors. The latter include factors such as soil surface sealing or the availability of, and distance to, the public transportation network, as well as the use of recycled materials for construction or the type of heating and use of green electricity.

Information regarding COVID-19 measures

As at the disclosure date of 31 December 2022, pbb Group's portfolio no longer included any financings granted by pbb to clients in response to the COVID-19 crisis (31 December 2021: € 1 million). The financings remaining at the end of 2021, which were secured by public guarantees (guaranteed by Germany's public sector development bank Kreditanstalt für Wiederaufbau – KfW), were fully repaid in the first half of 2022.

COVID-19-related disclosure requirements ended on 1 January 2023 in line with the European Banking Authority's COVID-19 Closure Report of 16 December 2022 (EBA/REP/2022/32) for proportionality reasons, reflecting decreasing public aid programmes.

Outlook

Pillar 3 data hub

In accordance with its Annual Report 2021 published on 15 June 2022, EBA seeks to further enhance market discipline and promote the use of Pillar 3 information by facilitating centralised access to such information (the Pillar 3 data hub) for credit institutions in the European Economic Area (EAA). The Pillar 3 information published in the Pillar 3 data hub are intended to be integrated with the European Single Access Point (ESAP), which is a central access point for all publicly available information in the EU. The Pillar 3 data hub aims to offer easy electronic access to qualitative and quantitative Pillar 3 information for all EEA institutions (via the EBA website), thus facilitating comparability of information.

The Pillar 3 data hub is intended to become operational by the fourth quarter of 2024, with institutions starting to report the data in January 2025.

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Confirmation of the Management Board

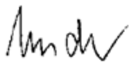
In accordance with Article 431 (3) sent. 1 to 3 of the CRR

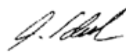
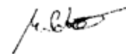
The Management Board of pbb confirms that, to the best of its knowledge, this Disclosure Report has been prepared in accordance and compliance with the formal procedures and regulations adopted and implemented at pbb Group to adhere to the disclosure requirements pursuant to Part 8 of the CRR.

Munich, 18 April 2023

Deutsche Pfandbriefbank AG

The Management Board



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