Annual Report 2022

Deutsche Pfandbriefbank Group

OVERVIEW

Deutsche Pfandbriefbank Group (pbb Group)		2022	2021
Operating performance according to IFRS			
Profit before tax	in € million	213	242
Net income	in € million	187	228
Key ratios			
Cost-income ratio[1)]	in %	45.6	40.4
Return on equity before tax[2)]	in %	6.3	7,5
Return on equity after tax[2)]	in %	5.5	7.0
Return on CET1 capital before tax[3)]	in %	6.9	8.1
Return on CET1 capital after tax[3)]	in %	6.0	7.6
Earnings per share	in €	1.27	1,58
New business volume Real Estate Finance[4)]	in € billion	9.0	9.0
Balance sheet figures according to IFRS		**31.12.2022**	**31.12.2021**
Total assets	in € billion	53.0	58.4
Equity	in € billion	3,4	3,4
Financing volumes Real Estate Finance	in € billion	29.3	27.6
Key regulatory capital ratios[5)]		**31.12.2022**	**31.12.2021**
CET1 ratio	in %	16,7	17,1
Own funds ratio	in %	21,8	22,4
Leverage ratio	in %	5.9	6.0
Staff		**31.12.2022**	**31.12.2021**
Employees (on full-time equivalent basis)		791	784
Long-term issuer rating/outlook[6)7)]		**31.12.2022**	**31.12.2021**
Standard & Poor's		BBB+/Stable	BBB+/Negative
Moody's Pfandbrief rating[6)7)]		**31.12.2022**	**31.12.2021**
Public sector Pfandbriefe		Aa1	Aa1
Mortgage Pfandbriefe		Aa1	Aa1

1) Cost-income ratio is the ratio of general and administrative expenses and net income from write-downs and write-ups on non-financial assets to operating income.
2) Return on equity before tax respectively after tax is the ratio of profit before tax (net income) attributable to pbb shareholders less AT1-coupon and average equity (excluding accumulated other comprehensive income (OCI) from cash flow hedge accounting, financial assets at fair value through OCI, additional equity instruments (AT1) and non controlling interest).
3) Return on CET1 capital before tax respectively after tax is the ratio of profit before tax (net income) attributable to pbb shareholders less AT1-coupon and average CET1 capital.
4) Including prolongations with maturities of more than one year.
5) Values as of 31 December 2022 after confirmation of the 2022 financial statements, less AT1-coupon and less proposed dividend (subject to approval by the Annual General Meeting). Values of 31 December 2021 after confirmation of the 2021 financial statements, less AT1-coupon and dividend payment.
6) Please refer to the "Report on economic position" for a detailed description of the ratings.
7) The ratings of unsecured liabilities may diverge from the issuer ratings.

Information due to rounding

Due to rounding, numbers presented throughout this document may not add up precisely to the totals provided and percentages may not precisely reflect the absolute figures.

Explanation of alternative performance measures

For further information regarding the definition, usefulness and calculation of alternative performance measures see "investors/financial-reports" at www.pfandbriefbank.com.

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Letter from the Management Board

Dear shareholders, dear business partners,
Ladies and Gentlemen,

As we reflect on the 2022 financial year, we can say it was both successful and challenging in equal measure. The war in Ukraine, the difficult macroeconomic environment, a new interest rate paradigm and tension on the property markets blew strong headwinds. Yet even in a highly challenging year for the global economy, pbb once again proved that its business model is strong and robust.

In the 2022 financial year, pbb achieved a profit before taxes of €213 million that was within the upper half of the forecasted range. The financing volume in the core Real Estate Finance business increased by €1.7 billion to €29.3 billion, with new business volume at €9.0 billion. pbb reported a CET1 ratio of 16.7%, which provides the Bank with the necessary flexibility to cushion market fluctuations, invest in profitable growth initiatives and diversify its business model.

2022 was ultimately shaped by the growth initiatives that we announced in March: organic growth in the core business, substantial expansion in the capital-preserving commission business and further diversification of the funding base. pbb plans to build on its expertise and strong capital base in the core strategic Real Estate Finance business with the aim of increasing financing volumes to at least €33 billion by 2026. Doing so positions us to seize opportunities on the property market in anticipation of better days ahead.

We intend to make great strides in helping the commercial real estate sector achieve its transformation towards climate neutrality, not least so we can live up to our responsibility to society. Green finance will be an important aspect in the strategic thrust of all the Bank's growth initiatives going forward, with a target of 30% of the existing buildings we finance being green by 2030. pbb will also begin offering green consulting services, advising clients as an expert in transformation and offering them comprehensive sustainability solutions.

pbb is pursuing two approaches to broaden its business model and expand capital-preserving commission-based business: firstly, by establishing the new Real Estate Investment Management division. We will leverage the extensive market expertise of our team, our international presence and exceptional risk competency to bring attractive real estate investment products to the market for institutional investors, namely open-ended property funds. The Investment Management division will operate as an independent unit within the Bank.

At the same time, the Bank is looking to appeal to a new circle of potential investors with an originate-to-distribute approach that includes services. As capital-efficient activities, both initiatives will contribute to earnings from off-balance sheet transactions.

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. Deposit volumes rose by 37.5% to €4.4 billion in 2022, the year of the interest rate sea change – positive momentum that the Bank intends to continue taking advantage of.

Green finance and digitalisation will remain at the heart of the strategic direction of all our growth initiatives, but without sacrificing our conservative risk profile. We are also continuing to exercise our traditional strict cost discipline. pbb is targeting a CET1 RoE after taxes of more than 9% by 2026.

At the same time, we want to continue to distribute very attractive dividends for our shareholders. Our solid operating performance and comfortable capitalisation will enable us to invest in our strategic development even more intensively in 2023 without compromising our risk and cost discipline standards. By prudently and profitably managing our risk/reward ratio, we will remain a dividend stock that long-term investors can rely on.

Best wishes,

Andreas Arndt	Thomas Köntgen	Andreas Schenk	Marcus Schulte
CEO and Chief Financial Officer	Deputy CEO Real Estate Finance and Public Investment Finance	Member of the Management Board, Chief Risk Officer	Member of the Management, Board, Treasurer

Report of the Supervisory Board

Dear shareholders,

The 2022 financial year was heavily shaped by the Russian invasion of Ukraine at the end of February and the ensuing war, which has not only caused great human suffering but has also had a global economic impact. Supply chain problems that first emerged during the coronavirus crisis were exacerbated, with soaring energy prices instrumental in driving up prices, causing high single-digit and even double-digit inflation in some countries. In view of this acute uncertainty, the brighter outlook exhibited by many companies at the beginning of the year darkened during the course of 2022.

Banks continued to find themselves in a challenging market environment, mainly due to continued intense competition, the very rapid and significant turnaround in interest rates in response to high inflation rates, and steadily increasing regulatory requirements. Against the backdrop of these major economic stress factors, one of the key challenges for banks has been (and still is) to assess possible second-round effects early on – such as customer default in the hardest-hit sectors of the economy – and to mitigate them accordingly. In 2022, pbb continued to apply the stricter risk parameters imposed at the start of the COVID-19 pandemic to new business, and was very selective in its activities in certain sub-markets.

Despite such immense challenges, pbb successfully maintained its position as one of the leading providers of commercial real estate finance in the 2022 financial year and once again achieved solid business results with new business volume remaining at the same high levels of the previous year, whilst still ensuring stringent risk standards and good gross margins. As in previous years, pbb continued to maintain its strict cost discipline throughout 2022. The Bank consistently exploited its business and earnings potential in order to further increase pbb Group's profitability. The US business, for instance, is already making a very stable and significant contribution to the Group's business success, and this is set to increase further with the planned expansion into other selected metropolitan areas. At the same time, pbb's focus in 2022 remained on digitalising processes, products and client interfaces, alongside environmental, social and governance (ESG) issues.

Although the Group’s strategic focus continues to be on the core segment of Real Estate Finance, strategic priorities now include setting up its new Real Estate Investment Management segment and division, in order to systematically diversify the business model and tap additional sources of income from capital-efficient off-balance sheet activities. Leveraging its extensive market expertise, global presence and superior risk competency in Real Estate Investment Management, the Bank intends to bring attractive real estate investment products to the market for institutional investors. In 2022, the Supervisory Board closely monitored these strategic developments, held detailed discussions with the Management Board, approved the formation of the Real Estate Investment Management segment and initiated the process of appointing a new member of the Management Board for what will in future be a separate area of responsibility: Dr Pamela Hoerr will initially join pbb in a senior management capacity on 17 April 2023, and following the customary familiarisation phase in line with regulatory requirements, is expected to assume responsibility for Real Estate Investment Management and other cross-divisional responsibilities within the Management Board.

The Supervisory Board also filled two vacant seats on the Supervisory Board during the past financial year, and actively addressed succession planning in relation to Dr Günther Bräunig, pbb's current Chairman of the Supervisory Board, at several meetings. At the joint request of the Supervisory Board and the Management Board, Gertraud Dirscherl was appointed by the court as a member of the Supervisory Board on 2 February 2022 to serve until the end of the Annual General Meeting 2022. This appointment filled the vacancy on the Supervisory Board that had remained open since October 2021 following the departure of Dagmar Kollmann. Following the Supervisory Board's proposal, the Annual General Meeting held on 19 May 2022 approved an extension of Gertraud Dirscherl's term of office until the end of the Annual General Meeting in 2025.

Following a long and successful tenure, Oliver Puhl stepped down from the Supervisory Board on 19 May 2022 at his own request. The Supervisory Board would like to express its gratitude to Oliver Puhl for his outstanding commitment and contribution to pbb's ongoing positive development. Considerable thought was given early on to identifying the most suitable candidate to fill the subsequent vacant position. In addition to the mandatory legal and regulatory requirements (in particular expertise, reliability, avoidance of conflicts of interest and maximum number of offices held), all considerations were based on the skills profile of the Supervisory Board and pbb's current diversity policy; i.e. the similar approach to the previous appointment of Gertraud Dirscherl was applied. On this basis, the Supervisory Board resolved to apply for the court appointment of Prof. Dr Kerstin Hennig to the Supervisory Board, which was approved by the Local Court (*Amtsgericht*) on 19 July 2022. Prof. Hennig's many years of experience in international real estate project development and as Head of Real Estate Economics at the European Business School make her a valuable addition to the Supervisory Board, fulfilling the requirements profile set by the Supervisory Board exceptionally well. The court appointment runs until the end of the Annual General Meeting in 2023, at which the Supervisory Board will propose extending Prof. Kerstin Hennig's term of office.

CORPORATE GOVERNANCE

As in previous years, the Supervisory Board continuously monitored the Management Board in the 2022 financial year and provided it with regular advice on management of the Company. As always, supporting ongoing business development, continuously developing the business strategy and monitoring the corresponding risks were key focuses for the supervisory and advisory activities of the Supervisory Board. Throughout the year the Supervisory Board concentrated on the ongoing reporting on strategic projects and initiatives – such as the launch of the new Real Estate Investment Management segment – as well as the topics of ESG and digitalisation. As in the past, particular attention was devoted to issues concerning supervision law and IT.

The Supervisory Board assured itself in all cases that the management measures taken by the Management Board were lawful, appropriate, due and proper. The Management Board fulfilled its duties to provide information and informed the Supervisory Board in a regular, timely and comprehensive manner, both in writing and orally, about matters and measures relevant to the Company. This also included information on any deviations between target and actual figures or developments. The members of the Supervisory Board had sufficient opportunity at all times to critically assess the reports and proposed resolutions submitted by the Management Board, and to make their own suggestions during Supervisory Board committee meetings and during the plenary sessions. The Management Board also reported to the Chair of the Supervisory Board, as well as to the respective committee Chairs, on all material developments between meetings.

In particular, the Supervisory Board held in-depth discussions on, and reviewed the plausibility of, all business transactions material to the Company, on the basis of written and oral reports provided by the Management Board.

The Supervisory Board examined the requisite independence of the external auditors of the financial statements, Deloitte GmbH Wirtschaftsprüfungsgesellschaft ("Deloitte"), instructed Deloitte with the audit following the resolution of the Annual General Meeting, and agreed on the auditors' fee.

In principle, conflicts of interest can arise for Supervisory Board members between their Supervisory Board work for the Company and their other activities, for example due to an advisory role or directorship at a client, supplier, lender or other third party. The Supervisory Board's Rules of Procedure provide regulations for dealing with and mitigating such (imminent) conflicts of interest faced by pbb's Supervisory Board members or their related parties, in particular with regard to relationships with clients and/or relationships with other credit institutions. These include, for example, the disclosure of imminent conflicts of interest, the waiver of voting rights or non-participation in relevant discussions during meetings of the Supervisory Board or the relevant committee.

On 24 February 2023, the Supervisory Board addressed the Declaration of Compliance with the German Corporate Governance Code as amended on 28 April 2022 (www.pfandbriefbank.com/en/investors/mandatory-publications.html). Please also refer to the pbb Group's separate Remuneration Report, which is published on the Company’s website. With respect to the requirements of the German Corporate Governance Code, in conjunction with section 111 (5) of the German Public Limited Companies Act (*Aktiengesetz* – "AktG") concerning the target and current quotas of the under-represented gender on the Supervisory Board and the Management Board, please refer to the table outlining the composition of the Supervisory Board and its committees, and to the comments in the Corporate Governance Statement and the Non-financial Report.

MEETINGS OF THE SUPERVISORY BOARD

The members of the Supervisory Board in the financial year under review were:

Dr Günther Bräunig (Chairman), Hanns-Peter Storr (Deputy Chairman), Gertraud Dirscherl (since 2 February 2022), Dr Thomas Duhnkrack, Prof. Kerstin Hennig (since 19 July 2022), Susanne Klöß-Braekler, Georg Kordick, Olaf Neumann, Oliver Puhl (until 19 May 2022) and Heike Theißing.

The Supervisory Board of pbb held eight meetings in 2022, three of which were extraordinary meetings, plus an additional two-day strategy meeting, in which the Supervisory Board addressed the business plan, the changed market conditions and challenges, and in particular further strategic measures.

All ordinary meetings addressed the current business situation of pbb Group, which was discussed in detail with the Management Board in each case. The Management Board informed the Supervisory Board, regularly and in a timely manner, about pbb's financial situation and performance. During the ordinary meetings, the Supervisory Board also received reports on the risk position, risk management, new business, the liquidity situation and strategy, funding and share price developments, current regulatory issues and audits, as well as on significant events of material importance to the assessment of the Company's position, development and management. Furthermore, the Management Board continuously and comprehensively updated the Supervisory Board about IT topics, supervisory matters and audits, as well as recent developments during the year under review, such as the impact of the COVID-19 situation and the war in Ukraine.

In an extraordinary meeting on 20 January 2022, the Supervisory Board passed a resolution on the court appointment of Gertraud Dirscherl as a new member of the Supervisory Board and agreed on the dividend strategy, which is also important from a supervisory perspective. It also discussed, among other things, further courses of action for strategic projects.

The main items discussed at the ordinary meeting on 25 February 2022 were target settings at Bank level and variable remuneration for the members of the Management Board for the 2021 financial year, including re-determining the variable remuneration that had been held back for the 2016 to 2020 financial years (including penalty/malus review and back-testing). Other focal points were the Variable Remuneration Plan for 2022 and – following the court appointment of Gertraud Dirscherl – the new composition of the Supervisory Board's committees. Gertraud Dirscherl was elected by the Supervisory Board as a member of the Audit and Digitalisation Committee, the Risk Management and Liquidity Strategy Committee and the Remuneration Control Committee, with immediate effect. The Supervisory Board also discussed pbb's recovery plan, as required by regulators, and the report on the efficiency audit, which concluded the evaluation of the Supervisory Board and Management Board for 2021. Moreover, the annual Declaration of Compliance with the Corporate Governance Code, the Supervisory Board report and the Corporate Governance Statement were adopted, and training topics within the scope of regular professional development measures for the Supervisory Board for 2022 were determined. In addition, the Supervisory Board addressed the current status of ongoing strategic projects and initiatives.

In the accounts review meeting held on 18 March 2022, the consolidated financial statements for 2021 were approved and the annual financial statements for 2021 were adopted. In this context, the Supervisory Board also addressed the Non-financial Report. Moreover, the Annual General Meeting for 2022 was prepared and the relevant resolutions concerning the agenda, including the proposed resolutions submitted – in particular with regard to the appropriation of profit, the elections to the Supervisory Board and the appointment of the external auditors – were adopted. In addition to the amendments to the Suitability Policy to be approved by the Supervisory Board, the meeting also focused on reporting the current status of ongoing strategic projects.

The meeting of 5 May 2022 discussed the reporting on pbb Group's first quarter of 2022. The Supervisory Board discussed the remuneration reports for 2021 and approved the re-setting of quotas to rectify gender under-representation on the Supervisory Board and Management Board. It also made preparations for the Annual General Meeting and was updated on the current status of the Bank's ESG project and other initiatives.

During an extraordinary meeting on 19 May 2022 held after the Annual General Meeting, the Supervisory Board discussed and decided on the application for the court appointment of Prof. Kerstin Hennig following the resignation of Oliver Puhl, and elected Gertraud Dirscherl as the new Chair of the Audit and Digitalisation Committee with immediate effect.

During its meeting on 5 August 2022, the Supervisory Board discussed pbb Group's interim report as at 30 June 2022, and the review of the six-month financial statements and the Management Report by the external auditors. Other matters discussed and agreed upon included the dividend strategy and the 2022 pension adjustments for retired Management Board members. Prof. Hennig was elected to the Supervisory Board as a member of the Risk Management and Liquidity Strategy Committee with immediate effect.

On the basis of the debates held over the course of its annual strategy meeting on 20/21 October 2022, on 11 November 2022 the Supervisory Board discussed pbb Group's results for the third quarter 2022 and then adopted the multi-year plan and the business strategy presented by the Management Board for the financial years 2023 to 2025 as well as the IT and risk strategy for 2023. The current status of the launch of the Real Estate Investment Management segment was also discussed. Likewise, the Supervisory Board prepared the examination of efficiency for both the Management and Supervisory Boards and discussed the annual report of the Executive and Nomination Committee to the Supervisory Board concerning current corporate governance issues. In addition, the Supervisory Board determined parameters for risk-adjusted performance measurement at Bank level as well as targets for the Management Board for the 2023 financial year and approved the identification of risk takers as well as the assessment of appropriateness concerning the remuneration system. Furthermore, it addressed the changes to the Corporate Governance Code, focusing in particular on the Supervisory Board's skills matrix.

During an extraordinary meeting on 8 December 2022, the Supervisory Board addressed succession planning for Dr Günther Bräunig and resolved to appoint Dr Pamela Hoerr as Head of the future Real Estate Investment Management segment from 17 April 2023. The Supervisory Board received an update on the topics of ESG and investment management and agreed on a moderate adjustment to the calculatory reference values for the variable remuneration of the Management Board members with effect from 2023.

In principle, the Supervisory Board intends to comply with recommendation D.6 of the German Corporate Governance Code and to meet regularly and address certain items on its meeting agendas without the participation of the Management Board. However, the Supervisory Board will always decide on the Management Board's participation in meetings on a case-by-case basis and depending on the topics to be discussed. In 2022, the Supervisory Board invariably met together with the Management Board. This was due to the fact that the topics that could be addressed without the presence of the Management Board had already been discussed and prepared by the Executive and Nomination Committee and the Audit and Digitalisation Committee without the participation of the Management Board. It was therefore not appropriate from the Supervisory Board's point of view to discuss these topics again with all the members of the Supervisory Board without the presence of the Management Board.

SUPERVISORY BOARD COMMITTEES

During the 2022 financial year, the Supervisory Board established the following committees: Executive and Nomination Committee, Audit and Digitalisation Committee, Risk Management and Liquidity Strategy Committee and Remuneration Control Committee.

The Executive and Nomination Committee – comprising Dr Günther Bräunig (Chairman), Dr Thomas Duhnkrack and Susanne Klöß-Braekler – held seven meetings, two of which were extraordinary meetings.

The Committee addressed strategic and current regulatory issues as well as matters concerning the Management Board, for which it prepared corresponding proposals for the plenary meeting. These primarily involved achievement of the Management Board members' targets as well as the determination of their variable remuneration for 2021 (including penalty/malus review). The Committee also prepared the 2022 examination of efficiency for the Management Board as well as the Supervisory Board (including its committees); it informed the Supervisory Board about corporate governance issues and discussed the Corporate Governance Statement, including the Declaration of Compliance with the German Corporate Governance Code. The Executive and Nomination Committee also addressed the appointment of Supervisory Board committees, succession planning on the Supervisory Board and Management Board, and the re-setting of quotas for under-represented genders on the Supervisory Board and Management Board. The Committee also met to determine further training topics for the Supervisory Board in 2022, to make adjustments to the Suitability Policy, and to arrange for a 12-year grace period for the existing D&O insurance policy. It also provided regular updates on the status of the Bank's strategic initiatives and projects.

The Audit and Digitalisation Committee – comprising Gertraud Dirscherl (member since 25 February 2022 and Chair since 19 May 2022), Dr Günther Bräunig (member and Chair until 19 May 2022), Dr Thomas Duhnkrack and Hanns-Peter Storr – held a total of five meetings.

During these meetings, the Committee reviewed and discussed the Annual Financial Statements and Consolidated Financial Statements for 2021, the interim reports (or interim statements) for 2022, the reports by Internal Audit and external auditors on internal and external audit findings, as well as the audit report under section 89 (1) of the German Securities Trading Act (*Wertpapierhandelsgesetz* – "WpHG"). In addition, the Committee discussed the effects of current regulatory issues with the Management Board and was informed about the progress of ongoing audits. The Committee also addressed the mandate of the external auditor (Deloitte) and its audit plan for the 2022 financial year. Furthermore, the Committee satisfied itself as to the independence of the external auditor and recommended that the Supervisory Board propose to the Annual General Meeting to elect Deloitte as the external auditor for the 2022 financial year. It also addressed the findings of audits of the business organisation and the lending business, which had been conducted earlier than planned, as well as audits on money laundering, including key audit matters. The Audit and Digitalisation Committee also addressed current regulatory topics and supervisory audits. Furthermore, regular reports were received on the internal control system and the monitoring of key controls implemented, current litigation, compliance issues, data protection and IT security, special accounting issues, the results of external audits, as well as the audit plan established by Internal Audit and its implementation. Further discussions took place in two meetings with the Digital Advisory Board on the status of digitalisation measures and initiatives at the Bank.

The Risk Management and Liquidity Strategy Committee convened for five ordinary meetings. In addition, credit exposures requiring Supervisory Board approval were discussed, usually during monthly conference calls. Its members were Hanns-Peter Storr (Chairman), Dr Günther Bräunig, Gertraud Dirscherl (since 25 February 2022), Prof. Kerstin Hennig (since 5 August 2022) and Oliver Puhl (until 19 May 2022).

At its regular meetings, the Committee supported the Supervisory Board's monitoring of risk and liquidity management; it reviewed the Management Board's risk reporting and was involved in the credit approval process to the extent laid down in the Rules of Procedure. The Committee also regularly discussed new business developments as well as the liquidity and funding status and syndication business. During 2022, the Committee also discussed reports on sub-portfolios (including development financings); it dealt with specific loan loss allowances, the reporting of own funds in accordance with the German Solvency Regulation, country limits and asset/liability management. Moreover, the Committee held intensive discussions on the internal rating models (IRBA models), findings of the audit of the annual financial statements and the supervisory credit audits, updates to the business and risk strategy as well as developments on the real estate markets expected in the medium term. Furthermore, it focused on selected special topics such as the current impact of the Russian war of aggression on Ukraine, the ECB's climate stress test and the ECB's ICAAP/ILAAP survey. The Committee also dealt with the topics of market and model risk, operational risk, liquidity risk, credit risk and future reporting on the loan portfolio within the scope of selected focal topics. It also received updates on the status of new products launched at the beginning of the year (including mezzanine financing in the US) and the remuneration system.

In addition, the Committee addressed individual credit exposures on numerous occasions, usually in the form of monthly conference calls. These related to new business, regular resubmissions and approvals for change applications required to be submitted under the Committee's Rules of Procedure.

The Remuneration Committee – comprising Dr Günther Bräunig (Chairman), Gertraud Dirscherl (since 25 February 2022), Susanne Klöß-Braekler and Heike Theißing – held four meetings during 2022.

The Committee discussed remuneration reports, variable remuneration for the 2021 financial year, target agreements for and achievements of the Management Board members, as well as the variable remuneration plan 2022 for the Management Board. Furthermore, the Committee prepared the approval of the determination of risk-taker functions and the determination of parameters for risk-adjusted performance measurement at Bank level, as well as the target agreements with Management Board members, for the Supervisory Board's attention. Other key focuses of its meetings were the Bank's remuneration scheme, including its assessment of appropriateness, as well as the extension of the Deputy Remuneration Officer's term of office.

Individual members' attendance at meetings is shown in the table below. All meetings of the Supervisory Board and the individual committees were held as face-to-face meetings in the 2022 financial year, while the option to participate online was also offered and – to some extent – utilised ("hybrid meeting").

Supervisory Board of pbb in 2022

Name place of residence initial appointment	Principal activity	Supervisory Board function and meeting attendence	Committee function and meeting attendence Executive and Nomination Committee	Audit Committee	Risk Management and Liquidity Strategy Committee	Remuneration Committee
Dr. Günther Bräunig Frankfurt/Main, Germany 14 August 2009	Consultant and former Chairman of the management board of KfW	Chairman 8 of 8	Chairman 7 of 7	Chairman (till 19 May 2022) Member (since 19 May 2022) 5 of 5	Member 5 of 5	Chairman 4 of 4
Hanns-Peter Storr Frankfurt/Main, Germany 12 May 2021	Entrepreneur	Deputy Chairman 8 of 8		Member 5 of 5	Chairman 5 of 5	
Gertraud Dirscherl Landshut, Germany 2 Februrary 2022	Entrepreneur	Member 7 of 7		Member (till 19 May 2022) Chairman (since 19 May 2022) 4 von 4	Member 4 of 4	Member 3 of 3
Dr. Thomas Duhnkrack Kronberg/Taunus, Germany 21 July 2015	Entrepreneur	Member 7 of 8	Member 5 of 7	Member 4 of 5		
Prof. Dr. Kerstin Hennig Schmitten, Germany 19 July 2022	University Professor EBS University	Member 1 of 2			Member 1 of 1	
Susanne Klöß-Braekler Munich, Germany 12 May 2021	Independent supervisory and advisory board member, Investor, Senior Advisor	Member 8 of 8	Member 7 of 7			Member 4 of 4
Georg Kordick Poing, Germany (Employee representative) 22 Februrary 1990	Bank employee	Member 8 of 8				
Olaf Neumann Munich, Germany 12 May 2021	Bank employee	Member 8 of 8				
Oliver Puhl Frankfurt/Main, Germany 13 May 2016 - 19 May 2022	Entrepreneur	Member 4 of 4			Member 3 of 3	
Heike Theißing Munich, Germany (Employee representative) 7 July 2011	Bank employee	Member 8 of 8				Member 4 of 4

TRAINING AND CONTINUOUS PROFESSIONAL DEVELOPMENT

The members of the Supervisory Board assumed responsibility for undertaking any training or professional development measures necessary to fulfil their duties. The Company supported them to the extent required in this regard. Regular training sessions were held ahead of the regular Supervisory Board meetings in the form of presentations by external speakers. In 2022, members of the Supervisory Board addressed the topics of CRR III/CRD VI, digitalisation, current regulatory innovations, ESG from a CRE client perspective and overall bank management. This regular training programme for the entire Supervisory Board will be continued.

ANNUAL FINANCIAL STATEMENTS

Deloitte, the auditors of the annual and consolidated financial statements elected by the Annual General Meeting, audited the annual and consolidated financial statements of pbb as at 31 December 2022, including the consolidated management report, and issued them with unqualified audit opinions. The Bank has published the mandatory Non-financial Statement in a separate Non-financial Report. As part of its review obligation, the Supervisory Board availed itself of the option of a content-related external audit of the Non-financial Statement. In this context, Deloitte subjected the Non-financial Report to a limited assurance review in accordance with ISAE 3000.

Deloitte has submitted a declaration of its independence to the Supervisory Board. The financial statements documents and audit reports were submitted to all Supervisory Board members in good time. The Audit and Digitalisation Committee addressed the financial statements documents at its meeting on 16 March 2023. The annual financial statements and consolidated financial statements, the combined management report as well as audit reports were discussed in detail with the Management Board and representatives of the external auditors. Following its own review, the Supervisory Board did not raise any objections to the audit results submitted by the external auditors. In the accounts review meeting held on 17 March 2023, the Supervisory Board approved the consolidated financial statements prepared by the Management Board, and the annual financial statements were adopted. During the same meeting, the Supervisory Board also discussed the Management Board's proposal for the appropriation of profits with the Management Board. Following its examination, the Supervisory Board has endorsed the proposal for the appropriation of profit submitted by the Management Board.

The Supervisory Board would like to thank the Management Board and all of pbb's employees for their exceptional personal commitment and successful work during the 2022 financial year.

For the Supervisory Board

Dr Günther Bräunig
Chairman

Combined Management Report

Fundamental Information about the Group

The management report of Deutsche Pfandbriefbank AG ("pbb") and the Group management report have been combined in accordance with section 315 (5) in conjunction with section 298 (2) of the German Commercial Code (Handelsgesetzbuch – "HGB"). Information provided in this combined management report relates – if not explicitly stated otherwise – both to pbb Group as a whole, and to pbb as an individual entity. The report also includes information referring solely to the parent entity pbb (with explanations on the basis of the German Commercial Code (HGB)). The annual report of pbb in accordance with the HGB and the combined management report are published simultaneously in the German Company Register (Unternehmensregister).

GROUP STRUCTURE

pbb Group consists primarily of the parent entity pbb. In addition, pbb has subsidiaries and investments, which are presented in the Note "pbb shareholdings".

The headquarters are located in Munich/Garching. 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. pbb Group distributes 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 the another hand, 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, perspectively 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 legacy 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 in connection with 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 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 will 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 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 property 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 the beginning respectively the continuation of 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 (www.pbbdirekt.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 has 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.

COMPETITIVE POSITION

pbb possesses a strong local presence and expertise across the entire process chain in its core markets, by means of real estate experts, property law specialists and financing experts, up to the management of loan exposures. The Bank also actively deploys this local expertise to support clients with international transactions, with key decisions always being taken by the responsible Group level units at pbb's Garching headquarters near Munich.

STRATEGIC FOCUS

pbb Group's strategy focuses on continued, value-creating business success. Crucial success factors are, on the one hand, the assessment and appropriate pricing of credit risk in the lending business, and 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, increasing 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 accord, 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. Assets eligible for green loan financing are planned to account for 30% of pbb's REF portfolio by 2024/25.

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, with 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 and macroeconomic 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 objective for the financial years 2023 to 2025 remains to sustainably increase the earning power of pbb Group and the pbb share as a 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 increasing 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 investments 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's internal management system is pursuing a sustainable enhancement in value of the Group considering aspects of risks and regulatory requirements. The key objective is to achieve a balanced risk/return ratio. Risks should be compatible with external and internal risk-bearing capacity guidelines generating an adequate return on capital.

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

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 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 is a further financial key performance indicator. The aim is to increase it both by generating higher revenues and through strict cost discipline.
- Cost discipline and efficiency are monitored using the cost-income ratio, i.e. the ratio of general and administrative expenses and net income from write-downs and write-ups of non-financial assets to operating income.
- The notional amount of the funding in the Real Estate Finance (REF) segment is a significant factor influencing the future earning power and has therefore been redefined as an additional financial key performance indicator.
- The financing volume can be controlled, above all, by the volume of new business (including prolongations with maturities of more than one year), which also represent a financial key performance indicator. A present value approach is used for managing and calculating new business.
- pbb Group's capital adequacy process (ICAAP) is based on two approaches concerning risk-bearing capacity: the normative and the economic perspective. Whilst the normative perspective is aimed at the fulfilment of all capital-related legal requirements, supervisory demands and internal objectives, on an ongoing basis, the economic perspective covers all material risks which might threaten the institution's economic viability. Both perspectives are designed to supplement each other, safeguarding pbb Group's ability to survive. The prerequisites for evidencing risk-bearing capacity in the normative perspective are the ongoing compliance with minimum regulatory requirements over a medium-term horizon, plus evidence of adequate internal capital to cover material risks exceeding such minimum requirements. In the economic perspective, risk-bearing capacity is evidenced by sufficient internal capital being available to cover potential present-value losses. Details concerning the methodology used for analysing risk-bearing capacity, and the results obtained, are provided in the Risk and Opportunity Report.
- The CET1 ratio, a key management parameter, is determined on a regular basis; it is calculated by dividing Common Equity Tier 1 (CET1) by risk-weighted assets (RWAs). The Advanced Internal Rating Based Approach (Advanced IRBA) is used to determine regulatory capital requirements for the far predominantly portion of the real estate portfolio and the credit risk standardised approach (CRSTA) for the remaining portfolio.

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 and for this reason launched a cross-divisional ESG programme in line with its holistic ESG strategy. This programme bundles and further develops all ESG activities organisationally and operationally, and is expected to define non-financial performance indicators in the future. Alongside the sustainable finance focal point – which has already seen the implementation of green bonds and green loans – and the further development 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.

NON-FINANCIAL STATEMENT

Companies must assume responsibility for their actions in the environment in which they operate. The key principle of pbb Group's corporate responsibility philosophy is that of sustainability. This means long-term, responsible actions that take the consequences for all the company's stakeholders and for the environment into account.

pbb Group is convinced that sustainable and responsible business practices are an essential requirement for securing the future of the Company and increasing its value.

The pbb Group has identified a number of topics and aspects which they see as being most important to sustainability and details these in an extra report – the Non-financial Report, which is not part of the Combined Management Report. It was prepared in line with the requirements set forth in the German CSR Directive Implementation Act (CSR-Richtlinie-Umsetzungsgesetz) and, in addition, will be published via the German Federal Gazette (Bundesanzeiger). The Non-financial Report did not form part of the audit carried out by the external auditors, but was subject to a limited assurance review by Deloitte GmbH Wirtschaftsprüfungsgesellschaft in accordance with ISAE 3000.

Report on Economic Position

MACROECONOMIC ENVIRONMENT

Global economic growth slowed significantly in 2022. This was mainly due to the Russian invasion of Ukraine, high and rising inflation, and the slowdown in China. As a result, the International Monetary Fund (IMF) projects the global economy to grow by only 3.4% in 2022, down from 6.2% in the previous year (source: IMF). Russia's invasion of Ukraine continues to significantly destabilise the global economy. Gas prices in Europe have soared since 2021, raising concerns about energy shortages in Europe in the winter months. At the same time, inflationary pressures have led to a rapid tightening of monetary policy, which is dampening aggregate demand and investment (source: IMF).

According to current estimates, economic output in industrialised nations grew by 2.7% in 2022, after increasing by 5.4% in 2021 (source: IMF). At individual country level, economic development has been quite mixed, depending on the monetary and fiscal policy response to the increased cost of living, the impact of the war in Ukraine, and the effects of pandemic-related containment measures and supply chain disruptions on the respective economy. While the US, held back by conservative monetary and fiscal policy, has been comparatively weak, growth in many European countries was still above average. In Europe, the reopening effect of national economies resulted in solid growth during the first half of the year. Whilst the US economy grew by 2.0% in 2022, GDP in the euro area gained 3.5% (source: IMF).

Germany saw its economic output rise by 1.9% in 2022, following an increase of 2.6% in 2021 (source: IMF). Economic activity has thus returned to pre-crisis levels (source: Federal Statistical Office). In addition to the war in Ukraine and associated energy price increases, economic development in 2022 continued to be adversely affected by aggravated supply bottlenecks and shortages of materials as well as the ongoing, albeit subsiding, pandemic (source: Federal Statistical Office).

The French economy grew by 2.6% last year, compared to a very strong 6.8% in 2021 (source: IMF). GDP growth was still surprisingly positive in the first half of 2022. However, an energy price-induced inflation and ongoing supply chain disruptions burdened the economy, causing growth to slow significantly from the autumn onwards. Private consumption stagnated in the third quarter amid deteriorating consumer confidence, while investment grew strongly (source: European Commission).

Spain’s economy is expected to grow by 5.2% in 2022, having risen by 5.5% in the previous year (source: IMF). The large tourism sector has been instrumental in supporting the strong economic recovery during the summer months (source: European Commission).

Italy's economy is expected to grow by 3.9% in 2022, compared to 6.7% in the previous year (source: IMF).

Output in the UK is expected to rise by 4.1% in 2022, falling short of last year's 7.6% increase (source: IMF). The positive stimulus resulting from lifted pandemic restrictions was offset by a deterioration in trade conditions and higher energy and food prices. Domestic political turbulences also added to uncertainty over the course of the year (source: European Commission).

Growth momentum for pbb's core markets in Northern and Eastern Europe also declined significantly in 2022. In Sweden, growth was 2.6%, in Poland 3.8% (source: IMF). In Eastern Europe in particular, economic activity has weakened due to increasing uncertainty, the tightening of financing conditions, and adjustments in the economy to higher commodity prices (source: European Commission).

Unemployment rates have continued to decline in many countries thanks to the economic recovery in the first half of the year and fiscal support measures. In December 2022, unemployment in the euro area was 6.6%, almost half a percentage point lower than twelve months earlier (source: Eurostat). In Germany, the unemployment rate fell from 3.2% to 2.9% during this period (source: Eurostat). In France, unemployment fell from 7.4% in December 2021 to 7.1% a year later, while in Spain it receded from 13.3% to 13.1% during the same period (source: Eurostat). Unemployment also fell in Northern Europe, as was the case in Sweden which recorded a fall from 7.9% in December 2021 to 7.5% a year later (source: Eurostat). Similarly, the United Kingdom saw a decrease from 4.0% in December 2021 to 3.7% in December 2022 (source: Office for National Statistics). The United States also experienced a decline from 3.9% in December 2021 to 3.5% in December 2022 (source: Eurostat).

The rise in energy prices has prompted many European countries to adopt fiscal support measures to mitigate the impact of high inflation on households and businesses. In 2022, the cost of these packages was estimated to be at least 1.2% of GDP in the EU (source: European Commission). Due to the uncertain geopolitical situation, nations are also increasingly investing in defence, as evidenced by the €100 billion special fund approved for the German army (source: German government).

In the US, inflation went down to 6.5% in December 2022, having reached 9.1% in June, its highest level in the past forty years (source: Bureau of Labor Statistics). Price inflation in the euro area was 9.2% at the end of the year, which compares to the all-time high of 10.6% last October (source: Eurostat). At the same time, core inflation in the euro area rose to an all-time high of 5.2% in December, demonstrating that the recent easing in the headline rate is mainly due to declining energy prices (source: Eurostat).

On several occasions between July 2022 and the end of the year, the ECB raised its key interest rates significantly by a total of 250 basis points in order to combat persistently high inflation. As a result, the deposit rate rose from -0.5% within a short period of time, to 2.0% in December 2022 (source: ECB). In addition, the ECB decided to further scale back its accommodative monetary policy in December 2022. From March 2023, the central bank will start reducing the asset purchase programme (APP) portfolio by no longer reinvesting all the principal payments from maturing securities (source: ECB). In the US, the Federal Reserve (Fed) raised the target range for the fed funds rate in several stages, bringing it to a range of 4.25% to 4.50% by the end of 2022 (source: Fed). The Fed also started reducing the size of its balance sheet gradually in June 2022 by only partially reinvesting maturing securities (source: Fed).

In addition to the ongoing tense geopolitical situation, interest rates on the financial markets have been largely influenced by the global rise in inflation and the monetary policy response to it. As a result, rates have been rising across the board since the beginning of last year, since the markets were already anticipating the more conservative monetary policy of central banks over the course of the year. Interest rates on 10-year US Treasuries exceeded 4% in the autumn, while interest rates on German government bonds settled at just over 2% (source: Bloomberg).

On the currency markets, the US dollar gained 5.5% against the euro over the course of the year, due in part to the significantly more restrictive monetary policy in the US. The British pound, on the other hand, lost 5.4% against the European single currency, partly as a result of political uncertainty in the UK (source: Bloomberg).

SECTOR-SPECIFIC ENVIRONMENT

Overall Situation in the Banking Sector

The financial sector environment deteriorated last year due to a number of factors, including weaker growth prospects caused by rising inflation and higher interest rates, along with a price correction of some asset classes on the financial markets (source: ECB). However, the asset quality of euro area banks showed no signs of broad-based deterioration in the first three quarters of 2022, and the non-performing loans (NPL) ratio decreased again in the third quarter of 2022. Recent credit quality trends, however, suggest some increase in credit risk. Despite recent slight declines, banks' capital ratios remain solid (source: ECB).

In 2022, banks in the euro area reported an increase in return on equity from 6.0% at the beginning of 2022 to 7.6% in the third quarter of 2022 (source: ECB). This development was supported by lower operating costs, loan loss provisions remaining low, and improved earnings thanks to higher margins and higher lending volumes. However, a weaker economy and increased credit risk may weigh on bank profitability prospects in the medium term (source: ECB).

Overall, growing cyclical headwinds are compounded by structural challenges associated with low cost efficiency, limited revenue diversification, and remaining overcapacity in parts of the banking sector (source: ECB).

Commercial Real Estate Finance

Following the 2021 recovery, which continued into the first quarter of 2022, demand for real estate plummeted during the rest of the reporting year. High inflation and associated interest rate hikes strongly impact the real estate market. On the one hand, higher financing costs lead to upward pressure on yields. On the other hand, the considerable decline in spreads compared to investment alternatives has reduced the attractiveness of real estate for investors. Investment volumes in Europe were approximately 25% below the previous year's level, even though the outcome was supported by the relatively strong first half of the year. Very few properties were traded in the third and especially in the fourth quarter. The situation in the US was similar. A relatively strong first half-year contrasted with a weaker third quarter and a historically weak fourth quarter. This resulted in a 15% decline in transaction volume compared to the extremely strong previous year (source: RealCapitalAnalytics).

The decline in investment demand is affecting almost all asset classes, although some property types are more affected than others. Residential and logistics properties, which were in particularly high demand during the pandemic, saw a significant drop in investment figures. Likewise, office properties were traded materially less in 2022, with the remaining demand concentrated on prime properties with secure leases and low energy consumption. Yields have already started to rise across all asset classes as investment demand slowed. Depending on the direction the economy takes, further interest rate-driven risks are likely. This is also due to the fact that office properties have been trading at historically low yields in many markets, making them particularly vulnerable to interest rate-driven devaluations (sources: JLL, RealCapitalAnalytics, PMA). In addition, it is becoming apparent that older office properties will require substantial investment going forward to achieve a market-appropriate ESG standard. Office space in less attractive locations, which may be less suitable for the new hybrid working world, is also expected to suffer greater losses in value.

Public Investment Finance

As the European Commission states in its Autumn Economic Forecast, most EU member states are investing more than before the pandemic, with around half of these investments being financed by EU funding. Thus, according to the Commission, the ratio of public-sector investment relative to gross domestic product in the EU is expected to have risen from around 3.0% in 2019 to 3.3% in 2022. This would bring public-sector investment close to its pre-financial crisis level, which averaged 3.4% between 2004 and 2008. In addition, the continued suspension of EU fiscal rules in 2022 has slightly enlarged the room for manoeuvre for fiscal stimulus at national level. Nevertheless, at local body and regional levels, budgetary constraints are still very much an issue.

In France, too, the ratio of public-sector investment rose from 3.6% of GDP in 2021 to an estimated 3.7% in 2022, approaching the average level of 4.0% seen before the financial crisis (source: European Commission).

Value Portfolio

The non-strategic Value Portfolio (VP) segment almost exclusively comprises public budget financing exposures. In 2022, the credit spreads of countries on the European periphery settled above the previous year's level following a sustained widening of spreads from the second quarter of 2022 onwards (source: Bloomberg).

Funding Markets

Funding markets were significantly affected by the war in Ukraine, the effects and after-effects of the COVID-19 pandemic and the sharp rise in inflation in 2022. The ECB maintained its expansionary monetary policy for months before reacting to the high inflation with its first interest rate hike in July 2022, marking the beginning of the turnaround in interest rates in the euro area. A further three interest rate hikes were made by the end of 2022. Despite the general market volatility and large supply of euro benchmark covered bonds, spreads remained well supported, underlining the stability of the product, especially in uncertain times. The reduction in the ECB's purchase quota, related to its scaling back of bond purchases, and the new interest rate and yield environment made the asset class more attractive to investors again; the trend was accompanied by the return of cash investors. Investors tend to favour a shorter duration in this environment, which is why the primary market in the euro area has increasingly turned to shorter maturities. Some unsecured bank bonds saw significant spread widening, in the context of deteriorating market conditions (sources: ECB, Bloomberg).

COURSE OF BUSINESS

pbb believes its business model allows the Bank to remain well positioned to cope extremely well with the current market situation and feels that it is finding the right responses to major challenges – such as increasing earnings pressure and a difficult risk environment – which are beyond pbb Group's control or can only be influenced to a limited extent. At €213 million, profit before taxes in 2022 was within the forecast range of €200 million to €220 million published at the beginning of the year. Compared to expectations, net income from realisations was significantly lower in 2022, largely attributable to the considerable rise in market interest rates and associated low early termination fees from the Real Estate Finance business. In addition to improved net income from fair value measurement, financing volumes for the Real Estate Finance segment increased slightly, as forecast, by €1.7 billion to €29.3 billion (31 December 2021: €27.6 billion). These higher financing volumes has benefited net interest income in 2022 and should continue to do so in the future.

Despite the challenging macroeconomic environment, pbb Group's business model continues to meet its clients' needs. In the commercial real estate finance business, financing partners who remain reliable over the long run are currently in high demand. Overall, new business volume in Real Estate Finance of €9.0 billion was slightly below the forecast range (€9.5 billion to €10.5 billion), but still contributed to the higher financing volume in connection with the lower early repayment volume.

In line with the forecast for profit before taxes, the financial key performance indicators for profitability and efficiency were also within the ranges forecast at the beginning of the year. Return on equity after taxes was 5.5% (forecast between 4.5% and 5.5%) and the cost-income ratio was 45.6% (forecast between 45% and 47%).

Forecasts concerning pbb’s risk-bearing capacity at the beginning of 2022 were met during the course of the year. From a normative perspective, all regulatory minimum ratios were exceeded as at 31 December 2022; available financial resources (after deducting the minimum levels required for regulatory purposes) also covered all further material risks as at the reporting date. From an economic perspective, the capital available to cover the risks also exceeded economic capital requirements as at 31 December 2022.

The CET1 ratio stood at 16.7% as at 31 December 2022, above the 15.0% forecast.

DEVELOPMENT IN EARNINGS

At €213 million, pbb Group again posted solid profit before taxes in the reporting year, within the forecast published at the beginning of the year. The absence of earnings from floors, the end of TLTRO benefits, and generally higher funding costs compared to the previous year were largely offset by improved market-driven net income from fair value measurement and less loss allowance required. The decline in profit before taxes (€242 million) compared to the previous year was mainly down to lower early termination fees resulting from early repayments by clients – which pbb Group can only influence to a limited extent. In turn, this lower early repayment volume, in combination with the stable volume of new commercial real estate finance business, resulted in an increased financing volume for the Real Estate Finance segment (REF) compared to 31 December 2021. The items in the income statement developed as follows:

Deutsche Pfandbriefbank Group (pbb Group)

pbb Group		2022	2021
Operating performance			
Operating income	in € million	531	591
Net interest income	in € million	489	494
Net fee and commission income	in € million	8	8
Net income from financial instruments at fair value through profit or loss (Net income from fair value measurement)[1]	in € million	20	10
Net income from derecognition of financial instruments not measured at fair value through profit or loss (Net income from realisations)[1]	in € million	15	81
Net income from hedge accounting	in € million	-	-
Net other operating income	in € million	-1	-2
Net income from allowances on financial assets (Net income from risk provisioning)[1]	in € million	-44	-81
General and administrative expenses	in € million	-224	-219
Expenses from bank levies and similar dues	in € million	-32	-29
Net income from write-downs and write-ups of non-financial assets	in € million	-18	-20
Profit before tax	**in € million**	**213**	**242**
Income tax	in € million	-26	-14
Net income	**in € million**	**187**	**228**
Key ratios			
Earnings per share (basic and diluted)[2]	in €	1.27	1.58
Cost-income ratio	in %	45.6	40.4
Return on equity before tex	in %	6.3	7.5
Return on equity after tax	in %	5.5	7.0

[1] Solely the condensed and parenthesised line item descriptions are used subsequently.
[2] For calculation see note “Earnings per share”.

Net interest income of €489 million was close to the previous year's figure of €494 million. Significantly lower earnings from interest rate floors in the client business as a result of higher interest rate levels had a particularly negative impact. Net interest income benefited from the 50 basis point interest rate premium for liabilities under the TLTRO III programme, which applied up until 23 June 2022. As a result of the ECB's key interest rate increases, funding had a positive effect on net interest income due to interest being calculated using the average interest rate on the deposit facility of the last three years (until the contractual changes imposed by the ECB effective 23 November 2022), in conjunction with the investment of funds at current interest rates. The higher average portfolio of disbursed (and hence interest-bearing) REF financings of €28.6 billion (average volume in 2021: €27.2 billion) also favoured net interest income.

Net fee and commission income from non-accruable fees recognised directly through profit or loss amounted to €8 million (2021: €8 million).

At €20 million, net income from fair value measurement significantly exceeded the previous year's figure (2021: €10 million). Amid the volatile market environment with significantly higher interest rates, it was especially valuation effects from credit risk and funding costs that provided a positive contribution. Positive valuation effects also resulted from diverging interest rate developments between non-euro currencies and the euro area. Rising medium- and long-term interest rates had a partially offsetting effect on the present values of financial instruments required to be measured at fair value.

Net income from realisations of €15 million was significantly below the previous year (2021: €81 million), partly due to clients holding on to their financings, resulting in early repayments occurring much less often. This strengthened the long-term earnings base of net interest income, but led to lower early termination fees in net income from realisations. In 2022, the largest single item in net income from realisations was €4 million. In contrast, significantly higher early termination fees were recorded in the previous year; the three largest items alone accounted for a total of €38 million. In addition, compensation payable to pbb for early repayments was lower due to the increase in market interest rates.

As hedges were largely effective, net income from hedge accounting in accordance with IAS 39 was balanced again (2021: €0 million).

Net other operating income/expenses amounted to €-1 million (2021: €-2 million). On 27 October 2022, the ECB's Governing Council decided to adjust interest rates for the third series of targeted longer-term refinancing operations (TLTRO III) with effect from 23 November 2022. From pbb Group's perspective, this interest rate adjustment does not represent a substantial modification under IFRS 9, as the difference between the present value of the modified contractual payments and the carrying amount is not material in relation to the total funding volume. The expense resulting from the modification that still has to be recognised in the income statement amounted to €21 million and was recognised immediately as an expense; due to the one-off nature of the contractual amendment, it was reported in net other operating income/expenses. In addition, income from reversals of provisions outside the lending business significantly exceeded the costs from currency translation. A reversal of provisions was possible, for example, following the conclusion of a tax audit.

At €-44 million, net income from risk provisioning was considerably less negative than in the previous year (2021: €-81 million). For financial instruments that showed no signs of impaired credit quality (stage 1 and stage 2), an addition of €5 million (2021: €35 million) was allocated to loss allowances. This included a net expense of €15 million (2021: addition of €54 million) from the reversal of the existing management overlay for risks in connection with the COVID-19 pandemic and the creation of a new management overlay for specific risks from the financing of office properties. It also included a net gain of €52 million from changes to three accounting estimates. However, stage 1 and stage 2 loss allowances increased due to the bleaker economic outlook overall and worsened parameters for some financings. Additions of €39 million (2021: €47 million) were allocated for those financial instruments with indications of impaired credit quality (stage 3). Additions to stage 3 loss allowances mainly related to financing for three shopping centres in the UK and one in Germany. All three shopping centres are located in medium-sized cities in predominantly structurally weaker regions. Negative developments (Ukraine war, rising energy prices, inflation, higher interest rates, long-term effects of Brexit, investor sentiment, etc.) led to a further reduction in expected returns from financings. Shopping centres in these macro locations have not been a target business for years, and pbb is generally very cautious about this asset class. The largest allowance recognised for one individual transaction totalled €17 million.

Stage 1 and stage 2 model-based loss allowances are determined on the basis of information about past events, current economic conditions and forecasts of future economic developments. This involves applying a weighting to three scenarios with the following probabilities remaining constant over the course of the 2022 financial year: a baseline (55%), a positive (5%), and a negative scenario (40%). The models incorporate current expectations by the ECB, other central banks and other external sources concerning future unemployment rates, interest rate levels, GDP and real estate market values.

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 reporting date. pbb Group has two Russia-related public investment financings with a gross carrying amount totalling €24 million in its portfolio, which are guaranteed by the Federal Republic of Germany to a very large extent. The uncovered part amounted to just under €2 million, nearly all of which was recognised as stage 3 impairment.

However, the war between Russia and Ukraine and the subsequent reciprocal sanctions have macroeconomic consequences such as reduced economic growth, significantly increased inflation, higher interest rates and supply chain issues, all of which could have an indirect impact on pbb Group's financings. Due to the war, any assessment of future developments is currently characterised by a particularly high degree of uncertainty.

Apart from the high level of macroeconomic uncertainty, there are also specific uncertainty factors which affect pbb Group's portfolios to varying degrees. One contributing factor is that the financed properties have developed inconsistently in recent years, for example in terms of yields. Future development of the financed office properties in the portfolio is particularly uncertain. Demand for office property was high until the outbreak of the COVID-19 pandemic – and although office property prices have not fallen over the three years since, uncertainty remains high for office properties going forward. Among the reasons for this is the trend towards working from home, which may lead to lower demand for office space. Another factor is a heightened need for improved sustainability of office properties. This represents a particular challenge for office properties, as the changing world of work is also intensifying the shift to a tenant's market. Both of these factors may lead to a significant decline in the market values of office properties down the road. This risk could hit older office properties in less desirable locations especially hard.

The market value forecasts used in the model to determine stage 1 and stage 2 loss allowances for office financings are based primarily on external sources. These projections only partially account for the specific risks of the trend towards working from home and the need for improved sustainability. Notably, the worsening of indicators towards the end of 2022 has not yet been adequately reflected. pbb Group has therefore provided for the additional risk in the form of a management overlay in the amount of €69 million, assuming a steady continuation of its model. A discount was applied to the expected office property market values in the baseline and negative scenarios. Moreover, the risk of a further rise in interest rates was taken into account in the negative scenario, as this may not be offset – or only to a limited extent – by future rent increases, especially for office properties outside of prime locations.

At the same time, pbb Group completely reversed the €54 million management overlay which was in place on 31 December 2021 to consider delayed defaults and bankruptcies following government support measures to mitigate the economic consequences of the COVID-19 pandemic. This decision was based on the almost complete withdrawal of COVID-19-related social restrictions and hence the significantly lowered risk of credit defaults in connection with the pandemic.

General and administrative expenses of €224 million were up slightly (2.3%) on the same period of the previous year (€219 million). At €126 million, personnel expenses were below the previous year's level (2021: €132 million). This was due to higher provisions for termination benefits in the previous year. The average number of employees remained virtually unchanged. Other administrative expenses of €98 million were above the previous year's level (2021: €87 million) due to higher costs for regulatory and strategic projects.

Expenses for bank levies and similar duties of €32 million (2021: €29 million) mainly comprised expenses for the bank levy of €31 million (2021: €27 million), taking into account pledged cash collateral of 15 per cent. The year-on-year increase in expenses for the SRB/bank levy resulted, among other things, from a significant increase in the fund's target volume at EU level. Furthermore, this item comprised expenses of €1 million (2021: €2 million) for the German deposit guarantee scheme.

Net income from write-downs and write-ups on non-financial assets totalling €-18 million included scheduled depreciation of tangible assets and amortisation of intangible assets, and was more or less in line with the previous year's level (2021: €-20 million).

Income taxes (€-26 million; 2021: €-14 million) were attributable to current taxes (€-13 million; 2021: €-38 million) and to deferred taxes (€-13 million; 2021: €24 million).

Operating Segments

Segment reporting is based on management reporting results. More information on this can be found in the note on "Notes to Segment Reporting by Operating Segment".

Real Estate Finance (REF)

The REF business segment comprises financing for professional real estate investors. The volume of new business (including extensions by more than one year) amounted to €9.0 billion (2021: €9.0 billion); of this amount €2.7 billion (2021: €2.6 billion) was attributable to extensions. Allocated equity increased as a result of the volume declines of the other segments in line with the strategy. As forecast at the start of 2022, the REF segment made the largest contribution by far to the overall result.

Real Estate Finance		**2022**	**2021**
Operating performance			
Operating income	in € million	460	511
Net interest income	in € million	420	417
Net fee and commission income	in € million	8	8
Net income from fair value measurement	in € million	14	6
Net income from realisations	in € million	16	81
Net income from hedge accounting	in € million	-	-
Net other operating income	in € million	2	-1
Net income from risk provisioning	in € million	-69	-79
General and administrative expenses	in € million	-196	-189
Expenses from bank levies and similar dues	in € million	-21	-18
Net income from write-downs and write-ups of non-financial assets	in € million	-16	-17
Profit before tax	**in € million**	**158**	**208**
Key ratios			
Cost-income ratio	in %	46.1	40.3
Balance-sheet-related measures		**31.12.2022**	**31.12.2021**
Financing volumes	in € billion	29.3	27.6
Risk-weighted assets[1)]	in € billion	15.5	15.1
Equity[2)]	in € billion	2.4	2.1

[1)] Including weighted credit risk positions and capital charges for market risk positions and operational risk, using a scaling factor of 12.5.
[2)] Excluding accumulated other comprehensive income (OCI) from cash flow hedge accounting, financial assets at fair value through OCI, additional equity instruments (AT1 capital) and non-controlling interest. Numbers as of 31 December 2021 were adjusted due to IFRS 8.29 (see note "Consistency").

Net interest income benefited from a higher average financing volume of €28.6 billion (2021: €27.2 billion), whilst a lower TLTRO III contribution and lower earnings from floors had a negative impact. It was especially valuation effects from credit risk and funding costs that provided for a higher net income from fair value measurement. Net income from realisations declined as a result of significantly lower early termination fees. Net income from risk provisioning resulted from additions for financings with an indication of an impaired credit quality (stage 3) of €37 million, and net additions for financings without an indication of impaired credit quality (stages 1 and 2). General and administrative expenses were in line with pbb Group's development.

Public Investment Finance (PIF)

The PIF business segment comprises financings extended primarily for the provision of public infrastructure. In view of increasingly apparent public-sector reticence regarding (privately financed) infrastructure investments, pbb does not aim at further business growth in this sector. Profit before tax was €9 million (2021: €15 million) and was therefore in line with expectations.

Public Investment Finance		2022	2021
Operating performance			
Operating income	in € million	32	40
Net interest income	in € million	32	37
Net fee and commission income	in € million	-	-
Net income from fair value measurement	in € million	1	1
Net income from realisations	in € million	-	2
Net income from hedge accounting	in € million	-	-
Net other operating income	in € million	-1	-
Net income from risk provisioning	in € million	-1	-
General and administrative expenses	in € million	-17	-19
Expenses from bank levies and similar dues	in € million	-4	-4
Net income from write-downs and write-ups of non-financial assets	in € million	-1	-2
Profit before tax	**in € million**	**9**	**15**
Key ratios			
Cost-income ratio	in %	56.3	52.5
Balance-sheet-related measures		**31.12.2022**	**31.12.2021**
Financing volumes	in € billion	4.5	5.2
Risk-weighted assets[1)]	in € billion	0.6	0.7
Equity[2)]	in € billion	0.1	0.2

[1)] Including weighted credit risk positions and capital charges for market risk positions and operational risk, using a scaling factor of 12.5.

[2)] Excluding accumulated other comprehensive income (OCI) from cash flow hedge accounting, financial assets at fair value through OCI and additional equity instruments (AT1 capital) and non-controlling interest.

Net interest income declined in line with the lower average financing volume of €4.9 billion (2021: €5.5 billion) due to regular maturities. General and administrative expenses, which mainly resulted from allocated overhead costs, declined due to the lower financing volume. They include expenses of the subsidiary CAPVERIANT GmbH, which operates a digital platform for public sector borrowers and institutional investors.

Value Portfolio (VP)

The Value Portfolio (VP) operating segment includes pbb Group's non-strategic portfolios and activities, and is being reduced in line with pbb's strategy. Profit before tax amounted to €44 million (2021: €17 million) and exceeded expectations, in particular due to the positive risk provisioning result.

Value Portfolio		2022	2021
Operating performance			
Operating income	in € million	37	38
Net interest income	in € million	35	38
Net fee and commission income	in € million	-	-
Net income from fair value measurement	in € million	5	3
Net income from realisations	in € million	-1	-2
Net income from hedge accounting	in € million	-	-
Net other operating income	in € million	-2	-1
Net income from risk provisioning	in € million	26	-2
General and administrative expenses	in € million	-11	-11
Expenses from bank levies and similar dues	in € million	-7	-7
Net income from write-downs and write-ups of non-financial assets	in € million	-1	-1
Profit before tax	**in € million**	**44**	**17**
Key ratios			
Cost-income ratio	in %	32.4	31.6
Balance-sheet-related measures		**31.12.2022**	**31.12.2021**
Financing volumes	in € billion	9.9	10.9
Risk-weighted assets[1)]	in € billion	0.2	0.3
Equity[2)]	in € billion	0.3	0.4

[1)] Including weighted credit risk positions and capital charges for market risk positions and operational risk, using a scaling factor of 12.5.

[2)] Excluding accumulated other comprehensive income (OCI) from cash flow hedge accounting, financial assets at fair value through OCI, additional equity instruments (AT1 capital) and non-controlling interest. Numbers as of 31 December 2021 were adjusted due to IFRS 8.29 (see note "Consistency").

The average financing volume declined – in line with the Group's strategy – to €10.3 billion (2021: €11.2 billion), which resulted in lower net interest income. The higher net income from fair value measurement was mainly due to valuation effects from credit risk and funding costs. An improved rating of a Southern European region led to positive net income from risk provisioning for financings without indication of impaired credit quality.

Consolidation & Adjustments (C&A)

C&A reconciles the segment results with the consolidated result. Besides consolidation adjustments, this includes certain income and expense items outside the operating segments' responsibility.

Consolidation & Adjustments		2022	2021
Operating performance			
Operating income	in € million	2	2
Net interest income	in € million	2	2
Net fee and commission income	in € million	-	-
Net income from fair value measurement	in € million	-	-
Net income from realisations	in € million	-	-
Net income from hedge accounting	in € million	-	-
Net other operating income	in € million	-	-
Net income from risk provisioning	in € million	-	-
General and administrative expenses	in € million	-	-
Expenses from bank levies and similar dues	in € million	-	-
Net income from write-downs and write-ups of non-financial assets	in € million	-	-
Net income from restructuring	in € million	-	-
Profit before tax	**in € million**	**2**	**2**
Balance-sheet-related measures		**31.12.2022**	**31.12.2021**
Risk-weighted assets[1)]	in € billion	0.7	0.7
Equity[2)]	in € billion	0.4	0.4

[1)] Including weighted credit risk positions and capital charges for market risk positions and operational risk, using a scaling factor of 12.5.

[2)] Excluding accumulated other comprehensive income (OCI) from cash flow hedge accounting, financial assets at fair value through OCI and additional equity instruments (AT1 capital) and non-controlling interest.

Net interest income was the only income item and arose from the investment of equity allocated to C&A.

DEVELOPMENT IN ASSETS

Assets

in € million	31.12.2022	31.12.2021
Cash reserve	1,044	6,607
Financial assets at fair value through profit or loss	1,075	1,180
Positive fair values of stand-alone derivatives	562	540
Debt securities	117	132
Loans and advances to customers	394	505
Other financial assets at fair value through profit or loss	2	3
Financial assets at fair value through other comprehensive income	1,692	1,258
Debt securities	1,409	943
Loans and advances to customers	283	315
Financial assets at amortised cost after credit loss allowances	48,734	48,087
Financial assets at amortised cost before credit loss allowances	49,121	48,429
Debt securities	5,377	6,893
Loans and advances to other banks	5,763	2,646
Loans and advances to customers	37,839	38,710
Claims from finance lease agreements	142	180
Credit loss allowances on financial assets at amortised cost	-387	-342
Positive fair values of hedge accounting derivatives	262	1,009
Valuation adjustment from porfolio hedge accounting (assets)	-84	5
Tangible assets	27	32
Intangible assets	49	42
Other assets	58	50
Current income tax assets	31	3
Deferred income tax assets	119	129
Total assets	**53,007**	**58,402**

General Development in Assets

Total assets declined compared to the previous year-end. One reason for the decline was a significantly lower cash reserve, as any available liquidity in the central bank accounts was used for the partial repayment of TLTRO III liabilities. Syndications led to a decrease of financial assets measured at fair value through profit or loss, while financial assets at fair value through other comprehensive income increased due to the purchase of (government) bonds in the liquidity portfolio. Financial assets measured at amortised cost were higher due to a larger number of repurchase agreements. The increase in loans and advances to customers in the REF segment was offset by pbb Group's strategical decrease in bonds and notes as well as municipal loans in the other segments. Furthermore, effects from fair value hedge accounting (adjustments of the carrying amount of the underlying transaction by the gain/loss attributable to the hedged risk) led to a decline in exposure after interest rates had increased. Higher interest rates also led to a significant lower fair value of hedging derivatives.

Investments

Additions to intangible assets amounted to €18 million during the year under review (2021: €16 million). Services rendered by third parties were used for internally developed software. These investments covered all segments of pbb Group.

DEVELOPMENT IN FINANCIAL POSITION

Liabilities and equity

in € million	31.12.2022	31.12.2021
Financial liabilities at fair value through profit or loss	686	559
Negative fair values of stand-alone derivatives	686	559
Financial liabilities measured at amortised cost	47,672	52,656
Liabilities to other banks	7,507	10,633
Liabilities to customers	17,889	20,100
Bearer bonds	21,641	21,268
Subordinated liabilities	635	655
Negative fair values of hedge accounting derivatives	1,125	1,372
Valuation adjustment from porfolio hedge accounting (liabilities)	-112	70
Provisions	135	231
Other liabilities	57	55
Current income tax liabilities	19	34
Liabilities	**49,582**	**54,977**
Equity attributable to the shareholders of pbb	3,125	3,124
Subscribed capital	380	380
Additional paid-in capital	1,637	1,637
Retained earnings	1,214	1,202
Accumulated other comprehensive income	-106	-95
from pension commitments	-49	-111
from cash flow hedge accounting	-26	-28
from financial assets at fair value trough other comprehensive income	-31	44
Additional equity instruments (AT1 capital)	298	298
Non-controlling interest in equity	2	3
Equity	**3,425**	**3,425**
Total equity and liabilities	**53,007**	**58,402**

Liabilities

Total liabilities as at 31 December 2022 were below the previous year-end. In particular, financial liabilities measured at amortised cost, which represent the most significant item within liabilities, declined significantly. In the case of financial liabilities measured at amortised cost, liabilities to financial institutions decreased due to the partial repayment of TLTRO III; the decrease exceeded the increase in the volume of repurchase agreements. Within liabilities to customers, deposit-taking business increased. However, this was more than offset by the decline in promissory note loans and (public sector) Pfandbriefe due to maturities and lower fair value hedge accounting adjustments (adjustments of the carrying amount of the underlying transaction by the gain/loss attributable to the hedged risk) as a result of higher interest rate levels. As with the assets side, the increase in interest rate levels led to a lower fair value of hedging derivatives.

Equity

The changes in equity are presented in the “Equity” note.

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.

Key Regulatory Capital Ratios

At the balance sheet date, the CET1 ratio amounted to 16.7% (31 December 2021: 17.1%), the own funds ratio to 21.8% (31 December 2021: 22.4%) and the leverage ratio to 5.9% (31 December 2021: 6.0%) (after confirmation of the 2022 financial statements less AT1 coupon and less proposed dividend – subject to approval by the Annual General Meeting). Please refer to the Risk and Opportunity Report ("Internal Capital Adequacy Assessment Process (ICAAP)" section) for further information and calculation methodology on the key regulatory capital ratios.

Liquidity

Principles and Objectives of Liquidity and Financial Management
The primary objective of pbb Group's liquidity and financial management is to secure and manage the liquidity of pbb and its subsidiaries in such a way that their financing and funding capabilities are assured at all times. Central liquidity management is carried out by raising and investing liquidity on the money and capital markets and on the interbank money market as well as central banks.

Liquidity management within pbb Group is performed centrally by pbb's Treasury division. The sales units are refinanced internally on a one-to-one basis when they enter into new business. This means that risks are bundled and centrally managed.

Asset/liability management for pbb Group is performed by the Group Asset and Liability Committee (ALCO). The maturity structure can be found in the note on "Remaining terms of certain financial assets and liabilities."

Liquidity Ratio
As at 31 December 2022 the liquidity coverage ratio (LCR) was 171% (31 December 2021: 227%) and the net stable funding ratio (NSFR) was at 110% (December 2021:118%).

Funding
In the 2022 financial year, pbb Group placed €5.9 billion (2021: €5.1 billion) of new long-term funding volume in the market. In contrast, repurchases and terminations totalled €0.3 billion (2021: €0.6 billion). The total amount of funding comprises both Pfandbrief issues and unsecured liabilities, issued both in the form of benchmark bonds and private placements. At €3.4 billion (2021: €3.2 billion), Pfandbriefe accounted for more than half of the total volume. Unsecured funding accounted for €2.5 billion (2021: €1.9 billion), with almost all of the volume issued as senior preferred bonds. Most transactions were denominated in euro, and were placed as fixed-rate bonds. Unhedged interest rate exposures are usually hedged by swapping fixed into floating interest rates. To minimise foreign currency risk between assets and liabilities, bonds were issued in USD, GBP and SEK, with an equivalent value of €1.2 billion (compared to long-term funding placed in the market totalling €5.9 billion). Foreign currency transactions were converted into euro at the prevailing exchange rate at the time of the issue. As part of its holistic ESG strategy, pbb issued unsecured benchmark bonds with a volume of just under €1.9 billion as Green Bonds.

Overnight and term deposits from retail investors amounted to €4.4 billion as at 31 December 2022 (31 December 2021: €3.2 billion).

Ratings

In the 2022 financial year, the ratings mandated by pbb were subject to the following changes:

Standard & Poor's confirmed pbb's long-term issuer rating of "BBB+", lifting its outlook from "negative" to "stable".

With its rating action of 18 March 2022, Standard & Poor's removed the uncertainty surrounding the future application of Additional Loss Absorbing Capacity (ALAC): the – until then – additional notches assigned to the issuer rating and the rating of senior preferred liabilities were reduced by one notch each, while the Standalone Credit Profile (SACP) improved to the same extend due to the peer group analysis (Comparable Ratings Analysis). As a result, inter alia the long-term issuer rating was confirmed at "BBB+", whilst the ratings of senior non-preferred liabilities were upgraded by one notch to "BBB-". The ratings of other subordinated liabilities also improved by one notch each. The rating outlook was upgraded from "Negative" to "Stable".

Standard & Poor's again confirmed ratings and outlook on 29 November 2022.

Senior unsecured ratings and ratings for Pfandbriefe of Deutsche Pfandbriefbank AG (pbb)[1]

	31.12.2022		31.12.2021	
	Standard & Poor's	Moody's	Standard & Poor's	Moody's
Long-term Issuer Rating/Outlook	BBB+/stable	-	BBB+/negative	-
Short-term Issuer Rating	A-2	-	A-2	-
Long-term "Preferred" Senior Unsecured Debt Rating[2]	BBB+	-	BBB+	-
Long-term "Non-preferred" Senior Unsecured Debt Rating[3]	BBB-	-	BB+	-
Mortgage Pfandbriefe	-	Aa1	-	Aa1
Public Sector Pfandbriefe	-	Aa1	-	Aa1

[1] This overview does not contain all ratings/outlooks.
[2] S&P "Senior Unsecured Debt".
[3] S&P "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 an individual security may not be rated at all. For the evaluation and usage of ratings, please refer to the rating agencies' pertinent criteria and explanations, and the relevant terms of use, which are to be considered. Ratings should not serve as a substitute for personal analysis. They do not constitute a recommendation to purchase, sell or hold securities issued by pbb.

Off-balance sheet commitments

Irrevocable loan commitments of €3.0 billion as at the balance sheet date (31 December 2021: €3.1 billion) represent the majority of off-balance sheet commitments. Contingent liabilities on guarantees and warranties amounted to €0.1 billion as at 31 December 2022 (31 December 2021: €0.2 billion).

MATERIAL RELATED PARTY TRANSACTIONS

No material transactions with related parties were entered into during the financial years 2022 and 2021. Please refer to the note on "Relationships with Related Parties" for more details.

SUMMARY

Despite a challenging market environment, pbb Group generated pre-tax profit of €213 million in 2022 (2021: €242 million), within the range forecast at the beginning of 2022. As at the reporting date, funding volume in the strategic Real Estate Finance segment of €29.3 billion slightly exceeded the previous year's figure (31 December 2021: €27.6 billion), reflecting new business volume of €9.0 billion combined with lower early repayments.

Risk and Opportunity Report

The Risk and Opportunity Report shows the identified risks and the opportunities for the individual risk types within the framework of the implemented risk management and risk controlling system. For more general or bank-wide risks and opportunities, please refer to the Report on Expected Developments.

ORGANISATION AND PRINCIPLES OF RISK AND CAPITAL MANAGEMENT

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

Organisation and Committees

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

The principles, methods and processes of pbb'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. The risk management system comprises the plausible and systematic identification, analysis, valuation, management, documentation, monitoring and communication of all major risks.

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

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

The Management Board notifies the Supervisory Board with regard to significant changes in the business and risk strategies as well as the risk profile of pbb Group. The RLA of the Supervisory Board is responsible for controlling the overall risk situation and for monitoring, establishing and improving an efficient risk management system, and is also responsible for the liquidity management and assurance and resolves upon necessary credit approvals for credit decisions. The Management Board notifies this committee of all increases to specific allowances and the creation of new specific allowances (impairment stage 3) in excess of €5 million and also notifies this committee at regular intervals of major exposures with higher levels of risk.

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

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

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

The Watchlist Committee is chaired by the CCO and meets once a month. It discusses all exposures identified by the early warning system and, if appropriate, decides on individual risk mitigating measures to be implemented by the relevant departments. Where necessary, the committee takes decisions regarding the need to transfer exposures to CRM REF Workout, which then takes the necessary restructuring or workout steps on the basis of an individual exposure strategy and also decides on returning the corresponding transaction to regular coverage after recovery. It is then the responsibility of each relevant credit department to obtain all the requisite lending decisions for implementing measures, in line with lending authority regulations.

If there are indicators for an impairment of an exposure's credit rating (impairment stage 3) in accordance with IFRS 9, the result – after determining the extent of any such impairment – is presented to the Risk Provisioning Committee (RPC). It is chaired by the CRO. The RPC takes decisions within the scope of a pre-defined assignment of approval powers and in accordance with IFRS and the German Commercial Code (HGB).

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

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

Besides the Risk Committee, there are the Asset and Liability Committee (ALCO) as well as the Legal and Regulatory Risk Committee (LRRC). The tasks of the ALCO are: managing liquidity as well as pbb Group's balance sheet structure, defining long-term financing strategies, managing capital, regulatory capital ratios, as well as market risk exposure. The LRRC advises on legal and regulatory requirements, and may assign responsibility for implementation to business divisions, following consultation. The Outsourcing Committee deals with the implementation of regulatory and statutory requirements as well as preparation of, and compliance with, internal guidelines. Moreover, it handles the overall management and monitoring of outsourced activities.

In addition, an ESG Committee, which deals with ESG aspects and ESG risks throughout the pbb Group, is established. 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 the pbb Group. The Committee develops the ESG targets and the measures required to achieve them.

Organisation of Risk Management
31 December 2022

<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.

Chief Risk Officer (CRO) In addition to the above-mentioned committees, the following organisation units of the CRO, form an integral part of the risk management system:

Organisation of Chief Risk Officer (CRO)
31 December 2022

<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 comprises the following monitoring and back-office units at pbb Group level:

> The unit Risk Management & Control, which is amongst others responsible for monitoring market, credit, operational and liquidity risks as well as the risk-bearing capacity and which is also responsible for Group-wide uniform risk measuring methods and risk reports.

> The unit of the Chief Credit Officer, which is responsible for the analysis of new business and portfolio management. In addition, CRM REF also comprises the Workout unit, which is responsible for the recovery and workout of all critical exposures, and the central unit Credit Processes, which is responsible in particular for the organisation of the Credit Committee, the continuous improvement of data quality within CRM and implementation of regulatory requirements in the credit processes.

- The unit Operations, which is responsible for the global servicing and administration of the loan portfolio (including technical implementation of loan agreements), settlement of capital markets transactions, administration and processing of the Group's securities and derivatives portfolios, as well for handling domestic and international payments.
- The **Compliance** department, which influences the conduct of pbb Group, in compliance with applicable laws and regulations, through methods and procedures as well as through audit and reporting processes. 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 market compliance. It is also responsible for general compliance topics. In this manner, the Compliance function opposes any risks that can arise from non-compliance with legal rules, as well as external and internal requirements. The Compliance division 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 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, as well as for the monitoring of financed developments. The area of responsibility of Group Internal Audit comprises risk-oriented regular as well as event-driven audits of processes, controls and systems. This also includes the revision of the risk management system and the internal control system.

Risk Strategy and -Policies

In conjunction with the business strategy, the risk strategy provides the basis for planning and business policy action. The risk strategy has been defined on the basis of the Group-wide risk appetite; it reflects pbb's strategic direction as a specialist for real estate finance and public investment finance with a focus on Pfandbrief funding. Furthermore, the guidelines and policies, which in their entirety 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 for pbb Group's operating segments and legal entities. It is reviewed and updated at least annually.

As part of the annual strategy development process, the risk strategy for 2022 was drawn up and aligned with the business strategy, adopted by the Management Board and approved by the Supervisory Board. Against the backdrop 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.

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

Risk Reporting

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

Risk Quantification and Risk 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 the capitalisation and liquidity status, and scans them for the existence of potential risk concentrations. Where possible, risks are quantified using applicable risk models or other methods.

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

The approach to managing risk, capital and liquidity is based on the Internal Capital Adequacy Assessment Process (ICAAP) and the Internal Liquidity Adequacy Assessment Process (ILAAP), each of which is seen in a normative and an economic perspective. The normative perspective is geared towards ongoing fulfilment of all of the Bank's capital- and liquidity-related legal requirements and supervisory demands. The economic perspective covers all material risks which might threaten pbb Group's economic viability, with a focus on the present-value analysis of risks.

Besides the measurement, limitation and monitoring of risks, all risk management approaches also comprise regular reporting as well as escalation processes; they are supplemented by scenario analyses and stress testing. To adequately monitor ESG risks, pbb is working on integrating the various ESG risk factors into the relevant types of risk, including monitoring, quantification and reporting. Moreover, climate-specific stress tests and scenario analyses are continuously being further developed. Within the framework of these strategic management approaches, pbb defines its risk appetite, which sets out the scope within which pbb is prepared to assume risks. This information is used to derive input for operative management, through limit systems, committee decisions, and other management decisions.

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

ORGANISATION AND PRINCIPLES OF THE INTERNAL CONTROLLING SYSTEM

The chapter "Organisation and principles of the internal controlling system" was not examined by the external auditors.

With the new Act to Strengthen Financial Market Integrity, listed public limited companies are not only required to establish an appropriate and effective risk management system (RMS) but must also establish an appropriate and effective internal control system (ICS). The RMS and ICS must comprise a compliance management system (CMS) that is aligned with the company's risk situation. These systems (RMS, ICS, CMS) are already embedded in pbb's corporate culture.

Internal control system – concept

The ICS is an integral part of the RMS. It defines all measures that detect risks and errors in the processes, support the reliability of the processes and therefore safeguard the company's available assets and compliance with legal and regulatory provisions, and that detect or avoid fraudulent actions.

In connection with the obligation to introduce a Group-wide ICS, pbb's entire Management Board is also responsible for the design, which comprises the concept, implementation, maintenance and monitoring of an appropriate and effective ICS. The ICS is fully integrated within the structural organisation and processes/workflows. It is a dynamic process that is carried out by the Supervisory Board, the Management Board and employees, and is designed to ensure that the set targets will be achieved with reasonable certainty.

Internal controls and the Three Lines of Defence model are used to ascertain that the processes are effective and efficient and in line with the strategies (especially the risk strategy). This requires a clear organisational structure, and clear and transparent embedding of tasks, competencies and responsibilities. In terms of organisational workflows, the ICS is based on an objective of largely standardising the processes and the software in use. An instructions system is in place for core activities and processes.

Implementation of organisational framework – Three Lines of Defence model

An adequate and effective ICS must be monitored internally by the Management Board. By creating the monitoring requirements, the Management Board enables the Supervisory Board to monitor the appropriateness and effectiveness of the ICS at the same time.

<table>
<tr><td colspan="3">Supervisory Board of pbb</td></tr>
<tr><td colspan="3">Management Board</td></tr>
<tr><td>First Line of Defence
(1LoD)</td><td>Second Line of Defence
(2LoD)</td><td>Third Line of Defence
(3LoD)</td></tr>
<tr><td>Real Estate Financing</td><td>RMC</td><td rowspan="3">Internal Audit</td></tr>
<tr><td>Treasury</td><td>Compliance</td></tr>
<tr><td>Further operating divisions</td><td>Further control units</td></tr>
</table>

The First Line of Defence (1LoD) comprises the operating divisions. This means that risks must be prevented, or recorded and reduced, at the organisational level of the transactions. As “risk owners”, the operating divisions have primary responsibility for the operative implementation of the risk management; in other words, the identification, assessment, management, monitoring, and reduction of risks. All 1LoD employees are required to deal with risks consciously and independently within the scope of their approval powers, comply with laws and internal guidelines and therefore manage risks appropriately. To this end, they define their processes, approval powers, interfaces and separation of functions and ensure that concrete risk management measures are taken and the methodological guidelines of the Second Line of Defence implemented.

The task of the Second Line of Defence (2LoD) is to manage and monitor the risk management functions of the 1LoD. This includes determining the methods and procedures for managing risk, the requirements through guidelines/policies and frameworks, the monitoring of risks and reporting to Company management. In this context, the 2LoD is also responsible for reviewing the stage of maturity and further development of the controlling and risk management systems. Within pbb Group, the 2LoD is traditionally formed by the central functions for risk management (RMC, Compliance, Data Protection and Information Security, Outsourcing Management and IT Governance).

Group Internal Audit (GIA) forms the Third Line of Defence (3LoD) as an independent, overarching control body. Its responsibilities include risk-oriented regular and event-driven audits of processes, controls, and systems for compliance. The audit activity spans all operational and business workflows, activities and processes. This also includes the review of the effectiveness and appropriateness of the ICS and RMS (detecting weaknesses in the identification, evaluation and reduction of risks). Detailed action plans with specific deadlines are compiled and implemented to deal with any deficiencies detected. As an independent division, GIA is not integrated in the work processes, nor is it responsible for the results of the process to be audited. To ensure these tasks are carried out, GIA is given complete and unrestricted right to information about the activities and processes, as well as the IT systems. GIA also participates in meetings of the various committee, where it can also act in an advisory capacity. It is expected to provide assurances to Company management that the risks are effectively recognised, evaluated and managed. It submits reports on this at appropriate intervals, but at least quarterly, to the entire Management Board and the Audit and Digitalisation Committee of the Supervisory Board. This objective and independent auditing and advisory function allows GIA to support the Management Board and the Supervisory Board in their monitoring functions.

As a controlling and advisory body, it is the duty of the Supervisory Board to advise and monitor the Management Board. The Supervisory Board also has audit obligations and has formed an Audit and Digitalisation Committee to provide support in this regard. The members of the Audit and Digitalisation Committee can obtain information directly from the heads of GIA, Compliance and RMC. The ICS is the subject of the deliberations of the Supervisory Board. The Supervisory Board must have expertise in the areas of accounting, risk management including climate and environmental risks, compliance, internal audit and corporate governance, among others. This requirement is met in pbb Group.

Compliance management system – implementation

The objective of the Compliance function is to ensure compliance with all relevant legal rules and obligations at both national and international level (legal security), Company-specific rules, guidelines/policies and instructions (process security) and ethical and moral standards and norms, and expectations (behavioural security). For this purpose, pbb has established a groupwide CMS that includes all the implemented measures, structures and processes aimed at ensuring compliance with the aforementioned rules.

The CMS forms the organisational and process framework for compliance and the effective integration of regulations and procedures in the processes. It is designed to ensure that the behaviour of the Management Board and employees is in compliance with laws and regulations, and aims to avoid material violations along with associated liability risks, penalties and reputational damage.

A culture of compliance must be promoted for the CMS to be effective. For this purpose, pbb has defined Group-wide binding rules governing the legal and ethical conduct of all employees vis-à-vis clients, business partners, and colleagues in its Code of Conduct. These rules are an essential feature of the day-to-day business. A human rights policy was also established. A whistleblowing system allows for anonymous reporting in the event of a specific suspicion regarding breaches, fraudulent or other illegal activities.

In addition, the Compliance division has established a number of transparent, internal principles and guidelines for specifying the regulations, as well as the appropriate business and client-related security systems. Specific internal requirements as well as audit and reporting processes have been implemented to prevent money laundering and other criminal actions, to ensure adherence to sanctions and embargoes, capital markets compliance, MaRisk compliance and general compliance.

By offering revolving training courses and advisory services to employees, and carrying out control activities, the Compliance division works to firmly enshrine the rules and ensure compliance with legal requirements and other obligations considered essential, as well as with the provisions of the Compliance Management System.

Taking into consideration the compliance objectives, violations or breaches of duty in relation to the law and supervisory rules, internal provisions and guidelines, and ethical and moral standards pose the greatest risk. As these could threaten the achievement of objectives, the risks are carefully identified, evaluated and controlled on a regular basis. This facilitates the risk-oriented definition of appropriate measures for risk mitigation or minimisation, as well as the implementation of risk-based control activities.

The Compliance function follows the principle of independence (from the units it monitors) and objectivity with the right to access, to information and to inspection at any given time. It is integrated extensively in the company organisation and has numerous interfaces with other pbb divisions and subsidiaries (across regions). It is always entitled to participate in the Bank's internal committees and is involved in all relevant processes.

Compliance submits regular reports to the Management Board and to the Audit and Digitalisation Committee of the Supervisory Board. As a result, these bodies are always informed about current developments and issues and can ultimately convince themselves about the appropriateness and effectiveness of the CMS.

Implementation of organisational framework – Control Attestation Process

To strengthen and further expand the ICS, the Management Board has instructed the Compliance function to perform the Control Attestation Process (CAP). This process is a tried-and-tested, fundamental global management instrument aiming to centrally coordinate and review risk-oriented control activities, and related advisory services for the divisions, on an ongoing basis. It specifically involves recording all key controls, including a regular downstream confirmation, modification and review process.

For this purpose, all (central and local) divisions identify and define the material division-specific processes within their areas of responsibility, as well as the related controls, and record these in a dedicated database. Controls relating purely to ESG risks are flagged separately. After this catalogue of key controls has been determined, regular quarterly feedback is provided by the divisions to Compliance as to whether these controls are still relevant in their complete and unchanged form, or whether they had to be modified during the confirmation period, or whether deviations exist in this regard. The divisions must also confirm that key controls are implemented in this context. Compliance compiles this feedback, analyses it, monitors it via an implemented control process (spot checks of existence, design, effectiveness and completeness) and reports at regular intervals on the results on a consolidated basis to the Management Board and the Audit and Digitalisation Committee of the Supervisory Board. In addition to the audit activities of Compliance, GIA also evaluates and reports within the scope of its audits whether the material risks are adequately addressed through key controls, and whether key controls are implemented effectively.

Control system for the organisational structure – further control activities

Every division also conducts various other controls beyond the CAP. Divisions within the 2LoD also carry out regular controls for material risks. In the Compliance division, these risk-based control activities comprise, in particular, relevant regulatory requirements (including money laundering and other criminal activities, capital market compliance and the compliance function within the meaning of MaRisk AT). In the event that monitoring or control activities indicate deficiencies, an appropriate course of action is identified.

Dynamic structure

To ensure that risks are identified, assessed and limited as correctly and comprehensively as possible, risk management and the ICS must be dynamic and responsive to changes in the overall environment. Accordingly, the ICS is continuously checked and improved in this respect. The ICS is also adjusted to reflect new circumstances, such as changes in the structure, responsibilities and business model, or new legal requirements. In addition, the control activities performed by the 2LoD as well as audits by GIA reveal potential for improvement in terms of both the adequacy (lack of appropriate controls) and effectiveness (inadequate implementation) of controls. Compliance incidents can also lead to potential for improvement.

This routine review is also monitored by the Management Board. The necessary adjustments to processes and IT systems arising from legislative changes are implemented as required in separate projects across divisions – based on a clearly-defined allocation of functions. The ICS is also adapted to the amended regulations as part of the implementation.

APPROPRIATENESS AND EFFECTIVENESS OF THE INTERNAL CONTROL AND RISK MANAGEMENT SYSTEM

The chapter “Adequacy and Effectiveness of the internal control and risk management system” was not examined by the external auditors.

The Management Board has a statutory obligation to address the effectiveness of the internal control and risk management systems. Its actions are guided by the conviction that appropriate and effective RMS and ICS are indispensable to ensure the economic success of the pbb Group in the long term.

To meet its obligation, the Management Board (and the Supervisory Board as well as the Supervisory Board's Audit and Digitalisation Committee as control bodies) receive regular reports on the ICS, the monitoring of the key controls implemented, control system maturity and further development of the ICS. Similarly, reports are received about the RMS maturity, audit planning (and implementation) and the GIA audit results. This enables the Management Board and the Supervisory Board/Audit and Digitalisation Committee to review and monitor the effectiveness and appropriateness of the two systems. Based on this reporting, the Management Board is not aware of any circumstances that argue against the appropriateness and effectiveness of these systems.

RISK TYPES

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

- Credit risk (counterparty risk)
- Market risk
- Liquidity and Funding risk
- Operational risk
- Business and strategic risk
- Property risk
- Pension risk
- Central counterparty risk
- Environmental, social and governance risk

Credit Risk (Counterparty Risk)

Definitions

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

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

- Default risk denotes the risk of a default occurring on receivables. This includes defaults of loans or other credit products (lending risk), or bonds and other securities (issuer risk), as well as the risk of default on receivables under derivatives contracts (counterparty risk/replacement risk) or money market transactions (repayment risk). The possible default of sovereign or regional governments is included as a special case (sovereign default risk).
- Migration risk is the risk of a loss in value of a receivable caused by rating migration. This includes both the risk of rating migrations of traditional borrowers as well as rating migration of bonds and other securities and receivables from derivatives and money market transactions. The impact of a rating migration concerning sovereign or regional governments as a special case is included, too.

- Realisation risk related to defaulted clients is the risk that the risk provisioning recognised changes over the analysis period, or the risk of actual amounts realised differing from the risk provisioning.
- Transfer risk is the risk that a government or central bank restricts the use of the currency to their own country. This includes the conversion risk, which is the risk that a government or central bank declares its own currency as non-convertible. Together with the sovereign risk, the transfer and the conversion risk form the country risk.
- Tenant risk describes the risk that losses in rental income for properties will negatively influence the respective borrowers' debt service capacity. In addition, it includes the secondary concentration risk (tenant cluster risk), which arises when one and the same tenant is involved in multiple properties funded by the pbb.
- Fulfilment risk is defined as the risk that the 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 is the risk of an unexpected extension of the holding period of a credit risk related asset.
- Concentration risk is defined as the risk of cluster formation in relation to a risk factor or counterparty, or a strongly correlated group of risk factors or counterparties.

Credit Risk Strategy and Principles
pbb Group has broken down the overall credit portfolio into the segments REF, PIF, VP and C&A. The 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 section "Fundamental Information about the Group" for a description of the business focus with regard to strategic portfolios, and for statements outlining the strategy adopted for the run-down portfolio.

Credit Risk Reports
The credit risk reports of pbb provide information about the following main components:

- The pbb Group Risk Report contains the development in volumes as well as relevant credit risk management indicators such as the development of the expected loss as well as the unexpected loss via value at risk (VaR). The report shows the credit risk at the level of pbb Group in the context of the overall bank risk and the risk-bearing capacity, it reports limit utilisations and violations of existing limits, and also identifies risk concentrations. Key indicators, such as the development of the exposure at default (EaD), the expected loss (EL), the credit value at risk (Credit VaR) as well as problem loans are integrated in this report and are discussed by the Management Board; the report is also submitted to the RLA of the Supervisory Board to be noted and dealt with by the RLA regularly in its meetings.
- 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 about 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 RLA of the Supervisory Board.
- CRM Public Sector & Corporates Reporting, which reports on the PIF, VP and C&A segments, was also introduced for the first time 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 RLA of the Supervisory Board on a semi-annual basis.

- For decisions to be made regarding new business, or regarding material changes to the credit quality of existing financings (such as a maturity extension), key financial indicators, content and analysis on a case-by-case basis are presented to, and discussed by the Credit Committee.
- In the active business, further regular reports support operational management with regard to the management and timely recognition of risks at the sub-portfolio level.
- Unusual developments which might result in a major deterioration in the risk position of an individual exposure are ad-hoc reported to a wider group up to the CRO by way of so-called "Credit Issue Notes".

Credit Risk Quantification via Economic Capital and Risk-weighted Assets according to Capital Requirements Regulation (CRR)

Credit Portfolio Model For calculating the economic capital for credit risk pbb Group uses a credit portfolio model. For details concerning this model and economic credit risk quantification, please refer to the sections "Internal Capital Adequacy Assessment Process (ICAAP)".

Stress Testing The stress tests for economic capital in credit risk are described in greater detail in the section "Internal Capital Adequacy Assessment Process (ICAAP)".

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

Credit Risk Quantification according to CRR The Basel III Framework Agreement of the Basel Committee was implemented in the European context by means of the CRR. pbb applies the so-called Advanced IRBA and the Standardised Approach (STA).

Credit Risk Management and Monitoring

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

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

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

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

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

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

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

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

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

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

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

Where an individual decision is taken as to whether a potential problem exposure (or stage 3 impairment (IFRS) or a 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 taken into account. These analyses are reviewed regularly or on an event-driven basis. Decisions to this effect are made within the scope of the pbb's valid assignment of authority.

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

The annual back-testing of Stage 3 loss allowance prescribed 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.

Hedging and Minimising Risk by Collateral

In the REF segment, financing arrangements are normally backed by property charges. As part of the decision-making process in the case of new financing, the LTVs (loan-to-value) as well as the property (amongst others micro and macro location, rental situation, condition of property) and market circumstances are discussed and are also taken into consideration as part of the assessment process for individual loans. For existing exposures, this monitoring is carried out on a regular basis, at least annually.

Besides real 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 information and reporting obligations. Apart from the property charges, only a few more selected securities are considered to be of value in the credit assessment process or in the calculation of LGD, and in particular under certain circumstances cash security, bank guarantees as well as guarantees of public-sector institutions. Corresponding risk buffers are considered in relation to foreign currency collateral, that means in a currency differing from the loan currency, in order to take account of potential exchange rate risks.

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

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

In the PIF segment, guarantees are often accepted as collateral (including contractual guarantees from public-sector authorities, export credit guarantees). Moreover, Public Investment Finance exposures often involve a specific legal framework, such as the maintenance obligation (the so called Anstaltslast) of public-sector entities in Germany, or other (direct and indirect) cover mechanisms which allow for recourse to a public-sector institution in the case of borrowers organised under public law. For some exposures in PIF, guarantees and indemnities or the legal framework are supplemented by additional loan collateral, as well as borrowers' information 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.

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

Credit Portfolio
The entire credit portfolio is calculated by using the EaD.

For most products, EaD is equal to the IFRS carrying amount (including accrued interest). Committed, undrawn credit lines are additionally included in EaD with a product-specific credit conversion factor (CCF). The CCF indicates the portion of an undrawn credit line that is expected to be drawn upon (based on experience) within one year before a potential default. Derivatives and repo transactions are an exception since their EaD is not identical to their carrying amount but must be determined, in accordance with the CRR using a different methodology. This applies, for example, to derivatives in accordance with the SA-CRR method, which has replaced the mark-to-market method under CRR II since June 2021.

The Group's credit portfolio had an aggregated EaD of € 50.0 billion as of 31 December 2022 (31 December 2021: € 57.5 billion).

Overview of the Total Exposure of pbb Group: € 50.0 billion EaD
The credit portfolio is broken down into three segments:
> Real Estate Finance (REF)
> Public Investment Finance (PIF) as well as
> the non-strategic segment Value Portfolio (VP) which is earmarked for being wound down.

In addition, "Consolidation & Adjustments" shows besides the internal reconciliation and consolidation positions, the EaD for transactions which are not directly attributable to the operating segments. These are basically asset positions for asset and liability management.

EaD in C&A as of 31 December 2022 was almost fully attributable (99%; 31 December 2021: >99%) to EL classes 1 to 8; according to the internal classification, these are considered investment grade.

Total portfolio: EaD according to operating segments

in € billion	31.12.2022	31.12.2021	Change in € billion	Change in %
Real Estate Finance	31.0	29.7	1.3	4.4
Public Investment Finance	4.7	5.7	-1.0	-17.5
Value Portfolio	10.6	13.8	-3.2	-23.2
Consolidation & Adjustments	3.7	8.3	-4.6	-55.4
Total	**50.0**	**57.5**	**-7.5**	**-13.0**

As of 31 December 2022, the total exposure (EaD) of the pbb Group decreased by € 7.5 billion to € 50.0 billion, compared to year-end 2021. Explanations concerning changes in individual segments are provided with the detailed presentation of the respective segment. The percentage of EaD in the strategic REF segment increased, to 62% (31 December 2021: 52%). The percentages of EaD were down compared to year-end 2021, both in PIF (9%; 31 December 2021: 10%) and in the VP segment (21%; 31 December 2021: 24%). The percentage share of the EaD in C&A decreased significantly compared to year-end 2021 due to an decline in the exposure to central banks (7%; 31 December 2021: 14%).

Risk Parameters The expected loss (EL) for a time period of one year is calculated for the entire exposure, with the exception of non-performing loans for which a stage 3 impairment has already been recognised. The EL is calculated using the parameters defined under Basel III, i.e. PD, LGD and EaD.

EL for pbb Group amounted to €149 million as at 31 December 2022 (31 December 2021: €161 million). The decline in the EL is largely attributable to the rating improvement of a Portuguese regional government (VP). This decline was offset in part by new business in the REF business segment.

pbb applies the default definition according to EBA Guideline 2016/07.

Total exposure: expected loss according to operating segments

in € million	31.12.2022	31.12.2021	Change in € million	Change in %
Real Estate Finance	145	139	6	4.3
Public Investment Finance	1	2	-1	-50.0
Value Portfolio	2	20	-18	-90.0
Consolidation & Adjustments	1	-	1	100.0
Total	**149**	**161**	**-12**	**-7.5**

Future developments, such as changes in the economic environment or developments concerning individual risks, may result in changes to the EL figures set out above. Furthermore, actual losses incurred may differ from expected losses.

Economic Credit Risk Capital pbb calculates economic capital for credit risk using a credit portfolio model. For details concerning credit risk quantification, please refer to the section “Internal Capital Adequacy Assesment Process (ICAAP)”.

Regional Breakdown of the Portfolio At the reporting date, the main focus of the exposure was unchanged on Western Europe. Germany continued to account for most of the overall exposure, with 39% (€19.5 billion).

The €6.1 billion EaD reduction in Germany (compared to the previous year-end) was attributable to lower exposure to central banks (mainly in C&A) as well as to repayments in the VP and PIF segments. The growth of the portfolio in the US is mainly due to new business generated in REF, reinforced by currency effects. The reduction for Austria was essentially due to changes in the general interest rate levels and the associated changes in hedge adjustments in the VP.

The largest item of the category “Other Europe” was the Netherlands with €1.3 billion (31 December 2021: €1.3 billion). The category “Other”, which accounted for €1.1 billion (or around 2% of the portfolio), largely comprises bonds issued by supranational organisations.

Total portfolio: EaD according to regions

in € billion	31.12.2022	31.12.2021	Change in € billion	Change in %
Germany	19.5	25.6	-6.1	-23.8
France	7.7	7.8	-0.1	-1.3
USA	5.0	3.8	1.2	31.6
Austria	4.7	6.1	-1.4	-23.0
United Kingdom	2.6	2.8	-0.2	-7.1
Other Europe[1)]	2.3	2.5	-0.2	-8.0
Poland	1.8	1.5	0.3	20.0
Spain	1.7	2.2	-0.5	-22.7
Italy	1.6	1.7	-0.1	-5.9
Other[2)]	1.1	1.1	-	-
Sweden	0.9	0.9	-	-
Czech Republic	0.4	0.4	-	-
Portugal	0.3	0.6	-0.3	-50.0
Finland	0.3	0.3	-	-
Hungary	0.2	0.2	-	-
Total	**50.0**	**57.5**	**-7.5**	**-13.0**

[1)] As of 31 December 2022 the category “Other Europe” comprises the Netherlands, Slovakia, Romania, Switzerland, Belgium, Slovenia, Luxembourg, Ireland, Norway, Latvia and Denmark.
[2)] As of 31 December 2022 the category “Other” comprises amongst others Supranationals, Japan and Canada.

Depending on the results of the internal rating process, maximum limits are defined for each individual country; these limits restrict pbb Group’s business activities. All country limits are monitored daily in the unit RMC.

Real Estate Finance: € 31.0 billion EaD
The REF segment comprises real estate loans and related customer derivatives. The EaD of the REF portfolio, which in comparison with the funding volume shown in the chapter “Development in Earnings” also includes undrawn credit lines – multiplied by a product-specific conversion factor – increased year-on-year by €1.3 billion to €31.0 billion. The exposure in Germany was unchanged compared to the end of the previous year. Portfolio growth was reported as a result of new business in the US, reinforced by currency effects, and in Poland. There were portfolio reductions in the United Kingdom and in the category “Other Europe”, as the repayments and additional currency effects in the United Kingdom exceeded the volume of new business.

Real Estate Finance: EaD according to regions

in € billion	31.12.2022	31.12.2021	Change in € billion	Change in %
Germany	13.9	13.9	-	-
USA	5.0	3.7	1.3	35.1
France	3.7	3.8	-0.1	-2.6
United Kingdom	2.4	2.6	-0.2	-7.7
Other Europe[1)]	1.7	1.9	-0.2	-10.5
Poland	1.7	1.4	0.3	21.4
Sweden	0.9	0.9	-	-
Spain	0.5	0.4	0.1	25.0
Czech Republic	0.4	0.4	-	-
Finland	0.3	0.3	-	-
Austria	0.3	0.3	-	-
Hungary	0.2	0.2	-	-
Italy	0.1	0.1	-	-
Total	**31.0**	**29.7**	**1.3**	**4.4**

[1)] As of 31 December 2022 the category “Other Europe” comprises the Netherlands, Romania, Switzerland, Slovakia, Luxembourg, Slovenia, Norway and Belgium.

EaD by property type increased for the office property, housing construction and logistics/storage property types due to new business. Exposure to retail property remained unchanged, while the other categories recorded declines due to repayments.

Real Estate Finance: EaD according to property type

in € billion	31.12.2022	31.12.2021	Change in € billion	Change in %
Office buildings	16.3	15.6	0.7	4.5
Housing construction	5.3	4.9	0.4	8.2
Retail	3.3	3.3	-	-
Logistics/Storage	4.2	3.5	0.7	20.0
Hotel/Leisure	1.1	1.2	-0.1	-8.3
Other	0.5	0.7	-0.2	-28.6
Mixed use	0.3	0.5	-0.2	-40.0
Total	**31.0**	**29.7**	**1.3**	**4.4**

At 31 December 2022, investment financings continued to dominate the portfolio (88%; 31 December 2021: 88%); development financings accounted for 11% of EaD (31 December 2021: 11%). Investment financings are defined as real estate loans, the debt servicing ability of which largely depends upon current cash flows from the property.

Real Estate Finance: EaD according to loan type

in € billion	31.12.2022	31.12.2021	Change in € billion	Change in %
Investment financing	27.4	26.1	1.3	5.0
Development financing	3.4	3.4	-	-
Customer derivatives	-	0.1	-0.1	-100.0
Other	0.2	0.1	0.1	100.0
Total	**31.0**	**29.7**	**1.3**	**4.4**

Public Investment Finance: € 4.7 billion EaD
The portfolio comprises the following financing:
(I) Financing concluded directly with a public sector debtor, eligible according to the Pfandbrief Act, on the basis of a specific earmarking according to a defined product catalogue;
(II) Financing of companies, which have a public sector or private legal structure and funding, which are to a great extent collateralised with a public sector guarantee within the meaning of the German Pfandbrief Act (transport and utility companies, municipal utilities, special-purpose associations, management companies, non-profits, associations); and
(III) Financing of special-purpose vehicles, which are almost entirely collateralised with a public sector guarantee within the meaning of the German Pfandbrief Act. This also includes export financings covered by insurance policies or guarantees issued by the Federal Government or by other export credit agencies permitted for inclusion in Pfandbrief cover.

In addition, the portfolio comprises only very few financings for public-sector institutions without public guarantee.

EaD in the PIF segment declined by €1.0 billion compared to the previous year's end, due to repayments and maturities. No new business was conducted in this segment during the financial year.

Public Investment Finance: EaD according to regions

in € billion	31.12.2022	31.12.2021	Change in € billion	Change in %
France	2.8	3.1	-0.3	-9.7
Germany	0.8	1.1	-0.3	-27.3
Spain	0.5	0.7	-0.2	-28.6
Austria	0.2	0.3	-0.1	-33.3
Other Europe[1)]	0.2	0.2	-	-
United Kingdom	0.1	0.2	-0.1	-50.0
Other[2)]	0.1	0.1	-	-
Finland	-	0.1	-0.1	-100.0
Sweden	-	-	-	-
Total	**4.7**	**5.7**	**-1.0**	**-17.5**

[1)] As of 31 December 2022 the category “Other Europe” comprises Belgium, the Netherlands and Switzerland.
[2)] As of 31 December 2022 the category “Other” comprises mainly Canada.

“Public Sector Borrowers” summarises claims against sovereign states (25%), public-sector enterprises (19%), and regional governments and municipalities (56%). The definition also includes exposures guaranteed by these counterparties.

Public Investment Finance: EaD according to counterparty structure

in € billion	31.12.2022	31.12.2021	Change in € billion	Change in %
Public sector borrowers	4.5	5.5	-1.0	-18.2
Companies/special-purpose entities[1)]	0.1	0.2	-0.1	-50.0
Financial institutions	-	-	-	-
Total	**4.7**	**5.7**	**-1.0**	**-17.5**

[1)] Largely collateralised by guarantees and surety bonds.

Value Portfolio: € 10.6 billion EaD
The Value Portfolio comprises non-strategic portfolios of the pbb Group.

The continued reduction in exposure as at 31 December 2022, in line with the strategy, was a result of repayments especially in Spain and Portugal, and in part in Germany on the one hand. On the other hand, changes in general interest rate levels and associated changes in hedge adjustments were the main reason for EaD reductions in Austria and Italy, and to some extent also in Germany.

Value Portfolio: EaD according to regions

in € billion	31.12.2022	31.12.2021	Change in € billion	Change in %
Austria	4.2	5.6	-1.4	-25.0
Germany	2.9	3.6	-0.7	-19.4
Italy	1.4	1.6	-0.2	-12.5
France	0.8	0.7	0.1	14.3
Other[1)]	0.7	0.8	-0.1	-12.5
Spain	0.3	0.9	-0.6	-66.7
Portugal	0.3	0.6	-0.3	-50.0
Poland	-	0.1	-0.1	-100.0
Other Europe	-	-	-	-
Hungary	-	-	-	-
Czech Republic	-	-	-	-
Finland	-	-	-	-
Total	**10.6**	**13.8**	**-3.2**	**-23.2**

[1)] As of 31 December 2022 the category “Other” comprises Supranationals and Japan.

EaD by Counterparty is shown including regulatory permitted guarantees or other forms of credit support.

Value Portfolio: EaD according to counterparty structure

in € billion	31.12.2022	31.12.2021	Change in € billion	Change in %
Public sector borrowers	10.3	12.7	-2.4	-18.9
Financial institutions[1)]	0.3	1.1	-0.8	-72.7
Companies	-	-	-	-
Total	**10.6**	**13.8**	**-3.2**	**-23.2**

[1)] Mainly Spanish covered bonds.

Structured Products

pbb Group's residual holdings of Collateralised Debt Obligations guaranteed by a regional government had a notional value of €0.2 billion as at 31 December 2022 (31 December 2021: €0.3 billion) and a current fair value of €0.2 billion (31 December 2021: €0.3 billion).

Breakdown of on-balance sheet and off-balance sheet business by rating class

The following tables provide a breakdown of gross carrying amounts of non-derivative financial assets (excluding cash funds), and of default risks in irrevocable loan commitments and contingent liabilities, by internal rating class and impairment level. The breakdown is in line with pbb Group's internal rating classes. The default definition follows Article 178 of the CRR.

Breakdown of non-derivative financial assets (excluding cash funds) by internal rating class and impairment level (as at 31 December 2022)

in € million	Stage 1	Stage 2	Stage 3	FVPL	**Total**
Class 1	2,348	-	-	37	2,385
Class 2	10,479	-	-	140	10,620
Class 3	261	-	-	-	261
Class 4	-	-	-	-	-
Class 5	553	-	-	-	553
Class 6	-	-	-	-	-
Class 7	1,768	-	-	-	1,768
Class 8	1,612	-	-	2	1,614
Class 9	5,721	94	-	78	5,893
Class 10	3,321	511	-	19	3,851
Class 11	4,446	1,233	-	40	5,718
Class 12	2,823	1,263	-	63	4,150
Class 13	2,088	1,254	-	42	3,385
Class 14	1,322	771	-	45	2,138
Class 15	867	788	-	22	1,677
Class 16	760	740	-	-	1,500
Class 17	859	869	-	25	1,753
Class 18	642	588	-	-	1,230
Class 19	760	498	-	-	1,258
Class 20	184	110	-	-	295
Class 21	-	101	-	-	101
Class 22	201	76	-	-	277
Class 23	-	-	-	-	-
Class 24	-	-	-	-	-
Class 25	-	43	-	-	43
Class 26	-	24	-	-	24
Class 27	-	35	-	-	35
Defaulted	-	-	833	-	833
Total	**41,017**	**8,999**	**833**	**514**	**51,362**

Breakdown of non-derivative financial assets (excluding cash funds) by internal rating class and impairment level (as at 31 December 2021)

in € million	Stage 1	Stage 2	Stage 3	FVPL	**Total**
Class 1	1,947	-	-	44	1,991
Class 2	11,852	-	-	161	12,013
Class 3	835	-	-	-	835
Class 4	-	-	-	-	-
Class 5	1,168	-	-	-	1,168
Class 6	-	-	-	-	-
Class 7	1,211	-	-	-	1,211
Class 8	1,398	180	-	-	1,579
Class 9	5,409	151	-	89	5,649
Class 10	2,515	616	-	40	3,170
Class 11	3,940	814	-	-	4,754
Class 12	3,424	1,510	-	75	5,009
Class 13	1,969	1,454	-	-	3,423
Class 14	901	475	-	25	1,400
Class 15	806	1,106	-	74	1,986
Class 16	629	675	-	-	1,304
Class 17	306	812	-	50	1,167
Class 18	597	707	-	5	1,309
Class 19	437	227	-	28	692
Class 20	142	287	-	50	478
Class 21	144	134	-	-	278
Class 22	-	42	-	-	42
Class 23	-	-	-	-	1
Class 24	-	-	-	-	-
Class 25	-	106	-	-	106
Class 26	-	-	-	-	-
Class 27	-	136	-	-	136
Defaulted	-	-	579	-	579
Total	**39,627**	**9,432**	**579**	**640**	**50,278**

Breakdown of irrevocable loan commitments and contingent liabilities by internal rating class and impairment level (as at 31 December 2022)

in € million	Stage 1	Stage 2	Stage 3	**Total**
Class 1	-	-	-	-
Class 2	125	-	-	125
Class 3	-	-	-	-
Class 4	-	-	-	-
Class 5	-	-	-	-
Class 6	-	-	-	-
Class 7	-	-	-	-
Class 8	8	-	-	8
Class 9	37	-	-	37
Class 10	70	13	-	83
Class 11	188	22	-	211
Class 12	345	6	-	351
Class 13	359	2	-	361
Class 14	185	26	-	211
Class 15	138	52	-	190
Class 16	197	30	-	227
Class 17	244	52	-	295
Class 18	139	128	-	268
Class 19	438	115	-	553
Class 20	121	15	-	136
Class 21	-	-	-	-
Class 22	2	-	-	2
Class 23	-	-	-	-
Class 24	-	-	-	-
Class 25	-	8	-	8
Class 26	-	-	-	-
Class 27	-	-	-	-
Defaulted	-	-	5	5
Total	**2,595**	**469**	**5**	**3,069**

Breakdown of irrevocable loan commitments and contingent liabilities by internal rating class and impairment level (as at 31 December 2021)

in € million	Stage 1	Stage 2	Stage 3	Total
Class 1	-	-	-	-
Class 2	172	-	-	172
Class 3	-	-	-	-
Class 4	-	-	-	-
Class 5	-	-	-	-
Class 6	-	-	-	-
Class 7	-	-	-	-
Class 8	39	-	-	39
Class 9	8	23	-	31
Class 10	87	29	-	116
Class 11	120	15	-	135
Class 12	417	119	-	535
Class 13	200	83	-	283
Class 14	59	46	-	105
Class 15	143	16	-	159
Class 16	478	70	-	548
Class 17	131	119	-	250
Class 18	357	233	-	590
Class 19	102	32	-	134
Class 20	51	77	-	127
Class 21	-	-	-	-
Class 22	-	11	-	11
Class 23	-	-	-	-
Class 24	-	-	-	-
Class 25	-	66	-	66
Class 26	-	-	-	-
Class 27	-	-	-	-
Defaulted	-	-	-	-
Total	**2,362**	**939**	**-**	**3,301**

Watchlist and Non-performing Loans

Early Warning System The early warning system of the pbb Group has defined criteria respectively threshold values (triggers) for including loans in the watchlist and for being classified as restructuring or workout loans (e.g. past due payments, failure to meet financial ratios – e.g. loan-to-value [LTV], interest service coverage [ISC]). It is constantly monitored 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 restructuring and workout loans is appropriate. In this context and in the event of impairment triggers, the financial instruments are reviewed for credit impairment.

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

> Watchlist Loans: Payments past due by more than 60 days or another defined early warning signal is triggered (for instance insolvency of a main tenant in the REF segment).
> Restructuring Loans: A default has occurred (for example, due to payments past due by more than 90 days, or the borrower's insolvency), or another contractual or regulatory trigger is applicable. The focus with restructuring is on active implementation of a restructuring concept – with the objective of either returning the exposure to regular care, or realising collateral on the market, without enforcement measures. Credit quality is consistently tested for deterioration, and stage 3 impairments (in accordance with IFRS) or specific allowances (in accordance with the HGB) are recognized if necessary. Impairments or their underlying assumptions are reviewed regularly or on an ad-hoc basis.

> Workout Loans: There are no indications that the loan can be restructured. Enforcement measures have been or will be introduced. Stage 3 impairments (in accordance with IFRS) or specific allowances (in accordance with the HGB) were 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).

Development of Watchlist and non-performing loans of pbb Group

				31.12.2022				31.12.2021	Change	
EaD in € million	REF	PIF	VP	**Total[1)]**	REF	PIF	VP	**Total[1)]**	in € million	in %
Workout loans	106	-	-	106	14	-	-	14	92	>100,0
Restructuring loans	679	50	-	729	533	32	-	565	164	29.0
Non-performing loans	**785**	**50**	**-**	**835**	**547**	**32**	**-**	**579**	**256**	**44.2**
Watchlist loans	**818**	**35**	**-**	**853**	**576**	**-**	**-**	**576**	**277**	**48.1**

[1)] No exposure in C&A.

Watchlist and non-performing loans increased by a net €533 million between 31 December 2021 and 31 December 2022.

Watchlist loans increased by a total of €277 million during the reporting period. In the REF segment, exposures totalling €297 million were transferred to intensified handling. In contrast, partial repayments and currency effects that slightly increase the balance led to a decline of €26 million overall. Financings of €29 million were transferred to recovery management. In public-sector financings (PIF segment), one exposure in a developing country in the amount of €35 million was a new addition due to the downgrade of the country rating. However, 90% of the financing is covered by an export credit guarantee from Canada.

Problem loans increased by €256 million net during the reporting year. In the REF segment, loans totalling €356 million were transferred to recovery management. The full repayment of a loan in the amount of €62 million and further (partial) repayments and currency effects of €55 million had the effect of reducing the exposure. 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 reporting 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.

Credit loss allowances and Provisions

Details on credit loss allowances and provisions – including their recognition and development – can be obtained from the notes.

Opportunities

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

In specific terms, there are opportunities if fewer loans in future are affected by a default in performance than is assumed as part of the risk quantification process. In future, opportunities may also result from a lower than assumed number of migrations to weaker rating classes.

There are also opportunities if the loss ratios of non-performing loans in future are lower than was assumed as part of the risk quantification process. Lower loss ratios may be triggered by various positive developments. Firstly, it is possible that the process of disposing of collateral might generate higher proceeds than was originally assumed in the risk quantification process. Secondly, it is possible that a higher percentage of non-performing loans subsequently become performing loans again without any losses than had been the case in the past.

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

Market Risk

Definition

Market risk is defined as the risk of a market value loss, or a negative change in net interest income for the period, due to volatility of the market prices of financial instruments. Transactions entered into by pbb Group are mainly exposed to the following types of market risk:

- General interest rate risk (risk from changes in market interest rates)
- 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)

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

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

Market Risk Reports
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.

Market Risk Measurement and Limits
Market risk Value-at-Risk RMC determines VaR attributable to market risk, at an overall as well as partial portfolio level, on a daily basis, using a simulated model based on historical data. The VaR determination includes all positions exposed to market risks. The essential parameters of the market risk VaR model can be summarised as follows:

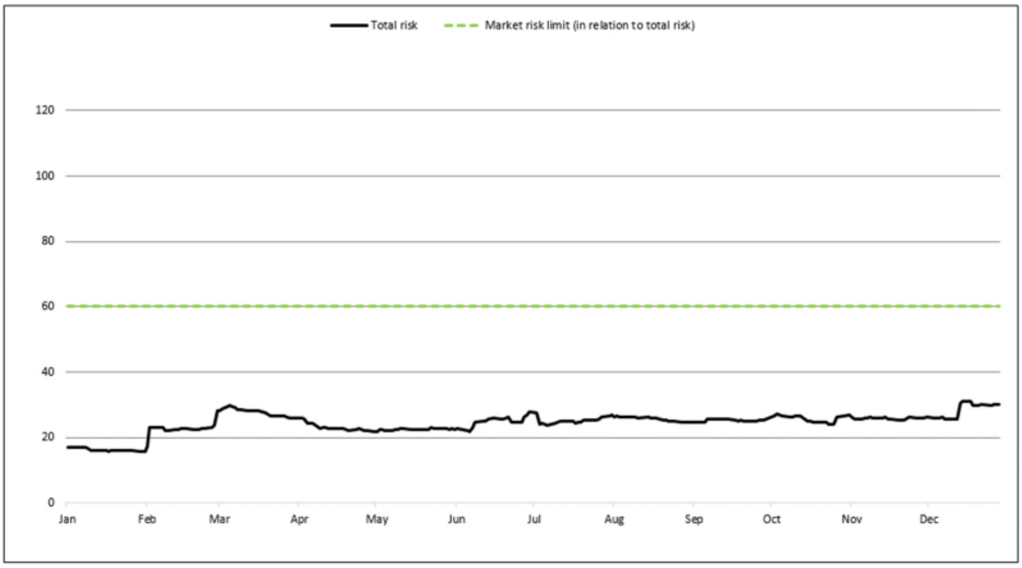
> The simulation model is based on a one-year market data history which is included in the simulation on an equally weighted basis.
> Individual types of market risk are aggregated to form a total VaR, which forms the basis of limit monitoring.
> For the purposes of daily operational risk management, Market risk VaR is determined using a holding period of one day and a 99% confidence interval.

At the end of December 2022, market risk VaR amounted to €30 million, taking diversification effects between the individual market risk types into consideration (year-end 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 at the end of December 2022 year-end: €25 million) and CSRBB VaR (limit at end of December 2022: €50 million).

There were no breaches of market risk VaR limits during the period under review. The following chart shows the development of market-risk-induced VaR, compared to the market risk VaR limit during the course of the year:

Market risk VaR
and market risk limit January to December 2022
in € million



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

Sensitivity Analyses Overnight yield curves are used for the purposes of measurement relevant to 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 as well as assumptions regarding client behaviour on the economic present value.

In addition to internal economic stress scenarios, the external regulatory stress scenarios relating to the supervisory outlier test are calculated and analysed.

The Management Board and the executive bodies are informed about the results of stress scenarios on a regular basis. In connection with managing interest rate risk in the banking book (including credit spread risks), the changes in present value of 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 backtesting within a period of 250 trading days are 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 therefore has "green" status, as defined in the "traffic light" system of the Basel Capital Accord.

Periodic interest rate risks pbb uses a dynamic model for measuring and monitoring period interest rate risks, thus simulating changes in future income statements and balance sheet developments, which will materialise if the balance sheet develops as planned, and under predefined interest rate scenarios. Measurement and monitoring of periodic interest rate risks was carried out at the end of each quarter, for a simulation horizon covering the following four quarters. Negative deviations from the base value were monitored, using a trigger of €60 million for effects on income, and a trigger of €100 million for effects on accumulated other comprehensive income (recognised directly in equity). Both triggers were not exceeded during the year under review.

Economic Capital for Market Risk The chapter "Internal Capital Adequacy Assessment Process (ICAAP)" provides details concerning the calculation as well as the quantification of economic capital for market risk.

Mapping and Recognition of Economic Hedges as On-balance-sheet Hedges
The concept of hedge accounting refers to specific accounting rules applicable to hedge relation- ships in accordance with IFRS, entered into for the purpose of neutralising the change in value of the hedged underlying transaction against the change in value of the hedging instrument to a large extent. The criteria set out in IFRS must be satisfied for a hedge to be recognised accordingly. To a certain extent, these criteria – such as the requirements relating to hedge effectiveness – are inconsistent with the methods applied to bank management. As a result, there may be differences between economic hedges and hedge relationships recognised on the balance sheet.

Market Risk Management, Monitoring and Reduction
pbb Group uses a three-pillar approach for managing and monitoring market risk:
> management of positions maintained by the Treasury
> risk measurement and monitoring compliance with triggers and limits (independent from trading units) and
> 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. Tenor basis spread risks €3 million and cross-currency basis spread risks €2 million were shown at the reporting date (year-end 2021: €1 million tenor basis spread risks and €1 million cross-currency basis spread risks).

Volatility Risk Volatility risk amounted to €1 million at end of December 2022 (year-end 2021: €1 million).

Credit Spread Risk (CSRBB) The majority of credit spread risk is attributable to assets eligible as cover for Pfandbriefe. The Bank has risk measurement systems in place for calculating credit spread risk for all relevant exposures. 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.

Open interest rate risk exposures (from an economic perspective) may indeed be neutral or even income-enhancing for periodic interest rate risk; this is the case for medium- to long-term fixed-rate loans, for example.

IBOR reform

The implementation of the IBOR reform is described in the notes.

Liquidity and Funding Risk

Definition

Liquidity risk is defined as the risk of not being able to meet the amount and/or due dates of existing or future payment obligations, in full or on time.

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 should ascertain that all material liquidity and funding risks can be identified, measured and monitored, and that measures to prevent a liquidity shortage are taken in good time if required.

Liquidity 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 of Liquidity Risk Management
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.

Liquidity Risk Report
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.

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.

Liquidity Risk Monitoring and Management

Monitoring of liquidity risks is ascertained through daily reporting of the liquidity situation and a defined escalation process. A liquidity emergency plan has also been adopted in this context; this plan forms the functional and organisational framework for the handling of any liquidity shortages. The liquidity emergency plan is part of the pbb Recovery Plan and updated at least annually.

Liquidity risk management is based on various interconnected components (daily and monthly liquidity reports), which are based on a "liquidity risk tolerance" defined by the Management Board. This is to ensure that pbb Group has adequate liquidity reserves at its disposal.

Hedging and Reduction of Liquidity Risk

A risk tolerance system is in place, to limit liquidity risk. Risk tolerance is integrated in the liquidity management process by means of triggers (limit system), in order to safeguard a "survival period" for pbb Group in stressed conditions.

The limits applicable for risk tolerance are determined in line with stress scenarios, and adjusted at regular intervals.

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 (Liquidity Coverage Ratio (LCR), Net Stable Funding Ratio (NSFR))

The Liquidity Coverage Ratio (LCR) is calculated using the ratio of the liquidity buffer (liquid assets) to net liquidity outflows during a stress period of 30 days. A minimum LCR of 100% is mandatory in regulatory liquidity reporting.

The levels determined for pbb during 2022 were at any time clearly in excess of 100%. The Liquidity Coverage Ratio as at 31 December 2022 was 171%.

A NSFR ratio of 100% must be maintained since 30 June 2021. The NSFR shows the ratio of available stable funding (ASF) and required stable funding (RSF) and is designed to secure the medium and long-term structural liquidity.

The figures determined during 2022 were clearly above the ratio required under the regulatory regime. As at 31 December 2022, the NSFR was 110%.

Funding Markets

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

Forecast Liquidity Requirement

In addition to the forecast liquidity requirement for new business activities, the extent of future liquidity requirements also depends on numerous external factors:

- 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 over-collateralisation in the cover pools;
- refinancing requirements of real estate investors

Funding Risk
The chapter “Internal Capital Adequacy Assessment Process (ICAAP)” provides details concerning funding risk as part of business and strategic risk.

Market Liquidity Risk
For financial instruments, quantitative details for a better assessment of market liquidity risk can be obtained from the presentation of the three levels of the fair value hierarchy in the notes. 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.

Opportunities
The cumulative liquidity position in the base scenario shown in the section "Development of pbb Group's Risk Position" basically opens up the opportunity to react flexibly, particularly with regard to potential new business.

If the external factors specified in the section “Forecast Liquidity Requirement” were to develop favourably for pbb, this would result in a lower future liquidity requirement.

Operational Risk

Definition
According to CRR pbb defines the operational risk as follows: “the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events, including legal risk”. pbb recognises the following risks within the operational risk category: legal risk, behavioural risk, reputational risk, outsourcing risk, model risk as well as risks associated with information and communication technologies (ICT systems risk).

Strategy for Operational Risk
The priority of pbb Group’s operational risk management is to prevent operational risk events and to meet the defined risk appetite. Key cornerstones of this strategy are the early recognition, systematic recording and assessment of operational risk, taking measures for risk mitigation as well as an early management reporting. The operational risk management strategy is adopted by the Management Board on an annual basis as part of the overall risk strategy. The risk strategy describes the pbb Group’s risk management strategy as well as the risk appetite regarding operational risk.

Organisation of Operational Risk Management
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 processes, instruments and methods for identifying, assessing, quantifying, monitoring and reporting on operational risk. Internal Audit constitutes the third line of defence.

Risk Reports, Monitoring and Management of Operational Risk
Essential components of operational risk management are as follows: recording and analysing 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 ICT systems risk and outsourcing risk is fully integrated into operational risk management, and thus into the 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 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 aimed primarily at the prevention of losses which could be incurred if business activities of pbb Group are not documented with legal certainty. Structuring business activities in a manner that ensures legal certainty also serves to protect the integrity and reputation of pbb Group. In order to achieve this goal, the Legal department provides the entire pbb Group with a 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. The results are discussed with the responsible divisions and/or in the Legal and Regulatory Risk Committee. The Legal Policy describes the roles and responsibilities of the Legal department within pbb Group and serves as a guideline for employees in the Legal department. Furthermore, the Legal department gives an assessment towards the Finance department whether provisions for pending legal cases have to be recognised. Moreover, the

OpRisk loss database captures losses and provisions from legal risks which need to be seen in conjunction with operational risk events. Overall, legal risks are taken into consideration in the existing operational risk management framework, and are an integral part of, inter alia, the Key Risk Indicator Report, the Operational Risk Self-Assessment (ORSA), the analysis and reporting of risk events, as well as for determining economic capital.

ESG risks included in operational risk are also integrated into operational risk management.

Risk Measurement
Please refer to the chapter “Internal Capital Adequacy Assessment Process (ICAAP)” for further details on the quantification of operational risk including legal risks as well as the calculation results of the economic capital for operational risk.

In line with the Standardised Approach according to article 317 et seq. of CRR, the own funds requirement for operational risk, which is calculated at the end of each year, was € 77 million as at 31 December 2022 (31 December 2021: € 74 million).

Operational Risks Profile of pbb Group
pbb Group suffered a financial loss of €0.6 million from operational risks during 2022 (2021: €0.3 million). pbb assesses its operational risk profile as stable.

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.

Business and strategic risk

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

Property Risk

Real estate risk is defined as the potential negative change in value in 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, need for investment, legal and economic frameworks, and other factors.

As at 31 December 2022 as well 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. It is considered within the scope of ICAAP. Pension risk is included in the market risk, for details, please refer to the chapter “Internal Capital Adequacy Assessment Process (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, in the event of the default of a clearing member. 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.

Environmental, Social and Governance (ESG) risk

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 Guidelines on Climate-related and Environmental Risks, pbb Group defines ESG risk as the risk of adverse financial effects on the institution resulting from the 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 or individual. ESG risk also encompasses negative financial, economic and social impacts that could arise from the activities of the institution itself.

ESG risks include the following components:

- **Environmental risks:** Climate and environmental risks refer to risks of losses and negative impacts due to climate change and the destruction of the environment. The general understanding is that climate 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 (e.g. in the form of air and water pollution, land contamination, water stress, biodiversity loss and deforestation). 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 (such as rising temperatures, rising sea levels, water stress, biodiversity loss, changes in the use of land, destruction of natural habitats and resource scarcity), 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 disruption.
  - **Transition risk:** Transition risk describes financial losses that institutions can incur, directly or indirectly, as a result of the process of adjustment leading to 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.
- **Social risks:** pbb Group defines social risks as the risks of an adverse financial impact on the institution resulting from current or future effects of social factors – especially non-compliance with human and employees’ rights and matters, any negative impact of business activities on society/communities in general or specifically (such as on indigenous minorities or similar groups), or from product safety and end-customers – on its counterparties or invested assets. Negative effects can also result from social factors associated with the institution’s own activities.

> **Governance risks:** pbb defines governance risks 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 accounting for ESG risk
pbb considers risks emanating from ESG components taking an overall view, since the respective risk factors have an impact on other types of risk. ESG risk is classified overall as being material.

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 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 time frame. Suitable data for the portfolio is used to assess the materiality of each risk factor. An explicit materiality definition has already been drawn up in some cases. 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 an expert judgement. Risk factors for which no data is available were evaluated exclusively using expert knowledge. For ESG risk drivers recognised as material the impact on the individual risk types is examined and assessed.

As part of the comprehensive, systematic materiality analysis, specific risk factors with regard to physical climate and environmental risk, transition risk and governance risk were classified as material. In the area of social risk, none of the risk factors considered were identified as material.

With regard to immediate climate threats, flooding, heavy precipitation, storm (including cyclones, hurricanes and typhoons) and tornado risk drivers are classified as material for the entire portfolio. In addition, only forest fires, drought, heat waves and landslides are considered material for the non-REF portfolio. Chronic climate threats, such as rising sea levels, are currently not considered material for the portfolio. These assessment results are based on quantitative and qualitative assessments of the portfolio. In doing do, external location-specific risk data supplied by the insurance industry and from public hazard maps was queried and analysed, and the first materiality definitions applied.

To assess biodiversity and environmental risks, a quantitative evaluation of the public environmental and biodiversity scores that are suitable for the entire portfolio for our clients' underlying economic sectors was conducted. For the REF segment, a potential contribution to the loss of biodiversity through changes in the use of land was also evaluated using satellite data on the type of land coverage at the locations of the properties financed in Europe. Overall, biodiversity risks were not classified as material, both inside-out and outside-in. Pollution and contamination are included among the material environmental risk factors for the REF segment. In addition, volcano and earthquake location risks were assessed as material, the latter being relevant exclusively for the non-REF portfolio.

The transition environmental risk factors identified as material include property energy efficiency, carbon footprint (Scope 1, 2, 3 emissions), new sustainability and environmental regulations/carbon pricing and market sentiment, whereby the last two factors are relevant exclusively for the REF segment. The materiality of the aforementioned transition risk factors for the REF segment was determined qualitatively, by way of expert judgement. To assess the materiality for the non-REF portfolio, relevant transition risk factors were assessed with regard to their potential influence on credit risk on the basis of a data-based expert assessment. Material governance risk factors include fair communication, client data security and data protection, integrity shortcomings (such as money laundering, terrorist financing), 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 the Company's own ESG/compliance risks.

Based on the insights gained from the materiality analysis and risk inventory, the impact of climate risks 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 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.
- A long-term transition scenario was calculated to extend the focus on potential events that manifest themselves over a long period of time. In this scenario, the period up to 2050 was observed under different climate transition paths.
- The impact of acute physical risks was analysed in a dedicated scenario.

To calculate the impact of different stress scenarios for the banking business and to manage identified risks, specific models were used, taking into account climate-specific parameters. The results of the three climate risk scenarios have been considered in the ICAAP and ILAAP management approaches.

Overall, risk factors have been identified for environmental, social and governance aspects. These ESG risk factors have an impact on counterparty credit risk, operational risk, including potential reputational, legal and liability risks, as well as business and strategic risk. There are currently no indications of any direct sustainability risks to pbb's market risk, and its liquidity and funding risk.

pbb has taken ESG risk factors into consideration in the monitoring and reporting, as well as in stress tests and scenario analyses. ESG factors are in the process of being fully incorporated in the quantifications as part of ICAAP.

Monitoring and managing ESG risk

pbb aims to consider sustainability aspects within all its business activities, and to minimise the risk of negative consequences due to ESG risks. To ensure comprehensive compliance in this respect, a specialist ESG Committee was established, which addresses ESG aspects and ESG risks within the pbb Group.

Specific risk indicators have been defined and assigned to the individual components for monitoring the various aspects of the Group's own ESG risk (inside-out perspective). Based on a traffic light system, amber and red thresholds have been defined for these risk indicators. 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. Both the ESG risk indicators and the internal targets for the various aspects of ESG risk are continuously developed, enhanced and specified.

Monitoring environmental risk (outside-in perspective) is currently focused on the aspects of avoidance of, and adaptation to, climate change associated with the properties we finance. Monitoring activities for REF exposures potentially affected by physical and transition risks were launched within internal risk reporting. Additional transparency in internal reporting also provides information on market risk sensitivities related to environmental risk factors, and on ESG-related losses with regard to operational risk exposure in the REF portfolio. Internal reporting is continuously expanded in line with available data. The quarterly KRI Report contains portfolio details on taxonomy eligibility and conformity, and on the share of "green" loans as per the sustainability criteria for green loans.

The monitoring and management of social and governance risks focusses 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 guidelines, instructions and process descriptions. Compliance is responsible for ensuring due and proper adherence to these requirements. As an investment services provider, pbb 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.

pbb manages ESG risks 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 RMC and Compliance, together with Legal, Human Resources, and IT. GIA is the third line of defence. The assessment register that was created for the categorised ESG risk factors as part of the materiality analysis is used as a basis for the allocation of divisions and the corresponding key controls based on the principle of the Three Lines of Defence.

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 reduce the probability of loan defaults, increase the value of the collateral furnished and prevent potential reputational damage.

Client orientation and internal governance are further fundamental success factors for pbb in order to secure the financing portfolio, and give the Bank the opportunity to set itself apart from its peers, in positive terms, in a direct comparison.

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 to the greatest extent possible, whilst making use of the different opportunities that arise.

INTERNAL CAPITAL ADEQUACY ASSESSMENT PROCESS (ICAAP)

Pursuant to section 91 (2) of the German Public Limited Companies Act (Aktiengesetz – “AktG”) and section 25a (1) of the German Banking Act (Kreditwesengesetz – “KWG”), pbb Group is obliged to establish appropriate and effective internal procedures in order to ensure the Bank’s risk-bearing capacity at all times. The Internal Capital Adequacy Assessment Process (ICAAP) is subject to regulatory review (within the framework of the SREP); it complements the regulatory procedures under Pillar 1 of the Basel III framework, as laid down in the CRR and the 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 as well as from an economic perspective. Both perspectives are aimed at the constancy of the business and capital planning, and on the long-term viability of the pbb Group.

The normative perspective is geared towards securing the regulatory and supervisory requirements for capital and liquidity over several years. Particular focus is placed on forward-looking compliance with supervisory capital ratio requirements under expected and adverse conditions. The normative perspective also takes into account both the cross-institutional capital ratios required pursuant to the CRR and the bank-specific 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 total risk is calculated and compared to economic capital.

Risks identified in the risk inventory as material having an impact on capital and income - these are market risk, credit risk, business and strategic risk, operational risk and property risk - are included in the ICAAP, using models or other methods to quantify the economic capital of these risk types. Within these types of risk, there are additional material sub-risks on a granular level that were taken into account as other material risks in the ICAAP during the period under review, with extension risk, realisation risk, market risk under TLTRO III, model risks and realisation risk for clients in default combined in 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, as well as a comprehensive monthly monitoring and reporting process. Moreover, key indicators selected within the scope of base and stress scenarios are projected over a period of up to three years, with limits and early-warning thresholds also assigned to these figures. Limit compliance, in combination with a defined escalation process, supports the continuous safeguarding of an appropriate capitalisation.

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

The methods of calculating economic capital for the individual risk types, as well as risk indicators as at the reporting date, are described in greater detail in the following sub-sections, and in the chapter “Result of Risk-bearing Capacity Analysis”.

Quantification of economic capital for individual risk types

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

The methods of calculating economic capital for the individual material risk types for 2022 are explained below.

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

Credit risk reported comprises default and migration risk, transfer and conversion risk, as well as concentration risk. Certain elements of counterparty credit risk, such as the realisation risk for defaulted clients, settlement risk, extension risk, and model risk are not reported directly as part of counterparty credit risk, but are regularly updated, constituting a component of overall risk as ‘other risks’.

Economic capital for Market Risk (including Pension Risk)
The purpose of calculating economic capital for market risk is to identify potential financial losses resulting from price changes affecting all positions. For this purpose, potential non-systematic losses, derived from 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 allows to determine economic capital at the set confidence level.

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

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

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

Result of Risk-bearing Capacity Analysis

Normative perspective
For a detailed description of the regulatory indicators measured as at the reporting date (CET1 ratio, tier 1 ratio, own funds ratio, MREL and Leverage Ratio), please refer to the chapter “Key regulatory capital ratios”. The requirements for regulatory capital ratios were satisfied at any time throughout the reporting period. The future-oriented medium-term analysis of key capital ratios – as required by regulators – did not show any critical values according to the limit system, neither in the base scenario nor in the stress scenarios.

Economic perspective

in € million	31.12.2022	31.12.2021	Change
Credit risk	965	1,108	-143
Thereof Real Estate Finance	653	511	142
Thereof Public Investment Finance	38	100	-62
Thereof Value Portfolio	266	484	-218
Thereof Consolidation & Adjustments	9	14	-5
Market risk	457	665	-208
Operational risk	94	97	-3
Business and strategic risk	67	-	67
Property risk	-	-	-
Other risks	69	66	3
Total before diversification effects	**1,652**	**1,937**	**-285**
Total after diversification effects	**1,563**	**1,812**	**-249**
Available financial resources before net hidden losses	2,854	3,150	-296
Net hidden losses	-116	-	-116
Available financial resources	**2,738**	**3,150**	**-412**
Excess capital	1,175	1,338	-163
Capital Adequacy ratio in %	175	174	1

In the economic perspective, aggregate risk after diversification effects declined in the period under review, mainly due to lower market and counterparty credit risks. Lower economic capital for market risk was driven mainly by lower credit spread risk and interest rate risks. Economic capital for counterparty 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 would lead to lower cash holdings and therefore to a high funding requirement in a stress scenario. 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. Since pbb still continues to hold no 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 financial resources and the negative development of hidden reserves/encumbrances were responsible for this decline. Compared to year-end 2021, excess capital declined. The internal capital adequacy ratio (defined as the ratio of available financial resources to diversified economic capital) increased slightly. Overall, the Bank's risk-bearing capacity at the reporting date was demonstrated for the economic perspective as well.

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

Opportunities

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

Stress testing

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

As part of an integrated approach, the impact of macroeconomic stress scenarios on the material metrics of the normative and economic perspectives was calculated for a horizon of several years during the period under review. Under the impression of the war in Ukraine and uncertainty in relation to bottlenecks in energy supplies, stress scenarios were developed using various degrees of severity and analysed to ascertain how these impact on the pbb Group. Given the highly dynamic development, these scenarios are subject to a 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 the risk-bearing capacity would be at risk.

SREP

The objective of the SREP is a comprehensive analysis of institutions supervised by the ECB – comprising an assessment of the business model, risk and corporate governance, risk situation, as well as capitalisation and liquidity status.

Based on the results of the analysis as well as using benchmark comparison, the ECB may impose minimum capitalisation or liquidity requirements, over and above existing regulatory requirements. As a material result of the SREP, pbb was required to maintain a minimum CET1 ratio of 9.5% (excluding the countercyclical capital buffer, which varies according to country, and hence, for specific portfolios – 31 December 2020: 0.019%; 31 December 2021: 0.020%; 31 December 202: 0.217%) since 2020. This capital requirement is based on the final Basel III requirements (excluding transitional rules) and comprises a Pillar 1 minimum capital requirement (4.5%), a Pillar 2 capital requirement (P2R: 2.5%) and the capital conservation buffer (CCB: 2.5%). Furthermore, pbb had to fulfil a total capital requirement of 13.0% since 2020 (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: they are since then 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 has remained unchanged, at 13%. Both requirements, pbb complied with at all times during the year under review.

The CET1 minimum capital requirement that applies 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 capital (AT1 capital).

The Pillar 2 capital requirement, as notified to pbb in ECB's SREP letter dated 14 December 2022 and effective since January 2023, remains unchanged at 2.5%. Hence, the other minimum CET1 and total capital ratios as stated above remain valid for pbb.

Key Regulatory Capital Ratios

Together with the Capital Requirements Directive (CRD), the CRR forms the basis for determining regulatory capital requirements. Besides the minimum capital ratios, these regulations also govern requirements for the eligibility of capital instruments as well as the mandatory determination of regulatory capital, in line with the accounting standards used. For this reason, pbb has determined its regulatory capital ratios based on IFRS.

With the approval of the ECB, pbb Group uses the waiver rule pursuant to Article 7 (3) of the CRR; the Group is therefore exempt from determining own funds requirements at a single-entity level.

pbb Group applies the Advanced Internal Rating Based Approach (Advanced IRBA) and the Standardised Approach (STA) to determine regulatory capital requirements.

The requirements for regulatory capital ratios were satisfied at any time throughout the reporting period.

Own Funds

in € million	31.12.2022[1)]	31.12.2021[2)]
CET1	2,843	2,875
Additional Tier 1	298	298
Tier 1	3,141	3,173
Tier 2	566	593
Own Funds	**3,707**	**3,766**

[1)] After confirmation of the 2022 financial statements, less AT1-coupon and less proposed dividend (subject to approval by the Annual General Meeting).
[2)] After confirmation of the 2021 financial statements and appropriation of profits.

Risk-weighted assets (RWA)

in € million	31.12.2022	31.12.2021
Credit risk (without Counterparty credit risk)	15,594	15,385
Counterparty credit risk	432	426
Thereof CVA Charge	146	206
Market risk	31	59
Thereof interest rate risks	-	-
Thereof foreign exchange risks	31	59
Operational risk	959	922
RWA total	**17,017**	**16,792**

Capital ratios

in %	31.12.2022[1]	31.12.2021[2]
CET1 ratio	16.7	17.1
Tier 1 ratio	18.5	18.9
Own Funds ratio	21.8	22.4

[1] After confirmation of the 2022 financial statements, less AT1-coupon and less proposed dividend (subject to approval by the Annual General Meeting).
[2] After confirmation of the 2021 financial statements and appropriation of profits.

Leverage ratio

in %	31.12.2022[1]	31.12.2021[2]
Leverage ratio	5.9	6.0

[1] After confirmation of the 2022 financial statements, less AT1-coupon and less proposed dividend (subject to approval by the Annual General Meeting).
[2] After confirmation of the 2021 financial statements and appropriation of profits.

MREL (Minimum Requirements for Own Funds and Eligible Liabilities)
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 Restructuring and Resolution (Sanierungs- und Abwicklungsgesetz – "SAG")), 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 bail-inable and thus excluded from conversion. The exact level of the MREL ratio is determined by regulators individually for each institution concerned. pbb is aiming to maintain an MREL ratio of at least 8% in relation to total liabilities and own funds (TLOF), and exceeded this requirement with more than €1.6bn significantly in the year under review (2021: €1.8bn).

Recovery and Resolution Planning

Recovery and Resolution Planning
A uniform bank resolution regime is a key component of European Banking Union. With the BRRD, which has harmonised recovery and resolution tools, and with the Regulation setting up the Single Resolution Mechanism (“SRM”), the legal basis therefore was established. In Germany, the BRRD and the SRM were implemented through the German Act on Restructuring and Resolution (SAG).

Recovery Planning
Pursuant to section 12 (1) of the SAG, every institution [subject to the Act] must prepare a recovery plan and submit it to the supervisory authorities. pbb's Recovery Plan is based on the Bank's accounting and financial reporting in accordance with IFRS; it takes numerous directives and regulations into account, including the BRRD, together with related directives and technical standards published by the European Banking Authority (EBA), the SRM, as well as the SAG. The objective of the Recovery Plan is to set out the measures that the institution may use in order to secure or restore its financial stability in the event of its assets, financial position and earnings materially deteriorating, in a theoretical crisis event, where such deterioration may threaten the institution's continued existence. A possible impact upon the financial sector as a whole is also considered in this context.

The monitoring of recovery indicators, as well as recovery governance, are enshrined within the organisational as well as operating structures; they form part of the Bank's overall management.

The Recovery Plan is updated at least once a year, or on an event-driven basis, taking applicable regulatory requirements into account.

Resolution Planning
In contrast to the Recovery Plan, the Wind-down Plan is conceived by the resolution authorities – as opposed to the pbb. In this respect, in close coordination with the EU Single Resolution Board (SRB) in Brussels and the national resolution authority (the German Federal Financial Supervisory Authority – "BaFin"), pbb supports these authorities in preparing the Wind-down Plan. The objective of the Wind-down Plan is to ensure pbb's capacity to enter into wind-down proceedings.

INTERNAL CONTROL SYSTEM AND RISK MANAGEMENT SYSTEM RELEVANT FOR THE CON-SOLIDATED FINANCIAL REPORTING PROCESS

Concept

The risk management system relevant for the consolidated financial reporting process comprise the principles, processes and measures used to ensure the effectiveness and efficiency of financial reporting, as well as to ensure compliance with statutory provisions. Risks that may prevent this overall objective from being achieved are identified and assessed; any risks identified are limited and their effect on the financial statements and their appropriate presentation are reviewed. The internal control system ("ICS") is an integral part of the risk management system. The implementation of controls is intended to ensure, with sufficient certainty and despite the risks identified, that the financial statements are prepared in compliance with the regulations. However, absolute certainty regarding the achievement of the objectives cannot be given completely.

The ICS is fully integrated into the pbb Group's organizational structure and workflows. This also includes comprehensive reporting to the Management Board and Supervisory Board.

pbb's Management Board prepares Consolidated Financial Statements and a Combined Management Report. In connection with the requirement to establish a Group-wide ICS, the whole Management Board of pbb is also responsible for the form – i.e. the concept, implementation, maintenance and monitoring – of an appropriate and effective ICS. All strategies are decided on by the whole Management Board on the basis of recommendations made by the CEO/CFO.

The Supervisory Board is tasked with advising and monitoring the Management Board. It also has audit and reporting-related obligations. pbb's Supervisory Board established an Audit and Digitalisation Committee to support its activities in this area. In accordance with section 100 (5) of the Aktiengesetz (AktG – German Stock Corporation Act), at least one member of the Supervisory Board must have expertise in accounting and another membermust have experience in auditing. These requirements are met.

Group Internal Audit supports the Management Board and the Supervisory Board in its control function by performing independent audits.

At 31 December 2022, the CEO/CFO was responsible for Communications, Corporate Office/Corporate Development, Digitalisation, Finance, Group Internal Audit, Human Resources and Legal. The Finance division comprises the departments Accounting, Data Quality Management, Financial Reporting, (Out)Sourcing & Cost Management, Regulatory Reporting and Tax. The Finance division prepares the Consolidated Financial Statements in accordance with IFRS as applicable in the EU and provides the capital market information relevant to accounting. pbb Group companies and branches prepare their financial statements in accordance with the relevant local legal requirements. These financial statements are standardised around uniform Group accounting policies in accordance with IFRS for the purposes of Group financial reporting. Each entity included in the Consolidated Financial Statements reports its statement of financial position, income statement, and notes to a central department in Group Accounting via the consolidation software. In Group Accounting the data are validated, analysed and consolidated. For the preparation of the unconsolidated annual financial statements, the accounting policies in accordance with the German Commercial Code (Handelsgesetzbuch, HGB) applied for the financial statements of the corporate headquarters and the branch offices, and are harmonised on the basis of a HGB accounting manual.

The GFC issues recommendations to the Management Board. These include, among other things, establishing and monitoring the accounting and reporting policies as well as workflows for all units and segments. The GFC is composed of the members of the Management Board and the managers of the Finance, Risk Management & Control and Treasury divisions.

With respect to workflows, the ICS is based on the objective of largely standardised the processes and software. Core activities and processes are governed by policies, according to which the four eye principle must be applied in all material transactions. Data and IT systems are protected against unauthorised access. In addition, certain relevant information is only made available to those employees who need it for their work. Where necessary, results are agreed at Group level.

Implementation

In order to strengthen and further expand the ICS, pbb Group has, among other things, implemented the Control Attestation Process (CAP). As part of this process, all divisions define key controls for managing their significant risks. The key controls are reviewed and confirmed in a regular confirmation process by the divisions. In addition, the controls are reviewed in a downstream process by the Compliance and Group Internal Audit divisions.

There is a clear separation of functions within the Finance division. The GFC and other committees, as well as divisional meetings serve as overarching links between the different tasks. In addition, executing, accounting and administrative activities such as payment transfers and payment entries are clearly separated or subject to the four eye principle. Furthermore, the units included in the Consolidated Financial Statements report their data to a central Group department, ensuring the subsequent processing in a uniform manner.

Systems-based and non-systems-based risk management measures and internal controls are used within the workflows. At the systems level, standard software is used as far as possible to post, reconcile, check and report data so as to avoid errors. This also applies to the consolidation and the preparation of the annual report and the annual financial statements. The consolidation software supports the reconciliation of intragroup transactions at a technical level in a clearly defined process, ensuring that these transactions are eliminated correctly and in full. Data from the entities included in the Consolidated Financial Statements are reported using a uniform, standardised chart of accounts. Automated plausibility checks are performed on the data reported by subsidiaries for consolidation purposes, for example. The largest part of assets and liabilities is held by the parent company pbb. The balances carried forward are checked by the system. Extensive validation routines are also anchored in the software that is also widely used on the market to prepare the annual report and the unconsolidated financial statements. To prevent data loss, the data in the consolidation software are backed up on a daily basis and the backup is stored on tape. As a general rule, pbb Group's software is protected against unauthorised access by a clearly defined administration concept and authorisation rules.

Alongside the systems-based measures, pbb Group has implemented manual and non-systemsbased processes. For example, the correctness and completeness of the data reported are checked using a standardised process involving variance analyses over time, among other things. In addition, the consolidated statement of financial position and the consolidated income statement are determined on a monthly basis. Projections and forecasts are also drawn up. As part of another control mechanism, the exposures involving financial instruments – and hence the vast majority of the statement of financial position – are broken down to individual transaction level based on sub-ledgers, and are reconciled with the consolidated figures. In the income statement, for example, net interest income and net fee and commission income are tracked within the context of the earnings transparency analysis, and the result from fair value measurement is tracked within the context of monthly analyses on the basis of the individual transactions in the sub-ledgers. Another reconciliation refers to the general and administrative expenses where the consolidated figure is reconciled to the individual accounts in the sub-ledger. In addition, a plausibility check using a control file is conducted regarding capital consolidation, in addition to the automated, standard system-based consolidation on individual entry level.

Mandatory accounting requirements are defined and communicated, amongst others, by the use of IFRS respectively HGB accounting manuals. These requirements, which include the analysis and interpretation of new and existing IFRS standards and interpretations, enable a group wide consistent accounting and measurement. Generally accepted valuation methodologies are employed. The procedures in place and the underlying parameters are monitored on a regular basis and adjusted if necessary.

In order to improve the quality of controls, various divisions are integrated in certain processes and are required to reconcile. For example, the interdepartmental new product process and the review of existing products (with a right of veto by the divisions Finance and Risk Management & Control) are designed to ensure that products are recognised in the financial reporting in a uniform and systematic manner. In addition, the processes of the market valuations undertaken by Risk Management & Control are coordinated in the GFC. Annual and interim report preparation is another example of interdepartmental coordination. All of the areas involved must sign off on these reports before they are officially prepared by the Management Board (subcertification process), creating an additional level of control for the products to be disclosed. All of the divisions affected agree in advance on the content of material sections of the annual and interim reports in editorial meetings.

pbb Group takes measures to combat fraud and intentional violations that negatively impact the Group. Fraud includes theft, embezzlement, or breach of fiduciary duty, as well as intentional accounting errors in connection with the consolidated financial reporting process.

Maintenance

In order to ensure that risks are identified, evaluated and limited as correctly and comprehensively as possible, pbb Group continually reviews and improves its ICS. This also involves adjustments to the ICS to reflect new circumstances, such as changes in the structure and business model of pbb Group or new satutory requirements.

The risk of fraud and intentional violations is regularly analysed in order to take defensive measures. Factors taken into account include suspicious events and changes in pbb Group's situation and that of individual employees.

Any changes to processes and IT systems required as a result of legislative amendments are implemented as separate interdepartmental projects with a clear allocation of functions. At the same time, the IKS is also adapted to the changes in the amended regulations.

Monitoring

The Group Internal Audit division is in particular responsible for checking that processes and procedures are carried out in a due and proper manner and identifying inefficiencies, irregularities or manipulation. The Group Internal Audit division also reviews the effectiveness and appropriateness of the IKS in an independent and risk-oriented manner in line with the rules set out in the Minimum Requirements for Risk Management (MaRisk), and identifies any weaknesses in risk identification, assessment and mitigation. This also includes reviewing the IT systems and the processes and controls of the Finance functions. Concrete action plans with specific deadlines are drawn up and their implementation monitored to remedy the identified shortcomings. Group Internal Audit as an independent division is not integrated into the workflow, nor is it responsible for the results of the audited process. In order to be able to carry out its duties, Group Internal Audit has a full and unrestricted right to information on activities, processes and the IT systems.

As the body responsible for supervising and advising the Management Board, the Supervisory Board may inspect and examine the Company's books and assets. In addition, the Management Board reports regularly to the Supervisory Board. Group Internal Audit reports to the whole Management Board and the Audit and Digitalisation Committee of the Supervisory Board at appropriate intervals, however, at least quarterly. The Supervisory Board discusses the IKS. The Supervisory Board appoints the auditors of the Consolidated Financial Statements, the Unconsolidated Financial Statements and the Combined Management Report. The Supervisory Board approves the Consolidated Financial Statements and the Combined Management Report prepared by the Management Board and audited by the independent auditors.

The auditors of the financial statements attend the Supervisory Board meetings relating to the financial statements and all of the meetings of Supervisory Board's Audit and Digitalisation Committee to report on the material findings of their audit including material weaknesses in the IKS. Where relevant, the auditors immediately eport findings and issues that emerge during the audit and that are material for Supervisory Board to carry out their duties. The Supervisory Board discusses the focus of the audit with the auditors in advance.

Report on Expected Developments

MACROECONOMIC FORECAST

The global economy is poised for a significant slowdown in 2023. In its most recent forecast from October 2022, the International Monetary Fund (IMF) anticipates a decline in global growth from 3.2% in 2022 to 2.7% in 2023 (source: IMF 2022), representing the lowest growth rate since 2001 – with the exception of the global financial crisis in 2009 and the pandemic year 2020. The loss of economic momentum in the current year can be explained by the sharp rise in inflation, which reached long-term global highs in 2022 and is expected to ease back only slowly over the coming years. The IMF forecasts global inflation to decrease to 6.5% in 2023 and 4.1% in 2024, having reached an estimated 8.8% last year (source: IMF 2022). Global monetary policy tightened significantly during 2022 in response to these price increases. A combination of higher inflation and the resulting loss of purchasing power, as well as the effects of interest rate rises, are weighing on the economy in 2023. Added to this is the ongoing geopolitical uncertainty caused by the Russian war of aggression against Ukraine, as well as tensions in other parts of the world (source: IMF 2022).

Risks to an already subdued growth outlook are unusually large, and mostly negative. In their fight against inflation, there exists the possibility that central banks will raise key interest rates too strongly, thereby triggering a recession. Conversely, monetary tightening could turn out to be insufficient, resulting in a protracted weakening of inflationary pressures. Likewise, a renewed rise in commodity prices – including energy costs – might counteract an inflation slowdown (source: IMF 2022).

Such increases in commodity prices could, for example, be due to threats to energy security in Europe, including insufficient supplies of liquefied petroleum gas, inadequate efforts to save natural gas in industry and by households, or an unusually cold 2023/24 winter season (source: ECB 2022a). Likewise, the Chinese government's departure from its zero-COVID strategy could lead to higher demand for commodities and thus fuel global inflation (source: Bloomberg 2023a).

Wage developments are also likely to contribute to inflation remaining persistently high in 2023. Despite the growth slowdown that already took hold last year, unemployment rates worldwide fell to historically low levels over the course of 2022. At the same time, the ratio between job vacancies and job seekers is unusually high (source: IMF 2022). Following a slight time lag, this tighter labour market could lead to significantly higher wage agreements this year, according to the ECB, although the IMF is yet to identify any wage-price spiral (sources: ECB 2022b, IMF 2022).

Higher than expected inflation would further reduce household purchasing power and hence dampen private consumption even more. Besides, such a development would likely lead to central banks tightening their monetary policy stance much more than previously expected, placing additional strain on economic development.

Given the expected slowdown in growth this year, it is questionable to what extent the current positive development on the labour market can continue in 2023. Towards the end of 2022, the number of job vacancies in the US as well as in the euro area (as at the end of September 2022) had already diminished slightly, although levels continue to hover around their historic highs (sources: Bureau of Labor Statistics, Eurostat). For 2023, the Federal

Reserve (Fed) expects the unemployment rate in the US to increase by about one percentage point, rising to 4.4% on average, compared to a long-term low of 3.5% in December 2022 (sources: Bloomberg 2022a, Bureau of Labor Statistics 2022b). In the euro area, the ECB expects a minimal increase from 6.7% in 2022 to 6.9% this year (source: ECB 2022a). The Bundesbank expects the unemployment rate in Germany to be 3.40% in 2023, up from 3.0% in 2022 (source: Bundesbank 2022). Meanwhile, in the UK, the Bank of England predicts unemployment to rise significantly year-on-year. This sharp increase is based on the Bank of England's expectation that the UK's GDP would contract steadily between the second half of 2022 and the first half of 2024 (source: Bank of England 2022). On an annual average, the unemployment rate could rise from 3.7% in November 2022 to 4.6% in 2023 (sources: Office for National Statistics, Bloomberg 2022b).

The unexpectedly strong inflation trend last year already led to tighter monetary policy in 2022, and is expected to continue in 2023. The Fed expects to raise key interest rates from its target range of 4.25% to 4.50% at the beginning of 2023, to 5.1% over the year 2023 (source: Fed 2022a) and keep them elevated for an extended period of time (source: Fed 2022b). In January, the Fed rejected speculation about a possible rate cut in the second half of 2023 (source: Bloomberg 2023b).

The ECB is also planning further key interest rate hikes in the initial months of the year, potentially raising the deposit rate from the 2.0% at the beginning of 2023 to at least 3.0% over the year 2023 (source: ECB 2022c). Despite the recent slight decline in inflation rates in the euro area, the ECB is emphasising that underlying inflation (core inflation) remains high, demonstrating that inflation concerns continue to dominate the central bank's agenda (source: Bloomberg 2023c).

The Bank of England last raised its key interest rate by 0.5% to 3.5% in December 2022, with financial markets expecting further interest rate hikes towards 4.5% this year (source: Bloomberg 2023d).

Fiscal policy, especially in Europe, has helped to partially cushion households and businesses from the effects of higher energy prices in 2022, thus preventing a sharper weakening of the economy. This could, however, have the undesirable side effect of forcing central banks to tighten monetary policy further, as ECB President Christine Lagarde cautions, for example (source: Bloomberg 2023c).

Fiscal measures are expected to continue to support economic growth in the euro area during 2023. From the second half of the year onwards, the economy is forecast to recover slightly, provided that energy markets find their equilibrium, uncertainty decreases, supply chains disentangle themselves and export demand gains strength (source: ECB 2022a). Both the ECB and the IMF are projecting the euro area economy to grow by just 0.5% in 2023, down from over 3% in 2022 (sources: ECB 2022a, IMF 2022).

Economic recovery is expected to be heterogeneous across the euro area (source: ECB 2022d). For example, the ECB expects Germany's GDP to decline by 0.5%, while Spain is likely to see comparatively strong growth of 1.3%. The French economy, and that of Italy, are forecast to grow by 0.3% and 0.4% respectively this year, thus falling slightly short of the euro area average.

Likewise, in the US, high inflation and sharply increased interest rates are likely to weigh on growth in 2023 (source: EU Commission 2022). In this context, the EU Commission forecasts the US economy to grow by only 0.7% this year (source: EU Commission 2022).

Output in the UK is likely to weaken significantly in 2023. While the IMF forecasts a slight increase of just 0.3%, the Bank of England is now predicting a 1.5% contraction for the economy (sources: IMF 2022, Bank of England 2022). This reflects the squeeze on real household incomes from higher energy and tradeable goods prices. Additionally, the considerably higher interest rates are a burden. Inflationary pressures are expected to remain strong throughout the year, according to the Bank of England (source: Bank of England 2022).

Economic momentum in Sweden is likely to weaken significantly in 2023. The Swedish central bank expects higher inflation and the sharp rise in interest rates to lead to a 1.2% decline in GDP this year (source: Riksbank 2022). The Riksbank is likely to hike its key interest rate further from 2.5% towards 3% at the beginning of 2023. Inflation is forecast to ease over the course of the year and stabilise at around 2% by 2024.

The EU Commission's growth forecast for Eastern Europe in 2023 is low at 0.7% in Poland and near stagnation in Hungary and the Czech Republic at 0.1% each (source: EU Commission 2022). Weak foreign demand, a sharp rise in interest rates and higher energy prices are the main factors dampening growth.

SECTOR-SPECIFIC FORECASTS

Overall Situation in the Banking Sector

The financial sector faces a number of challenges in 2023. The first is that last year's significant rise in interest rates could lead to losses in banks' bond portfolios, which in turn could compromise the sector's capitalisation. In addition, the rise in interest rates is likely to make funding more expensive for banks. In the medium term, however, the sector should benefit from higher interest income in the lending business (source: Bundesbank 2022b).

The slowdown in global growth expected for 2023 poses a further challenge. This could lead to an increase in default rates in the loan portfolio, and applies in particular to loans issued to businesses, as they benefited from the low interest rate environment and – until the outbreak of the pandemic – from a positive economic environment (source: Bundesbank 2022b).

Real estate loans are also vulnerable to rising interest rates, an economic slowdown and weaker house prices. However, these risks are limited by the fact that real estate loans are generally secured and, in the case of long-term fixed interest rates, the effects of rising interest rates will only be felt over a longer period of time (source: Bundesbank 2022b).

Finally, the sector is still faced with the challenge of having to further develop its business models and improve its efficiency (source: S&P Global 2022). Here, it is essential to exploit the opportunities of digitalisation for the financial sector. Furthermore, aspects of sustainability, for example in the lending business or in financial products and services, will continue to be extremely important (source: BaFin 2023).

Real Estate Finance

Not since the financial crisis has the future of real estate investments been so uncertain, and this new environment poses many challenges for investors: overall activity in real estate transactions has declined sharply as investors pause to reassess the risks to which they are exposed. In the medium term, further cooling in inflation rates and some stability in bond yields and borrowing costs will provide a degree of certainty and give buyers and sellers a sounder basis for their buy and hold decisions. Until then, investment volumes will remain at a low level and property yields will continue to rise. Due to uncertainty regarding the future structure of working from home and the cost of ESG implementation, there is a particular value risk for ageing office buildings and those in poor locations (sources: JLL, RealCapitalAnalytics).

Public Investment Finance

Public sector investments are supported by the EU reconstruction fund "NextGenerationEU", which has a budget in excess of €700 billion available to EU member states to support them in their huge investment needs (source: European Commission). In its Autumn 2022 Economic Forecast, the European Commission saw the ratio of public sector investment to GDP for 2023 rise again slightly to 3.4% in the EU compared to 2022.

Value Portfolio

pbb Group expects developments in 2023 to remain hard to assess; however, given the ECB's objective of stable money and financial markets, it is reasonable to assume that this stabilisation will continue to be supported by ECB measures (source: ECB).

Increased credit spread volatility seen in Value Portfolio assets last year is expected to continue in 2023 (source: Bloomberg).

Italy, as in the previous year, will be monitored more closely due to the existing instability.

Funding Markets

Macroeconomic and political uncertainty is likely to persist for some time. More specifically, it is the course of the war in Ukraine, high inflation and future ECB policy that will continue to be the determining factors on the capital markets. Even though inflation will remain at a high level, it is likely to have passed its peak and is expected to cool down somewhat. Following the steep rate hikes in 2022, it is likely that the central banks will respond to lower inflation with smaller interest rate adjustments. In parallel, as from March 2023 the ECB is expected to start gradually reducing the bond holdings acquired under its APP purchase programme. Looking at the primary markets, pbb Group once again anticipates very high issuance volume of covered bonds. Continued strong supply, combined with a decline in ECB purchases, is likely to lead to a widening of spreads. Due to the continued high-risk environment and increased yields, covered bonds are expected to remain an attractive asset class for investors. Furthermore, pbb Group assumes that as a result of the improving sentiment for unsecured bank bonds, this asset class will resume a greater role in funding activities (sources: ECB, Bloomberg).

COMPANY FORECASTS

The forecasts for pbb Group's future development represent estimates that were made on the basis of the information currently available. If the assumptions on which the forecasts are based on do not materialise or if risks and opportunities do not occur to the extent calculated, the actual results may differ significantly from the results currently expected.

Future Developments in Assets, Financial Position and Earnings

Due to the continuing macroeconomic and industry-specific uncertainties, the forecast for the performance indicators defined in the chapter "Internal Management System" for the 2023 business year is characterised by a high degree of uncertainty. Overall, the following is forecast for the performance indicators in the 2023 financial year:

Key performance indicator	Initial position (financial year 2022)	Forecast (Financial year 2023)
New business volume Real Estate Finance (including prolongations with maturities of more than one year)	€9.0 billion	€9.0 billion to €10.0 billion
Finanzierungsvolumen Real Estate Finance	€29.3 billion	slight increase
Profit before tax	€213 million	€170 million to €200 million
Cost-income ratio	45.6%	50% to 55%
Return on CET1 capital after tax	6.0%	4.5% to 5.0%
CET1 ratio	16.7%	significantly above the SREP ratio of approximately 8.4% that pbb has to comply with in addition to the country-specific (and thus portfolio-specific) varying counter-cyclical capital buffer

In 2023, the REF segment should again contribute the lion's share of pre-tax profit.

With regard to risk-bearing capacity, the normative perspective aims to ensure that minimum capital ratios required by the supervisory authorities are met even under an adverse economic scenario. With regard to the economic perspective, pbb Group aims to ensure that the capital available to cover the risks adequately exceeds the economic capital requirement on a sustained basis.

Opportunities and Risks

Politics and geopolitical tensions
Economic risks continued to rise in 2022, mainly driven by the war between Russia and Ukraine and the resulting reciprocal sanctions and embargoes between EU member states and other Western countries on the one hand and Russia and Belarus on the other. This has fuelled inflation – amid significantly higher energy prices and other factors – and strongly driven up interest rates. As a consequence, deep clouds have formed over the entire global economy and a harsh, persistent recession may follow.

Economic and geopolitical tensions could lead to distortions in the markets relevant to pbb Group, burdening its financial position and financial performance. Further escalation of the war, or its extension to other countries, could have a negative impact on economic developments. Tougher sanctions may also have negative implications. Overall, these can give rise to impairment, with discounts being applied to fair values, or other negative effects (sources: German Council of Economic Experts; Information Service of the German Economic Institute).

Economy
Besides the effects of the Russian war of aggression against Ukraine, a slowing economy or indeed a recession could increase the required level of provisions for pbb Group, leading to lower fair values of financial assets as well as a drop in new business volume, thus also burdening financial performance. In addition to this, persistent supply bottlenecks or a marked increase in inflation (as seen in recent months) could also have a dampening effect on the economy. In contrast, positive economic development in the euro area and especially in Germany is expected to have a favourable impact on financial performance; pbb Group will, for example, only have to recognise moderate provisions when assuming credit risks, and the fair values of financial assets could increase (sources: ifo Institute, German Economic Institute).

National debt
To combat the economic burdens brought about by the COVID-19 pandemic and the war between Russia and Ukraine, many sovereign governments, federal states and municipalities have taken on significant amounts of debt. As a consequence, the rating of public sector budgets may be downgraded or they may even become insolvent, which would result in impairment losses and payment defaults for pbb Group (source: Federal Statistical Office).

Funding and liquidity
Costs for unsecured funding increased significantly in 2022, with a negative impact on net interest income. Any further increase may make new business on the asset side less attractive for pbb Group. Even if pbb Group maintains a good level of liquidity, there is a risk that funding markets may dry up in extreme circumstances, resulting in a liquidity shortage. Conversely, a decline in funding costs may benefit net interest income.

Environmental risks and climate change
Governments around the world have taken steps to make the transition to a lower-carbon and more circular economy in order to mitigate climate change. This transformation harbours both opportunities and risks for the economy in general, and for pbb Group specifically.

Damage to property caused by environmental destruction and climate change can have considerable consequences for the real economy and the financial system. This can lead to, for example, increasing damage to buildings or other assets held as collateral for financings, caused by flooding, storms, drought or other natural disasters. Although pbb Group's clients are required to insure the physical collateral on which the financings are based, negative effects on the Group's net assets, financial position and results of operations cannot be ruled out (source: ECB).

Increasingly, the sustainability of real estate has an impact on value when leased and sold. Higher value adjustment requirements may therefore arise in the case of non-sustainable properties (source: Energy Efficiency Financial Institutions Group).

The necessary transformation towards becoming more sustainable will presumably lead to considerable financial and capital requirements. Risks may arise, for example, in the form of impairments on pbb Group's loans and advances if borrowers are unable to fund these requirements from their own income. However, the transformation can also generate business opportunities. Examples on the assets side include financings for sustainable buildings or energy-efficient refurbishments, which pbb Group already offers through green loans. On the liabilities side, additional issuance of green bonds can create opportunities.

Real estate markets
Real estate prices increased considerably in the years leading up to the COVID-19 pandemic. During this time, the various property types developed differently. Logistics properties, for example, benefited from an even stronger focus on e-commerce and the need for more resilient global supply chains. Residential real estate continues to experience an insufficient supply of space, bolstering market values. For other property types, uncertainty about further development and the risk of declines in value are greater. Particular uncertainty surrounds the future development of office properties. Real vacancies only increased slightly for office properties during the COVID-19 pandemic in certain markets, and the trend towards working from home could significantly reduce the demand for space. In addition, office properties have more catching up to do in terms of the transformation towards higher sustainability. Risks may increase if clients are burdened by recession and rising market interest rates (sources: PMA, JLL, Real-CapitalAnalytics).

Taking into account the high level of uncertainty in office properties and the gloomier market outlook towards the end of 2022, pbb recognised a management overlay in impairments as at 31 December 2022. There is a risk, however, that defaults from this portfolio or from real estate financing as a whole will be higher than the loss allowance recognised. On the other hand, reversals of impairments could have a positive impact on financial performance in the event that defaults are low.

Interest Rates
Should market interest rates in the euro area continue to rise, investing the liquidity reserves and own funds could improve pbb Group's financial performance; at the same time, funding costs would increase. In addition, a higher interest burden for pbb Group's clients could make it more difficult to service payment obligations in a timely manner. As a result, impairment losses on financings are possible.

Competition
Due to worsening economic conditions, pbb Group also anticipates intense competition in commercial real estate financing during 2023. The resulting pressure on margins may in turn weigh on pbb’s financial performance. Conversely, a slowdown in the intensity of competition – for example due to consolidation in the banking industry – would benefit the Bank's financial performance.

Expansion into new business models
pbb is expanding its business model to include the new Real Estate Investment Management segment. By expanding into investment management, pbb is systematically diversifying its business model, aiming to tap new sources of income without significantly burdening capital ratios. Initial investment will also be required, however, which will have a negative effect on financial performance.

Evolution of the COVID-19 pandemic
The impact of the COVID 19 pandemic on overall economic and sector-specific development was reduced significantly in 2022. Few social restrictions remain in pbb Group's core market countries. However, the severe COVID-19 wave in China is likely to have negative implications for the global economy. In addition, viral mutations could make restrictions necessary again. This may result in a negative impact on financial performance, such as impairment losses on financings (source: RedaktionsNetzwerk Deutschland).

Digitalisation
In view of increasing cost competition in the banking sector – amplified by so-called FinTech and PropTech companies – and in order to explore new sources of income, pbb Group is increasingly focusing on digital business processes and models. In future, digitalisation may incur risks as well as opportunities for pbb's net assets, financial position and financial performance, depending especially on the success of digital business models and further IT developments.

Regulatory environment
pbb Group is required to adhere to a wide variety of legal and regulatory requirements and provisions. The further development of provisions can both positively and negatively impact the Group's net assets, financial position and financial performance, as well as capital requirements, funding and pbb Group's business activities. Furthermore, implementation and monitoring costs are usually incurred.

Within the scope of the SREP, a CET1 minimum ratio and an own funds minimum ratio were set for pbb Group. It cannot be ruled out that the ECB will in future impose increased capital requirements and higher capital ratios or a change in the RWA calculation (IRBA model adjustment). Overall, this could impact pbb Group's net assets, financial position and financial performance.

The announced increase in countercyclical capital buffers as well as the systemic risk buffer for German residential construction loans will have an impact on pbb Group's capital requirements in 2023. Based on the figures as at 31 December 2022, the effect of all currently known increases in the countries relevant for pbb Group (including Germany) as well as the systemic risk buffer would result in a total institution-specific buffer of up to 0.8%. This figure does not take into account potential developments in 2023. The actual amount of the buffer to be applied for the first time in 2023 depends on the development of the relevant RWAs as well as on further country-specific adjustments.

IT Security
pbb Group attaches great importance to the security of its information systems. The aim is to keep IT systems running smoothly and to prevent unauthorised access to system and data resources. Employees of pbb Group may only access data they require for the tasks assigned to them. Should the risk of loss of confidentiality, integrity and authenticity of data materialise, for example through (cyber) attacks, it may lead to manipulations and/or to an uncontrolled outflow of data, to a loss of reputation and thus to a negative impact on the net assets, financial position and financial performance of pbb Group.

Human Resources
pbb Group has attracted highly qualified employees and executives in recent years. A modern and flexible working environment, a broad range of training and personnel development measures, as well as attractive remuneration and fringe benefits all help to retain employees for the long run. Nevertheless, risks from employee losses and the associated loss of knowledge cannot be fully excluded. In order to continue to successfully attract new employees, pbb Group is increasingly focusing on the recruitment and development of young talent and has developed an employer brand for itself, making greater use of modern recruitment channels. The general shortage of skilled staff may nevertheless have a negative impact.

Legal and tax matters

It is possible that legal proceedings yield different results than expected by pbb Group. Thus, an outflow of resources can deviate positively or negatively from the recognised provisions. Risks can also arise from new legal action. Depending on the type of deviation and legal action, this may result in opportunities or risks for pbb Group's financial performance. This risk also covers external tax audits by fiscal authorities, which may result in additional taxable income and thus increased tax expenses attributable to previous periods.

Corporate Social Responsibility

Corporate social responsibility refers to a responsible, entrepreneurial spirit that integrates environmental and social aspects as well as responsible corporate governance – on a voluntary basis – into business activities and in interactions with stakeholders and beneficiaries.

pbb makes a voluntary contribution to a more sustainable development that goes beyond the legal requirements. This can create opportunities for pbb Group, for example, in the client business and as an attractive employer. In contrast, weaknesses in corporate social responsibility can weigh on the relationship to internal and external groups of individuals with whom pbb Group interacts, with corresponding negative effects on its financial position and financial performance.

SUMMARY

pbb is well positioned for continued profitability, in an environment that features not only declining margins due to increased competition, but also increasingly stringent regulatory requirements. However, due to the huge macroeconomic and sector-specific uncertainties, mainly caused by the ongoing war between Russia and Ukraine, forecasting risk provisioning is particularly difficult at present. Giving due consideration to the opportunities and risks, pbb Group expects to generate a pre-tax result of between €170 million and €200 million in 2023.

Commentary on pbb's Annual Financial Statements under HGB

BUSINESS DEVELOPMENT

In the year under review, pbb generated a pre-tax result of € 128 million in its annual financial statements prepared in accordance with the German Commercial Code (HGB), compared to € 220 million in the previous year. The main reasons for this decline were the absence of floor income and lower compensation from the early repayment of loans by customers, as well as changes in the parameters used to measure pension provisions as a result of higher inflation. As a result of the lower volume of early loan repayments, the financing volume increased. Its development and pbb's new business volume correspond to the information presented in the Economic Report of pbb Group.

DEVELOPMENT IN EARNINGS

in € million	2022	2021
Net interest income	508	583
Net fee and commission income	5	6
Net other operating income	-9	-36
Net operating income	**504**	**553**
General and administrative expenses	-290	-246
Personell expenses	-172	-135
Non-personell expenses (including depreciation and write-offs)	-118	-111
Operating results (before loan loss provisions)	**214**	**307**
Risk provisioning	-81	-85
Net income from financial investments	-5	-2
Additions to the fund for general banking risks	-	-
Operating results	**128**	**220**
Extraordinary result	-	-
Profit before tax	**128**	**220**
Taxes	-14	-38
Net income	**114**	**182**

Net Operating Income

Net interest income declined from €583 million in the previous year to €508 million in 2022, with a positive contribution from commercial real estate financing being more than offset by other effects which pbb could only influence to a limited extent. The positive development of the interest contribution from commercial real estate financing resulted from the increase in the average volume of disbursed and thus interest-bearing REF financing to € 28.6 billion (average volume in 2021: €27.2 billion). This increase in financing volume resulted from a constant volume of new business compared to the previous year and significantly lower early repayments. As a consequence of the lower volume of early repayments and the resulting perspective-based net interest income, early repayment fees fell significantly from €84 million in the previous year to €18 million in 2022. As a further effect which pbb can only influence to a limited extent, income from interest rate floors in the customer business fell significantly as a result of the increased interest rate level. In addition, net interest income has not benefited from the interest rate premium of 50 basis points for liabilities under the TLTRO III programme since the second half of 2022, which was only partially offset by the interest rate on the TLTRO III programme at the average rate of the deposit facility for the past three years until the ECB's treaty adjustment in the fourth quarter. The termination and novation of derivatives resulted in income of €7 million (2021: income of €15 million). As in the previous year, net interest income included the coupon payment for the AT1 capital in the amount of €17 million (2021: €17 million).

Net fee and commission income from non-accruable fees was at €5 million (2021: €6 million).

Net other operating income/expenses amounted to €–9 million (2021: €–36 million), with expenses for the bank levy (2021: €31 million; 2021: €27 million) – taking into account pledged collateral amounting to 15 per cent – being the biggest individual item. The year-on-year increase in expenses for the bank levy was due, amongst other factors, to a significant increase in the Resolution Fund's target volume at EU level. Net other operating income/expenses also included €4 million in currency translation expenses (2021: expenses of €6 million). In the case of provisions outside the lending business, the reversals exceeded the allocations by € 24 million (2021: net allocations of € 3 million), in particular due to the final clarification of tax issues. In the previous year, however, the corresponding additions and reversals largely balanced each other out.

General and Administrative Expenses
General and administrative expenses amounted to €290 million (2021: €246 million). Personnel expenses increased mainly due to effects from the valuation of defined benefit pension obligations. The main reason for the additions to the pension obligations was the valuation parameter pension dynamic (2.50%; 2021: 1.50%), which was adjusted as a result of higher inflation. In addition, the valuation parameter discount rate decreased (1.78%; 2021: 1.87%). As a third reason, the first-time application of an accounting note from the Institute of Public Auditors in Germany on the valuation of provisions for reinsured pension obligations led to an expense of €14 million. In the previous year, personnel expenses were burdened by provisions of €10 million for termination benefits in connection with digitalisation measures to increase efficiency and improve processes. Other administrative expenses were higher than in the previous year due to higher costs for regulatory and strategic projects.

Risk Provisioning
Risk provisioning, being the balance of provisions for possible loan losses and the result from securities and promissory note loans of the liquidity reserve, was increased by net additions of €81 million (2021: €85 million). In terms of the lending business, a net amount of €5 million (reversal, 2021: €45 million net additions) referred to general valuation allowance recognised to account for potential default risks in the lending business. For third-party securities and promissory note loans in the liquidity reserve, the lower of cost or market value write-downs increased by a net amount of €39 million (2021: €1 million), mainly due to interest rate changes.

The generally gloomy economic forecast and deterioration in the parameters of individual financings led to an increase in general loan loss provisions. The general risk provisions also include income from valuation changes in the amount of €52 million, which are described in the notes to the annual financial statements. In addition, an expense of €7 million is included from the reversal of the existing management overlay for risks in connection with the COVID 19 pandemic and the creation of a new management overlay for specific risks from office property financing. The reasons for and determination of the management overlay are also presented in detail in the notes to the annual financial statements.

Additions to specific loss allowances (€45 million, 2021: €39 million) mainly related to financing for three shopping centres in the UK and one in Germany. All shopping centres are located in medium-sized cities in predominantly structurally weaker regions. Negative developments (Ukraine war, rising energy prices, inflation, higher interest rates, long-term effects of Brexit, investor sentiment, etc.) led to a further reduction in expected returns from financings. Shopping centres in these macro locations have not been a target business for years, and pbb is generally very cautious about this asset class.

Net Income from Financial Investments
Net income from financial investments amounted to €-5 million (2021: €-2 million). Although a net income in the amount of €3 million was accounted for the reversal of general valuation allowances on securities held as fixed assets (2021: net expense of €2 million for general allowances and losses on sales), this was more than offset by write-downs on shares in affiliated companies amounting to €8 million (2021: write-ups of less than €1 million).

Taxes
The tax expense amounted to €14 million (2021: €38 million) and almost exclusively resulted from expenses for taxes on income.

DEVELOPMENT IN ASSETS

in € million	31.12.2022	31.12.2021
Cash reserve	46	6,607
Loans and advances to other banks	7,549	3,484
Loans and advances to customers	38,345	37,406
Bonds and other fixed-income securities	6,631	6,966
Equity shares and other variable-yield securities	2	2
Investments in affiliated companies	5	13
Intangible assets	29	19
Tangible assets	2	3
Sundry assets	229	87
Prepaid expenses	293	259
Total assets	**53,131**	**54,846**

General Development in Assets

As at the reporting date, pbb's total assets stood at €53.1 billion, which is an increase of €1.7 billion compared to 31 December 2021. The decline resulted, among other things, from a significantly lower cash reserve, as the free liquidity on the central bank accounts was used for the partial repayment of TLTRO III liabilities. In contrast, loans and advances to credit institutions increased due to higher repurchase agreements. Loans and advances to credit institutions include €1.0 billion in overnight balances with the Bundesbank. Loans and advances to customers were above the level of the end of the previous year. The higher nominal volume of commercial real estate financing more than compensated for the strategic decline in public financing and the value portfolio. The run-off of the Value Portfolio also affected debt and other fixed-income securities, in the form of maturities.

DEVELOPMENT IN FINANCIAL POSITION

in € million	31.12.2022	31.12.2021
Liabilities to other banks	8,021	11,000
Liabilities to customers	18,194	18,028
Securitised liabilities	22,291	21,134
Sundry liabilities	21	26
Deferred income	477	470
Provisions	267	264
Subordinated liabilities	638	657
Additional Tier 1 capital instruments	312	312
Fund for general banking risks	47	47
Total liabilities	**50,268**	**51,938**
Equity	2,863	2,908
Total liabilities and equity	**53,131**	**54,846**

Liabilities

Liabilities amounted to €50.3 billion (31 December 2021: €51.9 billion). The reason for the decline was primarily the partial repayment of TLTRO III liabilities, which significantly exceeded the higher portfolio of repurchase agreements within liabilities to credit institutions. New issuances led to an increase in securitised liabilities. Within liabilities to customers, the decline in public financing and the increase in customer deposits largely offset each other.

Additional regulatory capital instruments include Additional Tier 1 (AT1) capital in the total nominal amount of €300 million and a carrying amount of €312 million, including interest accrued. The bond issued by pbb in April 2018 carries an initial coupon of 5.75% p.a. and has no final maturity. There are certain conditions attached to the coupon payments.

Equity

in € million	31.12.2022	31.12.2021
Share capital	380	380
Additional paid-in capital	1,639	1,639
Retained earnings	716	730
Unappropriated retained earnings	128	159
Equity	**2,863**	**2,908**

For the financial years 2022 and 2021, pbb's share capital was unchanged, at € 380,376,059.67, consisting of 134,475,308 registered ordinary bearer shares in the form of no-par value shares with a notional interest in the share capital of €2.83 per share. The additional paid-in capital remained unchanged. Within retained earnings, legal reserves remained unchanged in the financial years 2022 and 2021. €14 million was withdrawn from net retained profit to other retained earnings, (31 December 2021: €60 million allocation to other retained earnings, comprising €23 million from from net income and €37 million from profits carried forward from 2020).

Pursuant to a resolution adopted by the Annual General Meeting on 19 May 2022, pbb paid a dividend of €1.18 per no-par value share entitled to dividends (in total therefore €159 million) to its shareholders.

Key Regulatory Capital Ratios

According to Art. 7 (3) of the Capital Requirements Regulation ("CRR"), pbb was exempted from the requirements laid out in parts 2 to 5 and 8 of the CRR; for instance, this includes own funds and capital requirements, stipulations on large exposures and exposures to transferred credit risk, as well as disclosure requirements. As a result, pbb is also exempt from the requirements of Part 7 of the CRR in accordance with Art. 6 (5) CRR.

Disclosures Pursuant to Section 315a (1) HGB

pbb Group's Supplemental Information according to section 315a (1) of the German Commercial Code (HGB) is equal to pbb's Supplemental Information according to section 289a (1) HGB.

Composition of Subscibed Capital (Section 315a (1) No. 1 HGB)
The composition of pbb's subscribed capital is disclosed in the Note "Equity". Each bearer share with no par value entitles the shareholder to one vote at the Annual General Meeting. pbb currently does not hold any nonvoting treasury shares. No shareholder and no shareholder group is entitled to special rights, that confer power to control vis-á-vis pbb.

RESTRICTIONS AFFECTING THE VOTING RIGHTS OR THE TRANSFER OF SHARES (SECTION 315A (1) NO. 2 HGB)

With respect to the exercise and transfer of voting rights of shares only the statutory provisions apply. The voting rights are not limited by size. All shareholders who register for participation in the Annual General Meeting in time and who have demonstrated their right to participate in the Annual General Meeting and to exercise their voting rights may exercise the voting rights subject to a possible loss of rights in accordance with section 44 of the German Securities Trading Act (Wertpapierhandelsgesetz, WpHG) or section 59 of the German Securities Acquisition and Takeover Act (Wertpapiererwerbs- und Übernahmegesetz; WpÜG) attached to all the shares held and registered by them. Where pbb holds treasury shares, section 71b of the German Stock Corporation Act (Aktiengesetz, AktG) prohibits the exercise of rights vested in such shares.

HRE Holding has committed itself to avoid exercise of control over pbb by entering into a control avoidance agreement with pbb. HRE Holding undertakes to exercise voting rights vested to it at the point in time at which the control avoidance agreement enters into effect, and/or at any subsequent point in time at which HRE Holding holds pbb shares, to a maximum of 49% of the present voting capital at the adoption of resolutions regarding the appointment or removal of Supervisory Board members as well as resolutions taken as part of management decisions according to sections 83, 111 (4) sentences 3 to 5, 119 (2) or 179a of the AktG, not to make any proposals for resolution to pbb's Annual General Meeting, in particular for the appointment of Supervisory Board members, and not to vote for candidates for pbb's Supervisory Board which are not independent from HRE Holding, Finanzmarktstabilisierungsfonds-FMS (FMS), FMSA and the Federal Republic of Germany, with the exception of two Supervisory Board members proposed by FMSA to pbb in line with the new framework agreement.

pbb is not aware of any other restrictions affecting voting rights or the transfer of shares.

Shareholdings Exceeding 10% of Voting Rights (Section 315a (1) No. 3 HGB)
According to the knowledge of pbb no shareholder held at least 10% interest in the pbb as of 31 December 2022.

The notifications of voting rights pursuant to sections 33 et seq. of the German Securities Trading Act (Wertpapierhandelsgesetz, WpHG), published by pbb, are available online, inter alia, under "https://www.pfandbriefbank.com/en/investors/mandatory-publications/notifications-according-to-33-et-seq-wphg.html".

Shares with Special Rights Conferring Powers of Control (Section 315a (1) No. 4 HGB)
Shares carrying special rights, which would permit the holder to exercise control, do not exist.

Type of Control of Voting Rights Regarding Shares Held by Employees with their Rights of Control not Being Directly Exercised (Section 315a (1) No. 5 HGB)
Employees holding pbb shares exercise their rights, like all other shareholders, according to statutory provisions and the Articles of Association.

Statutory Provisions, and Provisions in the Articles of Association Regarding the Appointment and Removal of Members of the Management Board, and Regarding Amendments to the Articles of Association (Section 315a (1) No. 6 HGB)
In accordance with section 84 of the AktG and section 6 of the Articles of Association, the members of the Management Board are appointed by the Supervisory Board. The number of members of the Management Board is determined by the Supervisory Board. Pursuant to the Articles of Association, the Management Board consists of at least two members. Members of the Management Board are appointed for no more than five years per term. The term of office may be renewed or extended for a maximum of five years in each case. In case of urgency, the Local Court of Munich (Amtsgericht) shall appoint a missing member of the Management Board upon application of a party involved (section 85 of the AktG). The Supervisory Board may revoke an appointment to the Management Board, and also an appointment to the position of Chairman of the Management Board, should there be good cause for doing so.

Evidence that the Management Board members are trustworthy, have the required professional qualifications, and are sufficiently available, must be provided to BaFin, ECB and the German Bundesbank. According to section 45c of the German Banking Act (Kreditwesengesetz, KWG), BaFin may appoint a special representative, and entrust him or her with the performance of activities of individual Management Board members. BaFin may prohibit members of the Management Board from carrying out their activities, or limit the performance of these activities.

Any amendment of the Articles of Association requires a resolution of the Annual General Meeting (section 179 (1) sentence 1 of the AktG), for which generally a simple majority of the votes cast is required according to section 17 of the Articles of Association, provided, however, that no higher majority is required by law or other sections of the Articles of Association. In cases where a majority of the share capital represented during the passing of the relevant resolution is required – under no formal restrictions – due to regulatory requirements, the simple majority of the share capital represented during the passing of the relevant resolution shall be sufficient. According to section 9 (3) of the Articles of Association, the Supervisory Board shall be authorised to amend the Articles of Association, provided that such amendments are restricted to the wording.

Authorisation of the Management Board to Issue or Repurchase Shares (Section 315a (1) No. 7 HGB)

Authorised Capital 2020/I
In the period until 27 May 2025 the Management Board is authorised to increase, on one or more occasions, pbb's share capital by up to a maximum total amount of €114,112,817.90 by issuance of new ordinary bearer shares with no par value for contribution in cash, subject to the approval of the Supervisory Board (authorised capital 2020/I). The shareholders' subscription rights may be excluded under certain conditions. The authorised capital 2020/I has not been used yet.

Authorised Capital 2020/II
In the period until 27 May 2025 the Management Board is authorised to increase, on one or more occasions, pbb's share capital by up to a maximum total amount of €38,037,605.96 by issuance of new ordinary bearer shares with no par value for contribution in cash or in kind, subject to the approval of the Supervisory Board (authorised capital 2020/II). The shareholders' subscription rights may be excluded under certain conditions. The authorised capital 2020/II has not been used yet.

Furthermore, the Management Board shall be authorised, with the consent of the Supervisory Board, to determine further details concerning the rights attached to shares as well as the conditions of share issuances in the context of the capital measures specified in section 4 of the Articles of Association (authorised capitals 2020/I and 2020/II).

Conditional Capital
Currently there is no conditional capital.

Profit Participation Rights and Hybrid Bonds
The Management Board is authorised to issue bearer or registered profit participation rights and other hybrid financial instruments with or without a limited term on one or more occasions until 27 May 2025. The total nominal amount of the financial instruments to be issued under this authorisation may not exceed €2,000,000,000.00 in total.

Treasury Shares
pbb is authorised to buy, for purposes other than securities trading, its own shares in a total volume of up to 10% of the share capital as of 28 May 2020 or – if such amount is lower – of the share capital at the time this authorisation is exercised. Together with other own shares which are in the Company's possession or attributable to the Company pursuant to sections 71d and 71e of the AktG, the own shares purchased on the basis of this authorisation may not at any time exceed 10% of the Company's share capital. This authorisation to acquire own shares may be exercised directly by pbb, Group entities (section 18 (1) of the AktG) subordinated to pbb, or third parties acting on behalf of pbb or on behalf of Group entities subordinated to pbb. This authorisation may be exercised fully or partially, and – in case of a partial exercise – more than once. This authorisation applies until 27 May 2025. The own shares may, at the discretion of the Management Board, be bought through a stock exchange or by means of a public purchase offer or by means of a public invitation to all shareholders to submit tenders described in more detail in the resolution of the Annual General Meeting of 28 May 2020.

The Management Board is authorised, with the consent of the Supervisory Board, to use any shares purchased on the basis of the authorisation described above for a disposal on the stock exchange or for an offer to all shareholders or to dispose against cash payment provided that the price may not be substantially lower than the stock price of the shares of the Company of the same kind by applying section 186 (3) sentence 4 of the AktG analogously, or to dispose against contribution in kind or to redeem the shares. The shareholders' subscription rights may be excluded as described in more detail in the resolution of the Annual General Meeting of 28 May 2020.

As at 31 December 2022, pbb held no treasury shares.

Material Company Agreements which are Subject to Change of Control Clauses Triggered in the Event of a Takeover Offer (Section 315a (1) No. 8 HGB)

pbb did not enter into material agreements which are subject to change of control clauses triggered in the event of a takeover offer.

Compensation Agreements Entered into with Members of the Management Board or Employees in the Event of a Takeover Offer (Section 315a (1) No. 9 HGB)

There are no compensation agreements within the meaning of Section 315 (4) No. 9 HGB that have been concluded with members of the Management Board or employees in the event of a takeover offer.

Corporate Governance Statement

The Corporate Governance Statement is published on pbb's website (www.pfandbriefbank.com/company/corporate-governance.html).

Consolidated Financial Statements

Income Statement

Income statement

in € million	Note	2022	2021
Net interest income	34	489	494
thereof: interest income from financial instruments not measured at fair value through profit or loss (IAS 1.82a)		1,296	1,160
Net fee and commission income	35	8	8
Net income from financial instruments at fair value through profit or loss (net income from fair value measurement)[1)]	36	20	10
Net income from derecognition of financial instruments not measured at fair value through profit or loss (net income from realisations)[1)]	37	15	81
thereof: from financial assets at amortised cost		20	86
Net income from hedge accounting	38	-	-
Net other operating income	39	-1	-2
Net income from allowances for credit losses on financial assets (net income from risk provisioning)[1)]	40	-44	-81
General and administrative expenses	41	-224	-219
Expenses from bank levies and similar dues	42	-32	-29
Net income from write-downs and write-ups of non-financial assets	43	-18	-20
Profit before tax		**213**	**242**
Income tax	44	-26	-14
Net income		**187**	**228**
attributable to: Shareholders of pbb		188	229
Non-controlling interests in equity		-1	-1

[1)] Solely the condensed and parenthesised line item descriptions are used subsequently.

Earnings per share

in €	Note	2022	2021
Basic earnings per share	46	1.27	1.58
Diluted earnings per share	46	1.27	1.58

Statement of Comprehensive Income

Statement of comprehensive income

in € million	2022	2021
Net income	**187**	**228**
Accumulated other comprehensive income	-11	-7
Items that will not be reclassified to profit or loss, net of tax	62	26
Gains/losses on pension commitments, before tax	69	16
Income tax relating to items that will not be reclassified to profit or loss	-7	10
Items that may be reclassified to profit or loss, net of tax	-73	-33
Gains/losses on cash flow hedge accounting, before tax	2	-9
unrealised gains/losses	-	-
gains/losses reclassified to profit or loss	2	-9
Gains/losses on financial assets at fair value through other comprehensive income, before tax	-85	-24
unrealised gains/losses	-85	-24
gains/losses reclassified to profit or loss	-	-
Income tax relating to items that may be reclassified to profit or loss	10	-
Comprehensive income for the period	**176**	**221**
attributable to: Shareholders	177	222
Non-controlling interests in equity	-1	-1

Statement of Financial Position

Assets

in € million	Note	31.12.2022	31.12.2021	1.1.2021
Cash reserve	9, 47	1,044	6,607	5,376
Financial assets at fair value through profit or loss	10, 48	1,075	1,180	1,368
Positive fair values of stand-alone derivatives		562	540	737
Debt securities		117	132	134
Loans and advances to customers		394	505	494
Shares in investment funds qualified as debt instruments		2	3	3
Financial assets at fair value through other comprehensive income	11, 49	1,692	1,258	1,529
Debt securities		1,409	943	1,384
Loans and advances to customers		283	315	145
Financial assets at amortised cost after credit loss allowances	12, 50	48,734	48,087	48,669
Financial assets at amortised cost before credit loss allowances		49,121	48,429	48,913
Debt securities		5,377	6,893	7,481
Loans and advances to other banks		5,763	2,646	1,874
Loans and advances to customers		37,839	38,710	39,358
Claims from finance lease agreements		142	180	200
Credit loss allowances on financial assets at amortised cost		-387	-342	-244
Positive fair values of hedge accounting derivatives	13, 51	262	1,009	1,651
Valuation adjustment from porfolio hedge accounting (assets)	14, 52	-84	5	27
Tangible assets	15, 53	27	32	38
Intangible assets	16, 54	49	42	40
Other assets	17	58	50	47
Current income tax assets	27	31	3	19
Deferred income tax assets	27	119	129	95
Total assets		**53,007**	**58,402**	**58,859**

Liabilities and equity

in € million	Note	31.12.2022	31.12.2021	1.1.2021
Financial liabilities at fair value through profit or loss	18, 56	686	559	596
Negative fair values of stand-alone derivatives		686	559	596
Financial liabilities measured at amortised cost	19, 57	47,672	52,656	52,570
Liabilities to other banks		7,507	10,633	9,844
Liabilities to customers		17,889	20,100	22,583
Bearer bonds		21,641	21,268	19,457
Subordinated liabilities		635	655	686
Negative fair values of hedge accounting derivatives	20, 58	1,125	1,372	1,920
Valuation adjustment from porfolio hedge accounting (liabilities)	21, 59	-112	70	137
Provisions	22, 60	135	231	246
Other liabilities	23	57	55	62
Current income tax liabilities	27	19	34	34
Liabilities		**49,582**	**54,977**	**55,565**
Equity attributable to the shareholders of pbb	24, 63	3,125	3,124	2,996
Subscribed capital		380	380	380
Additional paid-in capital		1,637	1,637	1,637
Retained earnings		1,214	1,202	1,067
Accumulated other comprehensive income		-106	-95	-88
Additional equity instruments (AT1 capital)		298	298	298
Non-controlling interest in equity		2	3	-
Equity		**3,425**	**3,425**	**3,294**
Total equity and liabilities		**53,007**	**58,402**	**58,859**

Statement of Changes in Equity

Statement of changes in equity

in € million	Subscribed capital	Additional paid-in capital	Retained earnings	Pension commit-ments	Cash flow hedge accounting	Financial assets at fair value through OCI	Additional equity instruments (AT1 capital)	Non-controlling interest	**Equity**
	Equity attributable to the shareholders								
				Accumulated other comprehensive income (OCI) from:					
Balance at 1.1.2021	**380**	**1,637**	**1,067**	**-137**	**-22**	**71**	**298**	**-**	**3,294**
Sale of shares	-	-	1	-	-	-	-	4	5
Distribution (dividend)	-	-	-78	-	-	-	-	-	-78
Payment on AT1 capital	-	-	-17	-	-	-	-	-	-17
Comprehensive income for the period	-	-	229	26	-6	-27	-	-1	221
Net income	-	-	229	-	-	-	-	-1	228
OCI for the period, after taxes	-	-	-	26	-6	-27	-	-	-7
Balance at 31.12.2021	**380**	**1,637**	**1,202**	**-111**	**-28**	**44**	**298**	**3**	**3,425**
Balance at 1.1.2022	**380**	**1,637**	**1,202**	**-111**	**-28**	**44**	**298**	**3**	**3,425**
Distribution (dividend)	-	-	-159	-	-	-	-	-	-159
Payment on AT1 capital	-	-	-17	-	-	-	-	-	-17
Comprehensive income for the period	-	-	188	62	2	-75	-	-1	176
Net income	-	-	188	-	-	-	-	-1	187
OCI for the period, after taxes	-	-	-	62	2	-75	-	-	-11
Balance at 31.12.2022	**380**	**1,637**	**1,214**	**-49**	**-26**	**-31**	**298**	**2**	**3,425**

Statement of Cash Flows

Statement of cash flows[1)]

in € million	2022	2021
Net income/loss	**187**	**228**
Write-downs and depreciation on tangible and intangible assets	18	20
Write-downs, provisions for losses on, and write-ups of, financial assets at amortised cost	45	98
Impairment / Revaluation on Financial Instruments measured at Fair Value OCI	-	-
Result from the disposal of financial securities at amortised cost	4	5
Result from the disposal of securities at fair value through other comprehensive income	-	1
Change in other non-cash positions	-163	158
Other adjustments	-463	-480
Subtotal	**-372**	**30**
Change in assets and liabilities from operating activities after correction of non-cash components		
Increase in assets/decrease in liabilities (-)		
Decrease in assets/increase in liabilities (+)		
Financial instruments at fair value through profit or loss and positive/negative fair values of hedge accounting derivatives	279	77
Financial assets at fair value through other comprehensive income	21	-178
Financial instruments at amortised cost (without payments in/of subordinated capital)	-5,962	491
Other assets from operating activities	-6	-
Other liabilities from operating activities	-86	-91
Interest income received	1,710	1,554
Interest expense paid	-1,202	-1,243
Taxes on income paid/refund	-57	-22
Cash flow from operating activities	**-5,675**	**618**
Proceeds from the sale of securities	930	750
Payments for the acquisition of securities	-598	-
Payments for the acquisition of tangible and intangible assets	-19	-15
Cash flow from investing activities	**313**	**735**
Proceeds from additional equity instruments (AT1)	-	1
Disbursement of dividends	-159	-78
Payments in/of subordinated liabilities	-20	-28
Payments from Leasing Liabilities	-5	-5
Payment on AT1 capital	-17	-17
Change non-controlling interest	-	4
Sale of shares of consolidated subsidiaries	-	1
Cash flow from financing activities	**-201**	**-122**
Cash and cash equivalents at the end of the previous period	6,607	5,376
+/- Cash flow from operating activities	-5,675	618
+/- Cash flow from investing activities	313	735
+/- Cash flow from financing activities	-201	-122
Cash and cash equivalents at the end of the period	**1,044**	**6,607**

[1)] Explanations in Note “Notes to the Items in the Consolidated Statement of Cash Flows”.

Notes

1. General Information

Deutsche Pfandbriefbank AG (pbb), with its registered office in Munich, Germany, is a public limited company and a leading provider of commercial real estate finance and public investment finance. The Company is registered in the commercial register of the Munich local court (Amtsgericht München) under registration number HRB 41054; it is the parent company of Deutsche Pfandbriefbank Group (pbb Group). The address of the principal place of business is Parkring 28, 85748 Garching, Germany.

The financial statements are stated in euros, the presentation currency of pbb Group, and principally rounded to millions of Euro (€ million). Information is presented in accordance with the principle ofmateriality. Minor differences may occur regarding the figures and totals stated due to rounding. Items under € 500,000.00 are presented as zero respectively zero balances are denoted by a dash.

The Management Board of pbb prepared and authorised for these consolidated financial statements for issue on 7 March 2023.

ACCOUNTING POLICIES

2. Principles

pbb has prepared the present Consolidated Financial Statements for the period ending 31 December 2022 in line with EC ordinance No. 1606/2002 of the European Parliament and Council of 19 July 2002 in accordance with International Financial Reporting Standards (IFRS). The IFRS are standards and interpretations adopted by the International Accounting Standards Board (IASB). These are the International Financial Reporting Standards (IFRS), the International Accounting Standards (IAS) and the interpretations of the IFRS Interpretations Committee (formerly IFRIC) respectively the former Standing Interpretations Committee (SIC); they are also based on the regulations of commercial law which are applicable in accordance with Section 315e (1) HGB (German Commercial Code).

The Consolidated Financial Statements are based on IFRS as adopted in European law by the European Commission as part of its endorsement process. With the exception of certain regulations on fair value hedge accounting for a portfolio hedge of interest rate risks in IAS 39 Financial Instruments: Recognition and Measurement, all the IFRS published by the IASB and required to be applied were fully endorsed by the European Union (EU). According to the option pursuant to IFRS 9.7.2.21 ppb Group still applies the requirements of IAS 39 for hedge accounting instead of the requirements in chapter 6 of IFRS 9. Within the framework of fair value hedge accounting for a portfolio hedge of interest rate risks, pbb Group applies a part of the exemptions permitted under European law. Therefore, the present consolidated financial statements comply with IFRS applicable in the EU, but not with IFRS as a whole as promulgated by the IASB.

Initially Adopted IFRS, Interpretations and Amendments in 2022
pbb Group implemented all standards and interpretations which had to be applied mandatorily and which had been endorsed into European law. However, pbb Group has occassionally waived to disclose issues that are not relevant or not material to assure understandibility and information content in the present annual report.

pbb Group has initially applied the Amendments to IFRS 3, IAS 16, IAS 37 and Annual Improvements 2018-2020 in the financial year 2022:

Amendments to IFRS 3, IAS 16, IAS 37 and Annual Improvements 2018-2020
The amendments comprise narrow-scope adjustments to three standards and the IASB's Annual Improvements project. The amendments to IFRS 3 relate to a reference to the Conceptual Framework that does not involve a change in the context of the rules governing the accounting for business combinations. The amendments to IAS 16 relate to the recognition of proceeds received during the production/construction of an item of property, plant and equipment. The amendments to IAS 37 define the costs that have to be considered in the assessment of whether a contract is onerous. The Annual Improvements project comprises clarifications as regards the wording, minor changes, overviews and conflicts between rules in standards. Overall, these amendments are not expected to have material effects for pbb Group.

Standards, interpretations and amendments adopted into European law that are not yet mandatory
pbb Group does not plan to early apply standards and amendments that have been adopted into European law as at the balance sheet date, but whose adoption is not mandatory until later financial years. The following standards and amendments had been adopted into European law as at the balance sheet date, but their application was not yet mandatory:

Name	Publication	Initial application	Expected effects
IFRS 17 Insurance Contracts; including Amendments to IFRS 17 and Amendments to IFRS 17 Initial Application of IFRS 17 and IFRS 9 – Comparative Information	18.5.2017/ 25.6.2020/ 9.12.2021	1.1.2023	IFRS 17 governs the principles applicable to the recognition, measurement, presentation and disclosures of insurance contracts. Since it does not operate as an insurance provider, pbb Group does not anticipate any material effects. When it was adopted into European law, European companies were given the option of exempting certain contract groups from the requirement to form annual cohorts under IFRS 17.22. In line with the expected minor effects of the entire IFRS 17 on pbb Group, this exemption is also expected to not become relevant. The option for insurance undertakings to apply IFRS 9 for the first time with effect from 1 January 2023 is not relevant for pbb Group.
Amendments to IAS 12 Income Taxes: Deferred Tax related to Assets and Liabilities arising from a Single Transaction	7.5.2021	1.1.2023	If assets and liabilities are recognised initially, deferred taxes do not have to be recorded as an exemption in case certain requirements are met. In accordance with the amendments to IAS 12, this exemption no longer applies to transactions that result in deductible and taxable temporary differences in the same amount upon initial recognition even if the other, previously applicable requirements are met. The amendments are not expected to have a material impact on pbb Group.
Amendments to IAS 1 Presentation of Financial Statements and IFRS Practice Statement 2 – Disclosure of Accounting Policies	12.2.2021	1.1.2023	The amendments to IAS 1 specify the extent to which accounting policies have to explained in the notes. In future, only material, rather than significant, accounting policies have to be explained. The application of these standard amendments, the notes may be reduced to a description of material accounting policies, which could lead to enhancing relevance and understandability of the financial statements.
Amendments to IAS 8 Accounting Policies, Changes in	12.2.2021	1.1.2023	The amendments to IAS 8 newly introduce a definition of the term "accounting estimate". Accounting estimates are now defined as monetary amounts in financial statements that are subject to measurement uncertainty. The distinction made between accounting estimates and accounting

Accounting Estimates and Errors: Definition of Accounting Estimates			policies is of importance since IAS 8 provides for different consequences for changes in estimates and in accounting policies. Changes in accounting policies have to be recognised retrospectively, while changes in estimates have to be recognised prospectively. The first-time application is not expected to have any material impact on pbb Group.

IFRS, Interpretations and Amendments issued but not yet endorsed by the EU
The following amendments have not yet been endorsed by the European Union at the balance sheet date:

Name	Publication	Initial application	Expected effects
Amendments to IAS 1 Presentation of Financial Statements: Classification of Liabilities as Current or Non-current and Classification of Liabilties as Current or Non-current – Deferral of Effective Date and Non-current Liabilities with Covenants	23.1.2020/ 15.7.2020/ 31.10.2022	1.1.2024	The amendments to IAS 1 refer to the clarification that, as part of the classification of liabilities as current or non-current, the reporting entity's rights existing as at the reporting date have to be taken into account. The expectation of management as to whether such rights will be actually exercised should not be considered. If an extension right is subject to one or more conditions (e.g. covenants) which are, however, tested/reviewed only at a later date (after the reporting date), the decisive criterion is whether the conditions were met at the reporting date. Moreover, the IASB clarifies that terms and conditions of a loan agreement that – at the option of the creditor – may result in settlement of the liability in the entity's own equity instruments have to be taken into account in the classification, unless there is an equity instrument within the meaning of IAS 32 that has to be accounted for separately. pbb Group does not expect any material changes for the classification and presentation of liabilities in the statement of financial position, as they are already classified in line with their maturities.
Amendments to IFRS 16 Leases: Lease Liability in a Sale and Leaseback	22.9.2022	1.1.2024	The amendments to IFRS 16 specify how a seller-lessee should apply the subsequent measurement requirements of IFRS 16 to the lease liability in a sale and leaseback transaction. As pbb Group currently does not engage in any sale and leaseback transactions, no effects are expected from the amendments.

Statement of compliance for the German Corporate Governance Code
Company's Management Board and the Supervisory Board published a statement of compliance for the German Corporate Governance Code according to section 161 AktG in this annual report as well as on pbb's website (http://www.pfandbriefbank.com/en/investors/mandatory-publications.html).

Combined Management Report
The combined management report meets the requirements of section 315 (1) and (2) HGB and the from Deutschen Rechnungslegungs Standards Committee (DRSC) published DRS 20.It comprises fundamental information about the Group, a report on the economic position, a risk and opportunity report, a report on expected developments, commentary on pbb's unconsolidated Annual Financial Statements under HGB and supplemental information. The risk and opportunity report contains information which, under IFRS 7, is required to be disclosed.

3. Consistency

pbb Group applies its accounting policies on a consistent basis in accordance with the Conceptual Framework for Financial Reporting, as well as IAS 1 and IAS 8. Except for the matter outlined below, the same accounting policies were applied as in the consolidated financial statements as at 31 December 2021:

The segment reporting was further developed for the 2022 financial year. Within the scope of the annual review of capital allocation to the business segments, it was affirmed that pbb continues to consider the use of economic capital as a bottleneck factor. Thus, the distribution of economic risks by business segments continues to serve as a basis for allocation. When deriving the equity capital allocation key on the basis of an expected loss shortfall approach, risks from credit spreads are no longer taken into account. Assumption of credit spread risks – which are especially present in the Value Portfolio (VP) – is not part of pbb's business model and leads to a higher burden on the VP if considered. In contrast, other business segments are favoured, especially Real Estate Finance (REF). The previous year's figures were adjusted in accordance with IFRS 8.29. As at 31 December 2021, VP equity decreased from €0.5 billion to €0.4 billion, and REF equity increased from €2.0 billion to €2.1 billion. The Income Statement showed no segment shift in the same period of 2021.

4. Consolidation

	Fully consolidated subsidiaries		Associated entities and other investments		
Number of subsidiaries/ entities[1]	Total	Thereof: special purpose entities	Associated entities	Other investments	**Total**
1.1.2021	**4**	**-**	**1**	**1**	**6**
Additions	-	-	-	-	**-**
Disposals	-	-	-	-	**-**
31.12.2021	**4**	**-**	**1**	**1**	**6**
1.1.2022	**4**	**-**	**1**	**1**	**6**
Additions	-	-	-	-	**-**
Disposals	-1	-	-	-	**-1**
31.12.2022	**3**	**-**	**1**	**1**	**5**

[1] pbb, subsidiaries, associated companies and other investments.

A subsidiary is an entity that is controlled by another entity. Control is deemed to exist if pbb has decision-making powers to manage relevant activities, has a right to significant returns from the subsidiary, and can use its decision-making powers to influence the amount of significant variable returns.

Structured entities are entities in which voting rights or similar rights are not the dominant factors in determining control, such as if the voting rights relate merely to administrative duties and the relevant activities are governed by contractual agreements.

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.

Uniform Consolidated Accounting
The unconsolidated financial statements of the consolidated companies are incorporated in the consolidated financial statements of pbb using uniform accounting and measurement principles. Assets, liabilities, income, expenses and cash flows of the parent company and all of its subsidiaries are shown as if it is one single entity. Business relations within the group of consolidated companies are offset against each other for consolidation purposes.

Business relationships within the scope of consolidation are offset and interim results from intragroup transactions are eliminated.

5. Disclosures of Interests in Subsidiaries

These Consolidated Financial Statements include a list of shareholdings in the Note “Holdings of pbb” containing subsidiaries and other shareholdings. The financial year for all fully-consolidated companies is the calendar year. pbb Group does not have any subsidiaries which are not consolidated as of 31 December 2022 and 31 December 2021.

Significant Restrictions with respect to the Usability of Assets within the Group
Statutory, contractual or regulatory restrictions and protective rights of non-controlling interests may limit the Group in its ability to obtain access to the assets and to easily transfer them to respectively from another company or other companies and settle the Group’s liabilities. As of the balance sheet date the Group had no significant interests over which it could not exert control.

A stake of approximately 28.57% in the subsidiary CAPVERIANT GmbH are held by another company, which, however, does not result in relevant restrictions with respect to obtaining and the realisation of assets and the settlement of liabilities. The consent of the co-shareholder or a majority of at least 77.5% of the voting rights in CAPVERIANT GmbH is required only with regard to particularly important measures, such as capital increases, reorganisations, and profit and loss transfer and control agreements at the level of CAPVERIANT GmbH. This means that pbb is dependent on the co-shareholder's cooperation in this respect.

6. Disclosures of Interests in Associates

There have not been significant participations in associated companies or joint arrangements retrospectively joint ventures as of 31 December 2022 and 31 December 2021. The particaptions in a associated company which are immaterial from a pbb Group perspective are not included at equity in the group financial statements, but are accounted for at fair value through profit or loss (FVPL) according to IFRS 9.

7. Financial Instruments

According to IAS 32, a financial instrument is a contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity.

Recognition and Derecognition
pbb Group recognises a financial asset or a financial liability in its statement of financial position if a Group company becomes party to the contractual provisions of the financial instrument.

The purchases or sales of financial instruments are recognised on the trading date. Premiums and discounts are recognised in accordance with the accrual concept in the position net interest income. In accordance with the primary derecognition concept of IFRS 9, a financial asset has to be derecognised if all risks and rewards have substantially been transferred. If the main risks and rewards of ownership of the transferred financial asset are neither transferred nor retained, and if control over the transferred asset is retained, the Company has to recognise the asset to the extent of its continuing involvement. There are no transactions within pbb Group which result in partial derecognition due to a continuing involvement. Compensation for voluntary early repayment of receivables by customers is reported as net income from realisations for reasons of transparency.

In case of repos and synthetic securitisations the assets transferred do not qualify for derecognition because derecognition criteria of IFRS 9 are not met.

Collateral with the same counterparty and same conditions (e.g. ISDA master agreement) must be netted. Accordingly, only the net amount is disclosed.

Classification and Measurement of Financial Instruments
A financial asset or a financial liability shall be measured at its fair value at initial recognition plus or minus, in the case of a financial asset or financial liability not at fair value through profit or loss, transaction costs that are directly attributable to the acquisition or issue of the financial asset or financial liability.

The amortised costs are the amount at which the financial asset or financial liability is measured at initial recognition minus the principal payments, plus or minus the cumulative amortisation using the modified effective interest method of any difference between that initial amount and the maturity amount and, for financial assets, adjusted for any loss allowance.

Financial instruments at fair value are measured on the basis of stock market prices or other market prices, if existent (Level 1). If a price is not available from an active market, observable market prices from comparable financial instruments are used (Level 2). If prices from comparable financial instruments are not available, valuation models are used that are based on observable market parameters. If these parameters are not observable at the markets, the measurement of the financial assets is based on models with non-market-observable parameters (Level 3). The measurement models used are market standard models. A description of these models and the products is given in the Note “Fair Values of Financial Instruments”.

The best evidence of the fair value of a financial instrument at initial recognition is normally the transaction price, i.e. the fair value of the consideration given or received. If pbb Group determines that the fair value at initial recognition differs from the transaction price the financial instrument will be measured at fair value at initial recognition if that fair value is evidenced by a quoted price in an active market for an identical asset or liability (Level 1) or based on a valuation technique that uses only data from observable markets (Level 2). pbb Group records the difference as a gain or loss in these cases. In all other cases the difference between the fair value and the transaction price (so called day one profit) is deferred. In the financial years 2022 and 2021 there were no day one profits.

For the purposes of subsequent measurement, financial assets must be divided into the following three categories:

- at fair value through profit or loss (FVPL)
- at fair value through other comprehensive income (FVOCI)
- at amortised cost (AC)

The categorisation of financial assets depends on the entity's business model for managing financial assets (business model criterion) and the contractual cash flow characteristics of the financial asset (contractual cash flow criterion) at initial recognition.

A financial asset shall be measured at amortised cost (AC) if both of the following conditions are met:

- the financial asset is held within a business model whose objective is to hold financial assets in order to collect contractual cash flows; and.
- the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal outstanding.

A financial asset shall be measured at fair value through other comprehensive income (FVOCI) if both of the following conditions are met:

- the financial asset is held within a business model whose objective is achieved by both collecting cash flows and selling financial assets; and
- the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal outstanding.

A financial asset shall be measured at fair value through profit or loss (FVPL) unless it is measured at amortised cost or at fair value through other comprehensive income. However, an entity can make an irrevocable election at initial recognition for particular investments in equity instruments that would otherwise be measured at fair value through profit or loss to present subsequent changes in fair value in other comprehensive income. pbb Group holds equity instruments of an insignificant amount. These are measured at fair value through profit or loss.

In the first step the financial assets are categorised based on business model criterion. An entity's business model is determined at a level that reflects how groups of financial assets are managed together to achieve a particular business objective. Accordingly, this condition is not an instrument-by-instrument approach to classification and should be determined on a higher level of aggregation. For this purpose, the entity must consider all relevant evidence that is available at the date of assessment. Such relevant evidence includes, but is not limited to:

- how the performance of the business model and the financial assets held within that business model are evaluated and reported to the entity's key management personnel;
- the risks that affect the performance of the business model (and the financial assets held within that business model) and, in particular, the way in which those risks are managed;
- how managers of the business are compensated (for example, whether the compensation is based on the fair value of the assets managed or the contractual cash flows collected);
- the expected frequency, value and timing of sales in prior periods, the reasons for those sales and expectations about future sales activities.

Principally, pbb Group aggregates its financial assets for the determination of the business model criterion on the level of segments. However, deals to be syndicated form special portfolios in the segments Real Estate Finance (REF) and Public Investment (PIF). In addition, the Value Portfolio (VP) is divided in a portfolio with the intention to hold and in a portfolio with the intention to hold and sell. Furthermore, Consolidation & Adjustments contain the liquidity portfolio for which an intention to hold and sell exists in addition to portfolios with the intention to hold.

In line with IFRS 9B4.1.3A the business model may be hold to collect contractual cash flows even if the entity sells financial assets in specific situations. Such exceptions can be driven by an increased credit risk of the financial asset which amongst others pbb Group measures by the loan to value of the financing or a change to non-investment grade. Further exceptions are sales of financial assets with a short remaining maturity if the realized proceeds approximate the remaining cash flows. In addition, sales may be consistent with the business model hold to collect contractual cash flows if those sales are more than infrequent (even if significant in value) or insignificant in value either individually or aggregated (even if frequent). Amongst others, pbb Group sets the volume of sold assets in relation to the total volume of the portfolio to which the assets belong for the determination of significance.

pbb Group has to reclassify financial assets if it changes the business model for managing those financial assets. Such changes according to IFRS 9B4.41 which are expected to be very infrequent are determined by the senior management as a result of externally or internally significant changes and externally demonstrable changes. Examples may be in the context of business combinations or shut downs of operations. There have not been reclassifications of financial assets in the years 2022 and 2021.

In the second step of the categorisation an entity has to classify a financial asset on the basis of the contractual cash flow characteristics (contractual cash flow criterion). For this, an entity shall assess whether contractual cash flows are solely payments of principal and interest on the principal amount outstanding. The principal is the fair value of the financial asset at initial recognition. Interest consists of consideration for the time value of money, for the credit risk associated with the principal amount outstanding during a particular period of time and for other basic lending risks (for example, liquidity risk) and costs, as well as a profit margin.

When assessing the contractual cash flows pbb Group also considers derivatives embedded in a host contract. For example, if leverage increases the volatility of the contractual cash flows the contractual cash flow criterion will not be fulfilled. Furthermore, for financings of structured entities without the right ofrecourse on specific assets of the borrower or payments from these assets has to be assessed whether primarily a loan risk or an investment risk exists. If there is primarily an investment risk but not primarily a loan risk the contractual cash flow criterion will not be fulfilled. pbb Group assesses this distinction on the basis of the loan to value at the date of the initial recognition of the financial asset.

An entity may, at initial recognition, irrevocably designate a financial asset as measured at fair value through profit or loss if doing so eliminates or significantly reduces a measurement or recognition inconsistency that would otherwise arise from measuring assets or liabilities or recognising the resulting gains and losses on different bases (so called fair value option). pbb Group does not use the fair value option for financial assets.

Non derivative financial liabilities have to be measured at amortised cost, unless they are hold for trading purposes or are designated at fair value through profit or loss. As of 31 December 2022 and 31 December 2021 pbb Group has not issued compound financial instruments with multiple embedded derivatives.

The amount of change in the fair value of financial liabilities designated at fair value through profit or loss (fair value option) that is attributable to changes in credit risk of that liability shall be presented in other comprehensive income and the remaining amount of change in profit or loss. pbb Group does not have non-derivative financial liabilities measured at fair value through profit or loss and does not use the fair value option for financial liabilities. Derivatives have to be measured at fair value through profit or loss unless they are used as hedging instruments in the scope of cash flow hedge accounting.

According to IFRS 9 the non-derivative financial instruments of pbb Group are aggregated, classified and measured as follows:

- Segment Real Estate Finance (REF): Non-derivative financial instruments are principally measured at amortised cost (business model: financial asset is held within a business model whose objective is to hold financial assets in order to collect contractual cash flows). The exceptions areFinancial assets or parts of financial assets, for which there is an intention to syndicate (business model: financial asset is neither held within a business model whose objective is to hold financial assets in order to collect contractual cash flows nor within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets). These have to be accounted for at fair value through profit or loss.
- Segment Public Investment Finance (PIF): Non-derivative financial instruments are principally measured at amortised cost (business model: financial asset is held within a business model whose objective is to hold financial assets in order to collect contractual cash flows).

- Segment Value Portfolio (VP): Non-derivative financial instruments are principally measured at amortised cost (business model: financial asset is held within a business model whose objective is to hold financial assets in order to collect contractual cash flows). Exceptions are:
  - Financial assets or parts of financial assets held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets. These are measured at fair value through other comprehensive income.
  - Financial assets which do not fulfill the contractual cash flow criterion and therefore have to be measured at fair value through profit or loss.
- Portfolios in Consolidation and Adjustments (C&A): Non-derivative financial instruments are principally measured at amortised cost (business model: financial asset is held within a business model whose objective is to hold financial assets in order to collect contractual cash flows). Exceptions are:
  - Financial assets held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets. These financial assets of the liquidity portfolio are measured at fair value through other comprehensive income.

The European Market Infrastructure Regulation (EMIR) imposes a clearing obligation for standardised Over-The-Counter (OTC) derivatives. pbb uses Eurex Clearing as central clearing agent for derivatives. For Eurex cleared transactions, pbb applies on-balance sheet netting. On-balance sheet netting is applied for each currency, and comprises the carrying amounts of the derivatives as well as the margins calculated (and collected or credited) by Eurex Clearing. The net book values are disclosed under “positive fair values of hedge accounting derivatives” or “negative fair values of hedge accounting derivatives”.

In alignment with the customer the contractual cash flows of a financial instrument in the existing business may be renegotiated or otherwise modified. Such changes made to existing terms of a contractual relationship during the contract term are called modifications. Modifications may be market-driven commercial renegotiations or can be performed to avoid larger credit defaults. It is necessary to check whether the modification is significant or insignificant.

Significant modifications are substantial to the extent that they, in essence, constitute a new financial instrument. The modification can be significant due to qualitative (for example change of counterparty or of currency) or due to quantitative reasons. In case of significant modifications the old financial instrument has to be derecognized and a modified new financial asset has to be recognized as a new asset.

In case of insignificant modifications the agreed amendments to the contractual cash flows have to be discounted and the difference between the present value of the modified contractual payments determined in this way and the carrying amount (present value of the contractual payments before modification) are recognized through profit or loss. In the years 2022 and 2021 the effects in the profit and loss statement from insignificant modifications of financial assets were not material.

On 27 October 2022, the ECB’s Governing Council decided to adjust interest rates for the third series of targeted longer-term refinancing operations (TLTRO III) with effect from 23 November 2022. From pbb Group's perspective, this interest rate adjustment does not represent a substantial modification, as the difference between the present value of the modified contractual payments and the carrying amount is not material in relation to the total funding volume.

The expense resulting from the modification that nevertheless had to be recognised in income amounted to €21 million and was reported in net other operating income/expenses due to the non-recurring nature of the contractual adjustment. The modified carrying amount of funding reduced by this effect will be amortised to net interest income in subsequent periods until final maturity in June 2023 and June 2024, respectively, so that the financial liability will again bear interest at close to the original effective interest rate. In the event of an early disposal of the financial liability, the not yet amortised modification effect to be derecognised with the financial instrument will improve net income from realisations.

Loans at risk of default are restructured by pbb Group if the borrower's financial position has deteriorated but a positive going-concern forecast for the loan exposure can still be expected. This is carried out by changing the underlying terms and conditions or side agreements by means of a unilateral or mutual declaration of intent. Restructuring agreements should maximise opportunities to realise its outstanding loans or at least minimise the risk of default of the loan exposure. These generally include inter alia standstill agreements, maturity extensions, changed interest payment/repayment terms, interest/repayment reductions or the suspension of contractual agreements (e.g. financial covenants) so that the borrower is again able to meet their payment obligations. The credit risk associated with restructured loans is managed by the Group's Credit Risk Management units.

Impairment

The regulations regarding impairments in accordance with IFRS 9 are relevant for assets measured either at "amortised cost" or at "fair value through other comprehensive income" as well as for off-balance sheet obligations, such as loan commitments and financial guarantees. The rules do not have to be applied for equity instruments. An impairment is implied for financial assets measured at fair value through profit or loss at subsequent measurement. IFRS 9 contains a model according to which provisions for credit losses may be created upon initial recognition of the financial asset (or on the date when the Group becomes a contracting party of the loan commitment or financial guarantee) on the basis of credit losses expected at that time. According to IFRS 9.5.5.17 this is an unbiased and probability-weighted amount that is determined by evaluation of a range of possible outcomes and scenarios. It will be clarified that this is a probability weighted average and not the most probable amount.

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

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

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

Group determines the expected credit losses on an individual basis.

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

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

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

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

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

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

For purchased or originated credit-impaired financial assets (POCI) only the cumulative changes in lifetime expected credit losses since initial recognition have to be recognised as a loss allowance at balance sheet date. For such financial assets expected credit losses shall be discounted using the credit-adjusted effective interest rate determined at initial recognition. The credit-adjusted effective interest rate has to be applied to the amortised cost from initial recognition. The recognition of interest income will have to be determined this way for the entire maturity also if the borrower recovers. The interest income is attributed to the POCI-asset, received repayments have to be recognised as repayments. pbb Group did not purchase or originate credit-impaired financial assets as of 31 December 2022 and as of 31 December 2021.

pbb Group principally uses a model-based approach for determining the amount of expected credit losses. Regulatory risk parameters (probability of default/PD, loss given default/LGD) and contract information, for example the contractually agreed cash flows, are used as a basis for determining the amount of credit losses of the stage 1 and stage 2 financial instruments. The exposure size results from the comparison of the contractually agreed cash flows and the expected cash flows. The risk parameters listed above are linked to the exposure size to determine the expected losses. In addition expectations about prepayments (so called prepayment rates), expected prolongations of loans (so called prolongation rates) and expected drawings of undrawn parts of a commitment (so called credit conversion factor/CCF) are considered in the expected cash flows. The risk parameter PD is determined for each borrower with the aid of customer specific rating methods. Several customer specific risk factor for example the debt ratio, return indicators and similar quantitative indicators are input factors of the rating methods. The risk parameter LGD is determined with the aid of specific LGD models in which especially expected recovery ratios from the disposal of collaterals or other parts of the asset, the transaction specific ratio of current collaterals and the book value of the loan as well as the expected time till receipt of payments are material input factors. These PD rating methods and LGD models are also methods used as an approach for risk assessment and risk controlling.

The regulatory risk parameters are transformed adequately so that the requirements of IFRS 9 are fulfilled. These include the deduction of conservative adjustments which are used for regulatory purposes, the consideration of macro-economic factors for the purpose of the so called point in time transformation and the transition from the regulatory discount rate to the effective interest rate required by IFRS 9. Particularly the transformations ensure that the risk parameters are unbiased. Historic data about rating migration together with forecasts of macro-economic developments (for example the unemployment rate, the economic growth per country, 5-year swap rate per currency and – for real estate financings – the development of collateral market values differentiated by object types and regions) are used for the determination of multi-year probabilities of default. For this information according to the type of customer are used. pbb Group forecasts relevant indicators on the basis of internal analyses and externally available data. The interest income is calculated by applying the effective interest rate on the financial asset, therefore on the gross book value (book value before risk provision).

In determining point-in-time default probabilities, macroeconomic projections issued, for example, by the ECB, other central banks and economic research institutions in relation to the unemployment rate and the gross domestic product are used. Only the forecast for the year 2023 is used for transactions included in Stage 1 allowances. The forecasts until the year 2026 are used for transactions of Stage 2 allowances. As from 2027, 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 prevailing risk situation of financing office real estate. The management overlay is described in detail in the Note “Financial assets at amortised cost after credit loss allowances (including claims from finance lease agreements)”.

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

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

Hedge Accounting
As long as regulations on accounting for macro hedges have not yet been adopted, the IASB provides the possibility by an option to apply the former rules pursuant to IAS 39. For hedge accounting pbb Group exercised the accounting option and retains the current regulation of IAS 39. The accounting of hedge relationships is shown in the section “Notes to Derivative Transactions and Hedged Items”.

Disclosure/Notes
IFRS 7 (Financial Instruments: Disclosures and IFRS 13 (Fair Value Measurement) required disclosures according to classes of financial instruments. pbb Group mainly defined the measurement categories according to IFRS 9– sub divided in the products loans and advances and debt securities as well as liabilities to other banks, liabilities to customers, bearer bonds and subordinated liabilities – irrevocable loan commitments, financial guarantees, hedging derivatives and cash reserve as well as claims from finance lease agreements.

Specific disclosures required by IFRS 7 are shown in the risk and opportunity report for example about credit risk, market risk and liquidity risk.

8. Leases

According to IFRS 16, a lease is a contract that conveys the right to use an asset for a period of time in exchange for consideration.

pbb Group as a Lessor
Upon initial recognition of a lease, lessees recognise a lease liability as well as a right-of-use asset. The lease liability is discounted using the present value of future lease payments; simultaneously, lessees recognise a right-of-use asset in the amount of the discounted lease liability. Discounting is based on the interest rate underlying the lease or, if this rate is not readily available, on the incremental borrowing rate of pbb Group for the respective lease. Usually, right-of-use assets are depreciated on a straight-line basis over the projected term of the lease. All payment obligations of the lessee resulting from leases are subsequently measured at amortised cost using the effective interest method. The lease liability is remeasured when the future lease payments are modified due to a change in the index rate, or when pbb Group changes its assessment as regards the exercise of extension or termination options. In case of such a remeasurement of the lease liability, the carrying amount of the right-of-use asset is also adjusted accordingly.

pbb Group discloses right-of-use assets in ‘tangible assets’, while lease liabilities are disclosed under ‘other liabilities’. Depreciation of right-of-use assets is recognised in the note on ‘net gains and losses from write-downs and write-ups of non-financial assets’. Interest expenses resulting from lease liabilities are disclosed in ‘net interest income’.

pbb Group as a Lessee

As a lessor, pbb Group has entered into finance leases only. Regarding finance leases, substantially all risks and rewards incidental to ownership of the leased asset are transferred to the lessee. The lessor recognises receivables in the amount of the net investment value. Lease payments received are divided into an interest portion, which is recognised through profit or loss, and a principal portion.

pbb Group discloses loans and advances from finance leases under financial assets at amortised cost. Interest income from finance leases is disclosed in 'net interest income'.

9. Cash Reserve

Cash reserve contains balances with central banks which are measured at cost.

10. Financial Assets at Fair Value through Profit or Loss

The financial assets at fair value through profit or loss consist of positive fair values of stand-alone derivatives and the following non-derivative financial assets:

- Loans and advances, debt securities, shares in investment funds and in entities which are not measured at-equity due to their immateriality which do not fulfil the contractual cash flow criterion.
- Parts of financial assets, for which there is an intention to syndicate.

Financial assets of this balance sheet position are measured at fair value. Changes of the fair value within a period affect profit or loss in the line item net income from fair value measurement of the income statement. The payments and amortisation of interests from this position are shown in net interest income.

11. Financial Assets at Fair Value through Other Comprehensive Income

The position financial assets at fair value through other comprehensive income consists of loans and advances as well as securities of the measurement category at fair value through other comprehensive income. These are non-derivative financial assets which fulfil the contractual cash flow criterion of IFRS 9 and which are held within a business model whose objective is achieved by both collecting cash flows and selling financial assets. Parts of the debt securities and loans and advances of the Value Portfolio and Consolidation & Adjustment fulfil these criteria.

Financial assets of this balance sheet position are measured at fair value. Changes of the fair value within a period are shown in accumulated other comprehensive income of equity without affecting profit or loss. The payments and amortisation of interests from these positions are shown in net interest income. Impairments of all three stages according to IFRS 9 are shown in net income from risk provisioning of the income statement and in accumulated other comprehensive income in the statement of financial position. Gains or losses from derecognition of financial assets measured at fair value through other comprehensive income are shown in net income from realisations.

12. Financial Assets at Amortised Cost after Credit Loss Allowances

The position financial assets at amortised cost after credit loss allowances contains loans and advances as well as securities of the measurement category at amortised cost. These are non-derivative financial assets which fulfil the contractual cash flow criterion of IFRS 9 and which are held within a business model whose objective is to hold financial assets in order to collect contractual cash flows. Debt securities and loans and advances of the segments Real Estate Finance and Public Investment Finance fulfil these criteria unless they are intended for syndicated financing. Moreover, parts of the Value Portfolio and of Consolidation & Adjustments have to be recognised at amortised cost when the cash flow criterion is fulfilled and they are held as part of a business model whose objective is to collect contractual cash flows.

Financial assets of this balance sheet position are measured at amortised cost. Interest income and expenses from this position is shown in net interest income. Impairments of all three stages according to IFRS 9 are shown in net income from risk provisioning of income statement. The assets are shown before and after impairments in the income of financial position. Gains or losses from derecognition of financial assets measured at fair value through other comprehensive income are shown in net income from realisations.

13. Positive Fair Values of Hedge Accounting Derivatives

The position positive fair values of hedge accounting derivatives contains the fair value of derivatives which are subject to hedge accounting and which are positive. As pbb Group does not designate derivatives in cash flow hedge accounting anymore the position only includes derivatives of the micro fair value hedge accounting and of the portfolio hedge of interest rate risks to a lesser extent, currency risks. These derivatives are measured at fair value. Changes of the fair value within a period affect profit or loss and are disclosed in the position net income from hedge accounting in the income statement. The interest payments and amortisations of these positions are shown in net interest income.

14. Valuation Adjustment from Portfolio Hedge Accounting (Assets)

The position valuation adjustment form portfolio hedge accounting (assets) contains the fair values subject to the hedged risks in the hedged cash flows of the portfolios of hedged items on the asset side. In the context of portfolio hedge accounting interest rate risks from loans and advances as well as from liabilities are hedged on a portfolio basis.

15. Tangible Assets

Tangible assets are generally measured at cost of purchase or cost of production.

The carrying amounts are depreciated on a straight-line basis in accordance with the expected useful lives of the assets. In addition, tangible assets are tested at least annually for impairment. If the value of tangible assets has impaired, an impairment loss is recognised in profit or loss. If the reasons for the impairment no longer exist, an amount not exceeding amortised cost or cost of production is reversed through profit or loss. For fixtures in rental buildings calculations are based on the term of the contract, taking into account any extensions options if this term is shorter than the normal useful economic life.

The normal useful economic life amounts to:

- Fixture in rental buildings: 5-15 years
- IT equipment (broad sense): 3-5 years
- Other operating equipment: 3-25 years

Subsequent cost of purchase or costs of conversion are capitalised if an additional economic benefit is generated for the Company. Maintenance expenses of tangible assets are recognised in profit or loss of the financial year in which they arose.

Right-of-use assets from leasing are disclosed in “tangible assets”. The accounting of the right-of-assets is described in the note “leases”.

16. Intangible Assets

Purchased and internally generated software are the main items recognised as intangible assets. Goodwill, brand names and customer relations are not capitalised.

Software is an intangible asset with a finite useful life. Purchased software is measured at the amortised purchase cost. Internally generated software will be capitalises if it is probable that future economic benefits is generated for the Group and the expenses can be measured reliably. Expenses eligible for the capitalisation of internally generated software include external, directly attributable costs of materials and services as well as personnel expenses for employees directly associated with the creation of software used by the Company. Software is amortised on a straight-line basis over expected useful lives of three to eight years. In addition, intangible assets with a finite useful life are tested for impairment annually or whenever there is an indication that the intangible asset may be impaired or its useful life has reduced.

17. Other Assets

Other assets mainly comprise the collaterals pledged for the banking levy. The collaterals are accounted for at amortised cost.

18. Financial Liabilities at Fair Value through Profit or Loss

The financial liabilities at fair value through profit or loss contain the negative fair values of stand-alone derivatives. Financial liabilities of this balance sheet position are measured at fair value. Changes of the fair value within a period affect profit or loss in the line item net income from fair value measurement of the income statement. The payments and amortisation of interests from this position are shown in net interest income.

19. Financial Liabilities at Amortised Cost

The position financial liabilities at amortised cost consists of all non-derivative financial liabilities. Financial liabilities of this balance sheet position are measured at amortised cost. Interest income and expenses from this position is shown in net interest income. Gains or losses from derecognition of financial liabilities measured at amortised cost are shown in net income from realisations. Such derecognitions may result from prepayments of borrowers.

Amongst others the position financial liabilities at amortised cost contains subordinated liabilities. In the event of insolvency or liquidation subordinated liabilities may only be repaid after all non-subordinated creditors have been satisfied. For some instruments of subordinated liabilities the holders participate in any net loss or unappropriate retained earnings. In addition, the interest entitlement can be ceased or reduced under specific conditions. For other instruments the interest payment ceases only in case of a net loss respectively unappropriate retained earnings which can be recovered depending on the structuring.

Pursuant to IAS 32 the subordinated capital instruments issued by companies of pbb Group were classified as financial liabilities or equity instruments in accordance with the substance of the contractual arrangement and the definitions of a financial liability and an equity instrument.

20. Negative Fair Values of Hedge Accounting Derivatives

The position negative fair values of hedge accounting derivatives contains the fair value of derivatives which are subject to hedge accounting and which are negative. As pbb Group does not designate derivatives in cash flow hedge accounting anymore the position only includes derivatives of the micro fair value hedge accounting and of the portfolio hedge of interest rate risks and, to a lesser extent, currency risks. These derivatives are measured at fair value. Changes of the fair value within a period affect profit or loss and are disclosed in the position net income from hedge accounting in the income statement. The interest payments and amortisations of these positions are shown in net interest income.

21. Valuation Adjustment from Portfolio Hedge Accounting (Liabilities)

The position valuation adjustment form portfolio hedge accounting (liabilities) contains the fair values subject to the hedged risks in the hedged cash flows of the portfolios of hedged items of the liability side. In the context of portfolio hedge accounting interest rate risks from loans and advances as well as from liabilities are hedged on a portfolio basis.

22. Provisions

A provision is a liability of uncertain timing or amount. A provision shall be recognised when an entity has a present obligation as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation. According to IAS 37.15 in rare cases it is not clear whether there is a present obligation. In these cases a past event is deemed to give rise to a present obligation if, taking into account of all available evidence, it is more likely than not that a present obligation exists at the end of the reporting period. In rare cases, for example in a law suit, it may be disputed whether certain events have occurred or whether those events result in a present obligation. In such a case, pbb determines whether a present obligation exists at the end of the reporting period by taking into account all available evidence, including, for example, the opinion of experts.

Under IAS 37.36 et seq., the best estimate is used for measuring provisions for contingent liabilities and contingent losses attributable to pending transactions. Long-term provisions are generally discounted with an interest rate that reflects the current assessments of the time value of money and the risks specific to the liability and if the interest rate is positive.

Provisions for commitments and guarantees given are booked on the basis of impairment rules of IFRS 9 and disclosed under provisions.

Provisions for defined benefit plans are calculated on the basis of actuarial reports in accordance with IAS 19. They are measured using the projected unit credit method. The amount of the provision equals the so-called net defined benefit liability which is the difference between the present value of the defined benefit obligation and the fair value of plan assets. pbb has concluded plan assets in the form of a qualifying insurance policy to hedge parts of the risk from the defined benefit obligations. The reinsurance is pledged to the plan beneficiaries.

The determination of the net defined benefit liability is based on demographic and financial actuarial assumptions. A demographic assumption for example is the mortality for which pbb uses guidance tables. For financial actuarial assumptions the discount rate has the greatest effect on the amount of defined benefit liability. The interest rate used for the measurement is determined by reference to market yields at the end of the reporting period on high-quality, fixed-interest corporate bonds.

Net interest on the defined benefit liability is determined by multiplying the defined benefit liability with the discount rate. The determination is done at the beginning of the financial year taking into account any changes in the net defined benefit liability as a result of contribution and benefit payments during the period. Net interest on defined benefit liability are shown together with all other effects on income statement from the defined benefit obligations and the plan assets in the position pension expenses and related employee benefit costs in general and administrative expenses.

Remeasurements of the net defined benefit liability result from actuarial gains and losses and the return on plan assets excluding amounts included in net interest on the net defined benefit liability. Remeasurements of the net defined benefit liability are shown in equity in the position profit/losses from pension obligations. Changes of remeasurements of the net defined benefit liability within a period are shown as a component of the statement of comprehensive income. Actuarial gains and losses result from increases or decreases in the present value of the defined benefit obligation due to changes of actuarial assumptions and experience adjustments. Changes of the discount rate usually have the biggest effect on the actuarial gains and losses.

Along with other German financial institutions, pbb Group is a member of the pension fund BVV Versorgungskasse des Bankgewerbes e. V. (“BVV”). Both pbb Group as an employer and the eligible employees make regular contributions to the BVV pension schemes. BVV insurance tariffs are calculated and designed to provide fixed pension payments, plus profit participations. Every BVV member entity has a subsidiary responsibility for the pension claims of its eligible employees. pbb Group classifies the BVV pension scheme as a defined benefit plan, but discloses it as a defined contribution plan for accounting purposes because the information available is not sufficient to recognise it as a defined benefit plan. pbb Group considers the risk of becoming liable to pension obligations due to its subsidiary responsibility as very remote, and does not recognise any provisions in this respect.

23. Other Liabilities

Accruals are one position in other liabilities. This also includes short-term liabilities to employees, for instance flexitime credits and vacation entitlements. The accrued liabilities are recognised at the amount likely to be utilised. If the obligations listed at this note cannot be quantified precisely on the balance sheet date and if the criteria specified in IAS 37 for recognising provisions are satisfied, these items have to be disclosed as provisions. Leasing liabilities are a further position in Other Liabilities whose accounting is described in the note “leases”.

24. Equity

The equity includes the equity attributable to the shareholders, the additional equity instruments (AT1 capital) and non controlling interests. The equity attributable to the shareholders consists of the subscribed capital, additional paid-in capital, retained earnings, consolidated profit and accumulated other comprehensive income. The accumulated other comprehensive income contains the reserves for remeasurements of defined benefit commitments (gains/losses from pension obligations), for cash flow hedge accounting and for financial assets at fair value through other comprehensive income (FVOCI).

The AT1 capital is classified as equity since there is neither an obligation to repay the capital nor is there an obligation for ongoing debt service. The transaction costs directly attributable to the issue of the AT 1 capital and paid coupons are deducted directly from equity.

The participation of Caisse des Dépôts et Consignation (CDC) in CAPVERIANT GmbH results in non-controlling interests.

25. Share-based Payment

Since the financial year 2016 in line with the German Regulation of Remuneration in Financial Institutions (Institutsvergütungsverordnung – InstVergV), the payout structure of pbb Group's performance-related remuneration for members of the Management Boad and certain employees whose services hase a significant influence on the overall risk profile of pbb Group is divided into a disbursement portion and a so-called deferral portion. 50% of the payout portion is paid out in cash in the following financial year. The remaining 50% of the payout portion is economically influenced by the performance of pbb's share price and is paid out after a holding period. The deferral period for the deferral portion is three years, four years or five years. If the deferred remuneration components become an entitlement, half of the respective deferral portion is paid out in cash. The other half is in turn economically influenced by the performance of pbb's share price and is also paid out after the expiry of a holding period.

The aforementioned deferral portion of the variable remuneration which are influenced in financial terms by the development of the pbb share price, represents share-based remuneration. This share-based payment does not represent an option programme for physical shares, but rather for virtual shares where the amount set accordingly is converted into an equivalent number of virtual shares. This equivalent number corresponds to the number of virtual shares granted in the reporting period. The calculation of the number of virtual shares is based on the average Xetra closing price of the pbb share in February of the year subsequent to the financial year for which the variable remuneration is granted (subscription price). The resulting number of virtual shares is automatically converted into a cash amount after a holding period of one year, and paid out. In the year of payment, these virtual shares are presented as "exercised in the reporting period". The conversion is based on the average Xetra closing price of the pbb share in February of the disbursement year (disbursement price). Therefore, half of the variable remuneration of the employees concerned is linked to the performance of the pbb share price as part of the sustainability component.

The share-based remuneration may be forfeited after granting if the beneficiary was significantly involved in or responsible for conduct that led to significant losses or a significant regulatory sanction for the institution, or if he or she seriously violated relevant external or internal regulations regarding suitability and conduct (§§ 18 (5), 20 IVV).

When, in the context of share-based payment, the service is provided by the beneficiary, the resulting liability of pbb Group is recognised at fair value through profit or loss. The fair value of the liability is remeasured as at each reporting date, taking into account pbb's share price, until the liability is settled, with all changes in fair value being recognised in profit or loss. The volume of share-based payment is disclosed in Note "Related parties disclosures".

26. Currency Translation

Currency translation is carried out in accordance with the regulations of IAS 21. On the balance sheet date, monetary items in a foreign currency are translated into the functional currency. The reporting currency is Euro. Non-monetary items which were stated in a foreign currency using historical cost of purchase are measured using the exchange rate applicable at date of purchase.

Income and expenses attributable to currency translation are generally recognised in profit or loss in net other operating income/expenses.

All entities of the Group have Euro as the functional currency. Therefore, the group of consolidated companies does not include any companies from hyperinflationary countries.

27. Income Taxes

Income taxes are accounted for and measured pursuant to IAS 12 and according to IFRIC 23. Apart from the exceptions defined in the standard, deferred taxes are calculated for all temporary differences between the IFRS values and the tax values (balance sheet method). Deferred tax assets arising from non-utilised losses carried forward, interest assets carried forward and tax credits are recognised if required in accordance with IAS 12.34 et seq.

Deferred taxes are calculated using the national tax rates which are expected at the time the differences are settled, as the concept of deferred taxes is based on the presentation of future tax assets or tax liabilities (liability method). Changes in tax rates have been taken into account.

If it is unlikely that the amounts disclosed in pbb's tax declarations will be realised (uncertain tax positions), tax liabilities are recognised. The liability amount is derived as being the best possible estimate of the expected tax payment (expected amount or most likely amount of tax uncertainty). Tax claims from uncertain tax positions are recognised if they will likely be realised.

28. Non-current Assets Held for Sale

In accordance with IFRS 5, a non-current asset or disposal group must be classified as held for sale if the related carrying amount is primarily realised by a disposal transaction and not by continued use. To reclassify an asset as held for sale, certain conditions must be met on a cumulative basis. Above all, there must be a specific intention to sell, the asset must be immediately available and the disposal must be highly probable. As at 31 December 2022 and at 31 December 2021 pbb Group did not own any assets held for sale.

29. Judgements and estimations

When preparing the financial statements, pbb Group makes future-related judgements as well as estimations, which may carry a considerable risk of a major change to the disclosed assets and liabilities becoming necessary during the next financial year. The assumptions and parameters underlying the estimates to be made are based on the exercise of appropriate judgement.

Going-Concern
The Consolidated Financial Statements of pbb are based on the judgement of going-concern. The conditions of going-concern are described in the report on expected developments.

Classification of Financial Instruments (Business model criteria)
For measurement purposes the financial assets have to be classified into the three measurement categories at fair value through profit or loss, at fair value through other comprehensive income and at amortised cost. The classification depends amongst others on the contractual cash flow criterion. The assessment of this criterion is based on judgements which are described in the note “Financial Instruments”. For example, this relates to the assessment of the intention to hold financial assets in the future.

Allowances
pbb shall recognise a loss allowance for expected credit losses on a financial asset that is measured at amortised cost or at fair value through other comprehensive income, a lease receivable or specific loan commitments and financial guarantee contracts. For this reasonable and supportable information, including forward-looking information, have to be taken into account.

Expected credit losses are a probability-weighted estimate of credit losses, i.e. the present value of expected cash shortfalls, over the life of the financial instrument. A cash shortfall is the difference between the cash flows that are due to an entity in accordance with the contract and the cash flows that entity is expected to receive. Upon initial recognition, the impairments in lending business are based on expected credit losses for twelve months (so-called stage 1). The 12-month expected credit loss is that part of the lifetime expected credit losses, which is equal to the expected credit losses from defaults that may occur for the financial instrument within twelve months after balance sheet date. In case of a significant increase in the financial asset’s credit risk within the context of subsequent measurement (stage 2) or in case of a credit impairment (stage 3), the impairment has to reflect the expected default events over the life of the transaction (lifetime expected credit loss).

The methods and judgements, including forward-looking information, for the determination of a change of an impairment stage and estimation of the amount of impairment are reviewed at least annually.

In accordance with IAS 8.34, an accounting estimate may need revision if changes occur in the circumstances on which the estimate was based, or as a result of new information or more experience. The determination of loss allowances on financial instruments is based on accounting estimates. In 2022, pbb Group made three changes in accounting estimates as regards the measurement of loss allowances for non-credit-impaired financial instruments (Stages 1 and 2).

Firstly: regulatory risk parameters, including the probability of default (PD) and the loss given default (LGD), are used as a basis for determining the amount of expected credit losses of stage 1 and stage 2 financial instruments. The regulatory longer-term assessment over various economic cycles (through-the-cycle) that refers to a particular point in time is transferred into a reporting date-based or exact estimate of the current situation (point-in-time) as required under IFRS 9. For this purpose, reasonable and supportable information about past events, current conditions and projections of future economic conditions available at the reporting date without undue cost or effort is to be taken as a basis.

The expected five-year swap rate per currency is taken into account as a transformation parameter. Based on portfolio-specific analyses, the five-year swap rate determined as at the average maturity dates of a portfolio is now used for calculations to specific dates. Previously, the five-year swap rate was calculated based on a monthly average and without considering specific maturities.

The change in accounting estimates during the second quarter of 2022 benefited the Group's net income from risk provisioning in the amount of €7 million and was almost completely attributable to impairments on financial assets. Depending on the 5-year swap rate projection on the respective valuation date, the change in accounting estimates can either increase or decrease loss allowance in future periods.

Secondly: PD and LGD were previously transformed to the current point in time at the level of homogeneous sub-portfolios. From now on, the point-in-time transformation is even more granular for each financial instrument and is based on changed input parameters in the institutions' own rating systems. The change in accounting estimates reflects findings from the ongoing project to revise regulatory approaches for determining risk parameters.

The change in accounting estimates during the fourth quarter of 2022 resulted in a reversal of impairments recognised in net income from risk provisioning in the amount of €55 million. Of that amount, €37 million related to impairments of financial assets, while €18 million was attributable to as yet undisbursed amounts, i.e. off-balance sheet transactions. Depending on the expected point-in-time transformation parameters, the change in accounting estimates can either increase or decrease the impairment amounts in future periods.

Thirdly: in accordance with IFRS 9.5.5.19, the maximum period over which expected credit losses are measured corresponds to the maximum contractual period over which the entity is exposed to credit risk. In determining the period over which the entity is expected to be exposed to credit risk but where the expected credit losses would not be absorbed by the entity's normal credit risk management activities, an entity is required to consider factors such as historical information and historical patterns.

Among other things, the increased level of market interest rates has changed clients' behaviour regarding loan renewals. Accordingly, when measuring stage 1 and stage 2 expected credit losses, pbb Group assumes a higher probability of clients exercising their loan renewal options. This change in accounting estimates implemented during the fourth quarter of 2022 resulted in an increase of €10 million in the Group's net income from risk provisioning, attributable almost completely to financial assets. In future periods, the change in accounting estimates should result in an earlier recognition of allowances, with the amount of the effect depending on the respective contractual terms.

Fair Values of Original and Derivative Financial Instruments
The fair value of financial instruments that are not listed on active markets is measured using valuation models. In such cases, a check is performed regularly to assess whether the valuation models provide a comparable benchmark for current market prices. The valuation models can only take into account quantifiable factors (e.g. cash flows and discount rates) that also require estimates. Changes in estimations of these factors might have an impact on the fair values of the financial instruments.

Criteria in the area of environment, social and governance (ESG) should have a growing influence on the fair values of financial instruments in the future. This could lead to adjustments in estimates and measurement models.

Hedge Accounting
Relations between hedged items and hedging instruments can be presented in hedge accounting. A relationship only qualifies for hedge accounting when certain conditions specified under IAS 39.88 are satisfied. Amongst others the hedge has to be very efficient with regard to achieving compensation for the risks resulting from changes in the fair value or the cash flow in relation to the hedged risk.

The determination of the effectiveness of the risk hedge depends on risk measuring methods, the parameters which are used and estimations relating to the probability of occurrence. These methods and parameters are continuously developed in line with the risk management objectives and strategies.

Intangible Assets, Tangible Assets including Right-of-Use assets from Leases
Intangible assets and tangible assets include right-of-use assets from leases are subject to estimation uncertainties, particularly in the determination of the useful life of assets respecitively the expected contractual period of the lease and the associated amount of depreciation/amortisation recognised per period.

Provisions
Estimates are used in the measurement of provisions at pbb Group. Estimation uncertainties arise in particular during assessment of the amount of the future cash outflows, the time horizon and the discount rate.

Income Taxes
pbb Group is subject to a wide range of national tax regulations with regard to the calculation of income taxes. In order to measure the tax expenses, it is necessary to make estimates that are calculated with the existing knowledge as of the balance sheet date and closely related to the tax return prepared in the following financial year. In some countries, the current tax charges attributable to the current financial year can only be definitely finalised after the corresponding tax audit has been completed. The variances with regard to the estimated tax burden may have a positive or negative influence on the tax burden in future years.

With regard to the capitalisation of deferred taxes on loss carryforwards and other tax credits, the extent as well as the actual availability of such tax benefits are subject to estimation. These estimates are subject to change based on new information and findings. Major losses carried forward are subject to national German tax law, and their availability depends inter alia on the restrictions set out in Sections 10 d EStG, 8 c KStG as well as Section 10 a GewStG restrictions. Deferred tax assets arising from losses carried forward are therefore recognised to the extent as it is likely that future taxable income will be available to offset the non-utilised tax losses carried forward. The actual tax result situation in future periods - and thus the actual usability of loss and interest carryforwards - may differ from the estimate at the time the deferred taxes are recognized.

Consolidation
Companies and structured entities must be consolidated if pbb has direct or indirect control over them. Control is deemed to exist if pbb has decision-making powers to manage relevant activities, has a right to significant returns from the subsidiary and can use its decision-making powers to influence the amount of the significant variable returns. The level of control is assessed on the basis of contractual and economic relationships to the company or the structured entity. The assessment whether pbb exerts control or substantial influence over the company may result in judgement leeway.

30. Notes to segment reporting by operating segment

Segment reporting for the 2022 financial year was prepared in accordance with IFRS 8 Operating Segments. In line with the Management Approach under IFRS 8, segment reporting discloses segment-specific, management-relevant financial information that is also regularly used by Management Board (Chief Operating Decision Maker) when deciding on the allocation of resources, and for assessing the earnings power of segments. Based on the organisational structure, which is aligned to the various products and services offered, three business segments have been determined in line with internal management reporting.

Within segment reporting, income is determined by deducting matched-maturity funding rates prevailing at the time of concluding a transaction from the interest rate charged to the client. The input parameters required for this purpose are set at the time of originating a new business transaction, within the scope of accounting for individual transactions. In addition, income from investing the Bank’s own funds is included at segment level. The allocation of liquidity costs to the operating segments is based on the transfer price mechanism for the individual transaction. The income of pbb Group's operating segments is based exclusively on transactions with external customers. For this reason, pbb does not present income per business segment separately according to internal and external income.

Further income or expenses that cannot be allocated directly to a specific lending transaction (in particular, the results from disposal of assets held for liquidity management, from market-induced effects on net income from fair value measurement, hedging relationships, the reversal or addition of provisions in the non-lending business as well as the bank levy) are allocated to the business segments, usually on a pro-rata basis, in line with financing volumes.

The allocation of general and administrative expenses to the operating segments differentiates between expenses which can be directly attributed and those which are not directly attributable. Expenses (of the sales units, for example) which are directly attributable can be clearly assigned to the segments via the cost centre. Expenses (of the central units, for example) which are not directly attributable are assigned to the segments' cost centres via well-defined allocation models.

Segment risk-weighted assets (RWA) are determined in accordance with the allocation of individual transactions (credit risk, for example) and with the allocated risk types (operational risks, for example). Risk types which are not directly attributable are assigned to the segments in accordance with -defined allocation models.

pbb allocates reported equity to segments in proportion to economic required capital (in line with the 'bottleneck principle'), incorporating adjusted input parameters from Pillar 1 for the ICAAP economic perspective. Beginning in the year under review, credit spread risks are no longer taken into account when deriving the equity capital allocation key on the basis of an expected loss shortfall approach (see note "Consistency").

Real Estate Finance (REF)
The REF operating segment comprises financing for professional real estate investors. These include professional national and international real estate companies, institutional investors, property funds as well as, above all in Germany, customers with a regional focus. Financed properties mainly involve office buildings, properties for residential use, retail and logistics properties as well as (business) hotels.

Public Investment Finance (PIF)
The PIF business segment comprises financing eligible for covered bonds aimed at the provision and improvement of public infrastructure. Customers in this segment include, amongst others, regions, provinces, municipalities, urban development companies, public hospitals, investment or real estate companies. Moreover, the Group is active in long-term publicly guaranteed export financings hedged by public export-credit insurers. Bond purchases, above all for cover assets pool and liquidity management, are also part of this segment. In addition, the PIF segment includes the earnings contribution of the subsidiary CAPVERIANT GmbH, which operates a digital platform for public-sector borrowers and institutional investors.

Value Portfolio (VP)
The Value Portfolio (VP) operating segment comprises non-strategic portfolios and activities. The VP consists almost entirely of existing financings to the public sector which are not linked to specific projects (budget financing).

Consolidation & Adjustments (C&A) reconciles the aggregated segment results with the consolidated result. The column also includes income from the investment of allocated equity.

31. Income statement by operating segment

Income/expenses

in € million		REF	PIF	VP	C&A	pbb Group
Operating income	2022	460	32	37	2	**531**
	2021	511	40	38	2	**591**
Net interest income	2022	420	32	35	2	**489**
	2021	417	37	38	2	**494**
Net fee and commission income	2022	8	-	-	-	**8**
	2021	8	-	-	-	**8**
Net income from fair value measurement	2022	14	1	5	-	**20**
	2021	6	1	3	-	**10**
Net income from realisations	2022	16	-	-1	-	**15**
	2021	81	2	-2	-	**81**
Net income from hedge accounting	2022	-	-	-	-	**-**
	2021	-	-	-	-	**-**
Net other operating income	2022	2	-1	-2	-	**-1**
	2021	-1	-	-1	-	**-2**
Net income from risk provisioning	2022	-69	-1	26	-	**-44**
	2021	-79	-	-2	-	**-81**
General and administrative expenses	2022	-196	-17	-11	-	**-224**
	2021	-189	-19	-11	-	**-219**
Expenses from bank levies and similar dues	2022	-21	-4	-7	-	**-32**
	2021	-18	-4	-7	-	**-29**
Net income from write-downs and write-ups of non-financial assets	2022	-16	-1	-1	-	**-18**
	2021	-17	-2	-1	-	**-20**
Profit before tax	**2022**	**158**	**9**	**44**	**2**	**213**
	2021	**208**	**15**	**17**	**2**	**242**

Cost-income ratio[1)]

in %		REF	PIF	VP	pbb Group
Cost-income ratio	2022	46.1	56.3	32.4	**45.6**
	2021	40.3	52.5	31.6	**40.4**

[1)] Cost-income ratio is the ratio of general and administrative expenses and net income from write-downs and write-ups on non-financial assets to operating income.

32. Balance-sheet-related measures by operating segment

The Management Board controls balance-sheet-related measures by operating segments based on financing volumes, on risk-weighted assets and on equity.

Balance-sheet-related measures

in € billion		REF	PIF	VP	C&A	pbb Group
Financing volumes[1)]	31.12.2022	29.3	4.5	9.9	-	**43.7**
	31.12.2021	27.6	5.2	10.9	-	**43.7**
Risik-weighted assets[2)]	31.12.2022	15.5	0.6	0.2	0.7	**17.0**
	31.12.2021	15.1	0.7	0.3	0.7	**16.8**
Equity[3)]	31.12.2022	2.4	0.1	0.3	0.4	**3.2**
	31.12.2021	2.1	0.2	0.4	0.4	**3.1**

[1)] Notional amounts of the drawn parts of granted loans and parts of the securities portfolio.
[2)] Including risk-weighted credit risk positions as well as the capital requirements for market risk positions and operational risks scaled with the factor 12.5.
[3)] Excluding accumulated other comprehensive income (OCI) from cash flow hedge accounting, financial assets at fair value through OCI, AT1 capital and non controlling interest. Numbers as of 31 December 2021 were adjusted due to IFRS 8.29 (see note “Consistency”).

33. Breakdown of operating income

Operating income by products

Operating income by products

in € million		Real estate financing	Public investment financing	Other Products	**pbb Group**
Operating income	2022	460	32	39	**531**
	2021	511	40	40	**591**

Operating income by regions

pbb Group differentiates between the regions Germany, Rest of Europe and USA. Allocation of values to regions is based on the location of the registered offices of the Group companies or their branches respectively their representative offices.

Operating income by regions

in € million		Germany	Rest of Europe	USA	**pbb Group**
Operating income	2022	494	31	6	**531**
	2021	549	38	4	**591**

Operating income by customers

There were no significant customers within the meaning of IFRS 8.34 in the financial years 2022 and 2021.

NOTES TO THE CONSOLIDATED INCOME STATEMENT

34. Net interest income

Net interest income

in € million	**2022**	**2021**
Interest income	1,613	1,498
from financial assets at fair value through profit or loss	301	217
from financial assets at fair value through other comprehensive income	31	31
from financial assets at amortised cost	1,211	1,041
from hedge accounting derivatives (net)	12	117
from other assets	4	4
negative interest from non-derivative financial liabilities	54	88
Interest expenses	-1,124	-1,004
from financial liabilities at fair value through profit or loss	-382	-250
from financial liabilities measured at amortised cost	-716	-712
from other liabilities	-1	-1
negative interest from non-derivative financial assets	-25	-41
Total	**489**	**494**

The net interest income contains positive interest (net) from derivatives in the amount of €5 million (2021: €19 million).

35. Net fee and commission income

Net fee and commission income

in € million	2022	2021
Fee and commission income	11	11
from financial assets at amortised cost and financial liabilties not at fair value through profit or loss	11	11
Other lending business	11	11
Fee and commission expenses	-3	-3
from financial assets at amortised cost and financial liabilties not at fair value through profit or loss	-3	-3
Securities and custodial services	-2	-1
Other lending business	-1	-2
Total	**8**	**8**

Fee and commission income is recognised at a point in time when the performance obligation is satisfied, i.e. the service is provided, by pbb Group. Fee and commission income is generated solely in the REF segment.

36. Net income from fair value measurement

Net income from fair value measurement

in € million	2022	2021
Net income from stand-alone derivatives	82	24
Interest derivatives	82	24
Net income from other financial assets at fair value through profit or loss	-62	-14
From debt instruments	-62	-14
Interests in companies and funds qualified as debt instruments	-1	-
Debt securities	-16	-4
Loans and advances	-45	-10
Total	**20**	**10**

37. Net income from realisations

Net income from realisations

in € million	2022	2021
Income from derecognition of financial instruments	21	89
from financial assets at amortised cost	20	87
from disposal	1	-
from early repayment	19	87
from financial liabilities measured at amortised cost	1	2
from early repayment	1	2
Expenses from derecognition of financial instruments	-6	-8
from financial assets at fair value through other comprehensive income	-	-1
from disposal	-	-1
from financial assets at amortised cost	-1	-1
from early repayment	-1	-1
from financial liabilities measured at amortised cost	-5	-6
from early repayment	-5	-6
Total	**15**	**81**

38. Net income from hedge accounting

Net income from hedge accounting

in € million	2022	2021
Net income from micro fair value hedge accounting	2	1
from hedged items	616	85
from hedging instruments	-614	-84
Net income from portfolio hedge accounting	-2	-1
from hedged items	92	18
from hedging instruments	-94	-19
Total	**-**	**-**

39. Net other operating income

Net other operating income

in € million	2022	2021
Net income from foreign currency translation	-4	-4
Net income from provisions in non-lending business	22	2
Miscellaneous other operating income	-19	-
Total	**-1**	**-2**

40. Net income from risk provisioning

Net income from risk provisioning

in € million	2022	2021[1)]
From financial assets	-47	-83
Stage 1	-7	-6
Stage 2	-1	-30
Stage 3	-39	-47
Income from recoveries from written-off financial assets	-	1
Net income from provisions in off balance sheet lending business	3	1
Total	**-44**	**-81**

[1)] Adjustment of the previous year's amounts: The originally reported net income from risk provisioning from stage 1 amounted to €21 million and from level 2 to €-57 million.

Net income from risk provisioning from financial assets resulted almost completely from financial assets “at amortised cost” apart.

41. General and administrative expenses

General and administrative expenses

in € million	2022	2021
Personnel expenses	-126	-132
Wages and salaries	-102	-101
Social security expenses	-14	-14
Pension expenses and related employee benefit expenses	-10	-9
Other personnell expenses/income	-	-8
Non-personnel expenses	-98	-87
Office and operating expenses	-5	-5
Consulting expenses	-17	-21
IT expenses	-55	-47
Other non-personnel expenses	-21	-14
Total	**-224**	**-219**

42. Expenses from Bank Levies and Similar Dues

Expenses from bank levies and similar dues[1)]

in € million	2022	2021
Bank levies	-31	-27
Compensation scheme of German banks	-1	-2
Total	**-32**	**-29**

[1)] Includes administrative expenses invoiced for the dues/levies.

43. Net Income from Write-downs and Write-Ups of Non-financial Assets

Net income from write-downs and write-ups of non-financial assets

in € million	2022	2021
Depreciation or amortisation	-18	-20
Tangible assets	-7	-6
Thereof: Right-Of-Use of lease assets	-6	-5
Intangible assets	-11	-14
Total	**-18**	**-20**

44. Icome Tax

Breakdown

in € million	2022	2021
Current taxes	-13	-38
Deferred taxes	-13	24
Thereof: Deferred taxes on losses carried forward	-8	54
Total	**-26**	**-14**

Current taxes include a tax income for prior years of €10 million (2021: €8 million). Tax income for prior years resulted from the reversal of provisions for tax audit risks following conclusion of a tax audit in Germany as well as the expiry of the statute of limitations at one branch. In the previous year, it resulted from tax refunds due to a subsequent change in the legal interpretation of the tax authorities and from the reversal of provisions for branch audit risks.

For domestic companies, the deferred taxes are calculated using the future uniform rate of corporation tax of 15.0% plus the corresponding 5.5% solidarity surcharge and the trade tax depending on the locally applicable assessment rate (the current basic rate is 3.5%). This resulted in a tax rate for the calculation of deferred taxes of 27.67% (2021: 27.67%).

The following overview shows the development of the deferred taxes recognised in the financial statements:

Development of deferred taxes

in € million	2022	2021
Deferred taxes recognised in the statement of financial position	119	129
Difference to prior year	-10	34
Thereof: Recognised in profit or loss	-13	24
OCI from pension commitments	-7	10
OCI from financial assets at fair value through OCI	10	-3
OCI from Cash flow hedge accounting	-	3

The deferred taxes recognised outside profit or loss regarding accumulated other comprehensive income increased by €2 million (2021: €10 million).

Reconciliation

in € million (unless otherwise indicated)	2022	2021
Profit or loss before tax	213	242
Applicable (legal) tax rate in %	27.67	27.67
Expected (computed) tax expense	-59	-67
Tax effects		
arising from deductible and non-deductible items	-7	-7
arising from valuation adjustments and non-application of deferred taxes	30	52
arising from prior years	10	8
Reported income taxes	**-26**	**-14**
Group tax ratio in %	**12.21**	**5.79**

Following the precise determination on euro basis, the corporate tax rate was at 12.22% (2021: 5.77%)

The tax rate applicable for the reporting year, including solidarity surcharge, is 27.67% (2021: 27.67%) and is comprised of the 15.0% German corporate tax rate currently valid, the payable solidarity surcharge of 5.5% as well as the average trade tax rate of 11.84% (2021: 11.84%).

Foreign tax rates ranged between 20.6% and 35.3%. In Germany, the effective current tax charge based on corporate tax, solidarity surcharge and trade tax is 11.07% due to the utilisation of loss carryforwards in the context of minimum taxation.

The effects attributable to deductible and non-deductible items relate primarily to taxable additional income and minoar taxable result as well non-deductible expenses, which do not have to be taken into account as deferred taxes as a result of permanent differences, but which have reduced or increased the basis of taxation.

The effects arising from valuation adjustments and non-application of deferred taxes comprise effects from write up of deferred tax assets of balance differences, the use of tax losses carried forward previously not accounted for and from opposing effects from non-application of deferred tax assets of balance differences.

The effects from previous years include current taxes for previous years, which have incurred after completion of the audit because of the reversal of provisions for tax audits domestically as well of one branch due to statutes of limitations.

The Group tax ratio is the quotient of the stated income taxes (current and deferred taxes) and profit before tax.

The deferred tax liabilities or deferred tax assets relate to the following items:

Deferred tax liabilities/assets

in € million	2022	2021
Financial assets at amortised cost after credit loss allowances	35	44
Positive fair values of hedge accounting derivatives	137	46
Financial liabilities at fair value through profit or loss	65	140
Other assets/liabilities	15	17
Deferred tax liabilities before offsetting	**252**	**247**
Offsetting	-252	-247
Deferred tax liabilities after offsetting	**-**	**-**
Financial assets at fair value through profit or loss	223	149
Positive/negative fair values of hedge accounting derivatives	49	100
Provisions	25	46
Other assets/liabilities	28	27
Losses carried forward	46	54
Deferred tax assets before offsetting	**371**	**376**
Offsetting	-252	-247
Deferred tax assets after offsetting	**119**	**129**

The assessment of the recoverability of deferred tax assets on deductible temporary differences and on loss carryforwards is based on tax planning derived from the general corporate planning.

On the reporting date, there were unused tax losses tax carried forward €2,524 million (2021: €2,532 million) at corporate tax level and €2,674 million (2021: €2,688 million) at trade tax level, for which no deferred tax assets have been recognised Loss carryforwards may be applied for an unlimited period, unless in the event of a change of shareholders which is detrimental for tax purposes. In addition, no deferred tax assets were recognised on deductible temporary differences that can be carried forward indefinitely in the amount of €322 million (2021: €375 million). Deferred tax expense from the origination and reversal of temporary differences arose in the amount of €4 million (2021: deferred tax income of €50 million).

Tax rate changes did not result in major deferred tax expenses or income in the current year nor in the previous year.

The use of tax losses previously not recognised resulted in a reduction in the current income tax expense in the amount of €2 million (2021: reduction in the current income tax expense in the amount of €57 million). From the use and write-off of loss carryforwards previously recognised, deferred a tax expense in the amount of €23 million (2021: of €0).

In 2022 there were no differences associated with investments in subsidiaries (2021: no differences as well).

Global minimum tax

On 14 December 2022, the Council of the European Union published a Directive to ensure a global minimum rate of taxation for multinational groups and large domestic groups in the Union. Member States must transpose the Directive into national law by 31 December 2023. According to the Directive, the minimum tax is to be levied on the basis of the so-called Income Inclusion Rule (IRR) starting with financial years beginning after 31 December 2023. This means that from 2024, there will be a mechanism across the EU to raise the tax burden on the profits of large internationally active groups of companies to at least 15% in all countries of operation if a business unit is located in an EU Member State. This implements in the EU the second pillar (‘Pillar 2’) of the OECD's two-pillar approach to taxing the digital economy. In the United Kingdom, draft legislation was introduced in July 2022 to establish minimum taxation for financial years beginning after 31 December 2023, in line with the OECD proposals. In the US, no minimum tax in accordance with the OECD framework has been introduced so far.

For the current reporting period, the average effective tax rate – calculated on the basis of IAS 12 – is below 15% for the following jurisdictions:

in € million	Germany	France	Spain
Aggregated income tax expense	-22	1	-
Profit before tax	205	6	-
Effective tax rate in % (determination on euro basis)	10.4	-9.3	0.0

Nevertheless, pbb expects that no corresponding supplementary tax will arise in the above countries, as in Germany and France the effective tax burden was reduced by income from the reversal of uncertain tax positions, which is not to be taken into account in the determination for Pillar 2 purposes. In addition, the calculation for Pillar 2 purposes does not take into account the income from valuation adjustments and the non-recognition of deferred taxes that arose at the German entities. Due to the Safe Harbour Rules published by the OECD in December 2022, no minimum tax should be levied for Spain either. In addition, the tax rate of 0% for Spain is due to the fact that loss carryforwards are used on which no deferred tax asset has been recognised.

Overall, pbb Group does not operate in any jurisdiction with an entity where the average effective tax rate for Pillar 2 purposes is below 15%.

45. Net Gains/Net Losses

The income statement contains the following net gains/net losses recognised in profit or loss by measurement categories:

Net Gains/Net Losses by measurement categories

in € million	2022	2021
Financial assets		
at fair value through profit ot loss	20	10
from stand-alone derivatives	82	24
from debt instruments	-62	-14
at fair value through other comprehensive income	-	-1
at amortised cost	-27	4
Financial liabilities		
at amortised cost	-4	-4

The net gains and lossesshown in the table include additions to and reversals of credit loss allowances, derecognition gains and losses as well as the fair value measurement results from financial instruments recognised in profit or loss. Additionally, an expense of €21 million resulted from the modification of the TLTRO III financial liabilities measured at amortised cost.

46. Earnings Per Share

Earnings per share

		2022	2021
Net income attributable to shareholders of pbb	in € million	188	229
Thereof: attributable to the ordinary shareholders	in € million	171	212
Thereof: attributable to the AT1 investors	in € million	17	17
Average number of ordinary shares issued	pieces	134,475,308	134,475,308
Adjusted average number of ordinary shares issued pieces	pieces	134,475,308	134,475,308
Basic earnings per share	**in €**	**1.27**	**1.58**
Diluted earnings per share	**in €**	**1.27**	**1.58**

Earnings per share are calculated in accordance with IAS 33 by dividing net income/loss attributable to the ordinary shareholders holders by weighted average number of ordinary shares. Net income/loss is allocated under the assumption of after-tax interests for the AT1 capital, which are accrued pro rata temporis as well as assuming full operation of the discretionary AT1-coupon.

NOTES TO THE CONSOLIDATED STATEMENT OF FINANCIAL POSITION (ASSETS)

47. Cash reserve

Cash reserve

in € million	31.12.2022	31.12.2021
Balances with central banks	1,044	6,607
Total	**1,044**	**6,607**

Cash on hand as of 31 December 2022 amounts to €0 million as was the case in previous year.

48. Financial assets at fair value through profit or loss

Financial assets at fair value through profit or loss

in € million	31.12.2022	31.12.2022
Positive fair values of stand-alone derivatives	562	540
Interests in companies and funds qualified as debt instruments	2	3
Debt securities	117	132
Bonds and notes	117	132
Public-sector issuers	80	88
Other issuers	37	44
Loans and advances to customers	394	505
Public-sector loans and advances	138	159
Real estate loans and advances	256	346
Total	**1,075**	**1,180**

49. Financial assets at fair value through other comprehensive income

Financial assets at fair value through other comprehensive income

in € million	31.12.2022	31.12.2021
Debt securities	1,409	943
Bonds and notes	1,409	943
Public-sector issuers	653	360
Other issuers	756	583
Loans and advances to customers	283	315
Public-sector loans and advances	83	115
Other	200	200
Total	**1,692**	**1,258**

50. Financial assets at amortised cost after credit loss allowances (including claims from finance lease agreements)

Financial assets at amortised cost before credit loss allowances

in € million	31.12.2022	31.12.2021
Debt securities	5,377	6,893
Bonds and notes	5,377	6,893
Public-sector issuers	4,421	5,052
Other issuers	956	1,841
Loans and advances to other banks	5,763	2,646
Public-sector loans and advances	544	551
Investments in money	4,243	1,034
Other loans and advances to other banks	976	1,061
Loans and advances to customers	37,839	38,710
Public-sector loans and advances	8,888	11,466
Real estate loans and advances	28,911	27,183
Other loans and advances to customers	40	61
Claims from finance lease agreements	142	180
Total	**49,121**	**48,429**

Development in risk provisioning

in € million	1.1.2022	Transfer Stage 1	Transfer Stage 2	Transfer Stage 3	New Business and additions	Repayments and derecognitions	Amounts used	Changes of credit risk (net)	Other changes	31.12.2022
Allowances for credit losses on financial assets	-342	-	-	-	-46	14	-	-15	2	-387
measured at amortised cost	-342	-	-	-	-46	14	-	-15	2	-387
Debt securities	-3	-	-	-	-	-	-	2	-	-1
Stage 1	-3	-	-	-	-	-	-	2	-	-1
Loans and advances to customers	-339	-	-	-	-46	14	-	-17	2	-386
Stage 1	-25	-43	33	-	-46	5	-	32	-	-44
Stage 2	-142	43	-33	2	-	9	-	-10	-	-131
Stage 3	-172	-	-	-2	-	-	-	-39	2	-211
Provisions for off-balance-sheet lending business (contingent liabilies and other commitments)	-16	-	-	-	-11	10	-	4	-	-13
Stage 1	-4	-12	3	-	-11	4	-	15	-	-5
Stage 2	-12	12	-3	-	-	6	-	-11	-	-8
Total	**-358**	**-**	**-**	**-**	**-57**	**24**	**-**	**-11**	**2**	**-400**

Development in risk provisioning[1)]

in € million	**1.1.2021**	Trans-fer Stage 1	Trans-fer Stage 2	Trans-fer Stage 3	New Busi-ness and additions	Repay-ments and derecogni-tions	Amounts used	Changes of credit risk (net)	Other changes	**31.12.2021**
Allowances for credit losses on financial assets	-244	-	-	-	-57	25	-	-51	-15	-342
measured at amortised cost	-244	-	-	-	-57	25	-	-51	-15	-342
Debt securities	-2	-	-	-	-	-	-	-1	-	-3
Stage 1	-2	-	-	-	-	-	-	-1	-	-3
Loans and advances to customers	-242	-	-	-	-57	25	-	-50	-15	-339
Stage 1	-39	-12	32	-	-57	10	-	42	-1	-25
Stage 2	-90	12	-32	-	-	15	-	-45	-2	-142
Stage 3	-113	-	-	-	-	-	-	-47	-12	-172
Provisions for off-balance-sheet lending business (contingent liabilies and other commitments)	-17	-	-	-	-12	3	-	10	-	-16
Stage 1	-12	-1	7	-	-12	2	-	12	-	-4
Stage 2	-5	1	-7	-	-	1	-	-2	-	-12
Total	**-261**	**-**	**-**	**-**	**-69**	**28**	**-**	**-41**	**-15**	**-358**

1) Adjustment of the previous year's amounts of loss allowance on loans and advances to customers: originally, €27 million was transferred from stage 2 to stage 1 and €39 million from stage 1 to stage 2. The net change in credit risk originally amounted to €50 million in stage 1 and -€53 million in stage 2.

Loss allowances on financial assets measured at fair value through other comprehensive income and on receivables from finance leases amounted to less than €1 million as at 31 December 2022 and 31 December 2021.

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 reporting date. pbb Group has two Russia-related public investment financings with a gross carrying amount totalling €24 million in its portfolio, which are guaranteed by the Federal Republic of Germany to a very large extent. The uncovered part amounted to just under €2 million, nearly all of which was recognised as stage 3 impairment.

However, the war war between Russia and Ukraine and associated reciprocal sanctions have led to macroeconomic consequences such as lower economic growth, a significant rise in inflation, higher interest rates, and supply chain issues, all of which could have indirect effects on pbb Group's financings. Due to the war, any assessment of future economic developments is currently characterised by particularly high uncertainty.

Apart from the high level of macroeconomic uncertainty, there are also specific uncertainty factors which affect pbb Group's portfolios to varying degrees. One contributing factor is that the financed properties have developed inconsistently in recent years, for example in terms of yields. Future development of the financed office properties in the portfolio is particularly uncertain. Demand for office property was high until the outbreak of the COVID-19 pandemic. And although office property yields have not fallen over the three years since, uncertainty remains high for office properties going forward. Among the reasons for this is the trend towards working from home, which may lead to lower demand for office space. Another factor is a heightened need for improved sustainability of office properties. This represents a particular challenge for office properties, as the changing world of work is also intensifying the shift to a tenant’s market. Both of these factors may lead to a significant decline in the market values of office properties down the road. This risk could hit older office properties in less desirable locations especially hard.

The market value forecasts used in the model to determine stage 1 and stage 2 loss allowances for office financings are based primarily on external sources. These projections only partially account for the specific risks of the trend towards working from home and the need for improved sustainability. Notably, the worsening of indicators towards the end of 2022 has not yet been adequately reflected. pbb Group has therefore provided for the additional risk in the form of a management overlay in the amount of €69 million, assuming a steady continuation of its model. A discount was applied to the expected office property market values in the baseline and negative scenarios. Moreover, the risk of a further rise in interest rates was taken into account in the negative scenario, as this may not be offset – or only to a limited extent – by future rent increases, especially for office properties outside of prime locations.

At the same time, pbb Group completely reversed the €54 million management overlay which was in place on 31 December 2021 to consider delayed defaults and bankruptcies following government support measures to mitigate the economic consequences of the COVID-19 pandemic. This decision was based on the almost complete withdrawal of COVID-19-related social restrictions and hence the significantly lowered risk of credit defaults in connection with the pandemic.

If all stage 1 financial assets were in stage 2 the balance of credit loss allowances as at 31 December 2022 would increase by €110 million (31 December 2021: €97 million). For off-balance sheet transactions, the additional increase would be €18 million (31 December 2021: €16 million).

If all stage 2 financial assets were in stage 1, the balance of credit loss allowances would decrease by €79 million (31 December 2021: €101 million). For off-balance sheet transactions, the decrease would be €6 million (31 December 2021: €10 million).

pbb Group used a base scenario with a weighting of 55% (31 December 2021: 55%), a positive scenario with a weighting of 5% (31 December 2021: 5%), and a negative scenario with a weighting of 40% (31 December 2021: 40%) as the basis for the calculation of the loss allowances of Stages 1 and 2. If the positive scenario was given a weighting of 100%, the loss allowances would be reduced by €98 million (31 December 2021: €60 million). If the negative scenario was given a weighting of 100%, the loss allowances would be increased by €144 million (31 December 2021: €100 million).

When determining loss allowances, information about past events, current conditions and forecasts of future economic developments are incorporated in accordance with IFRS 9.5.5.17. Material parameters for economic development are the expectations as regards the gross domestic product and the unemployment rate. pbb Group has used the following values.

Forecast of gross domestic product in percent

	Positive			**Basis**			**Negative**		
Country/year	2023	2024	2025	2023	2024	2025	2023	2024	2025
Germany	0.5	3.9	2.1	-0.5	1.7	1.4	-2.7	0.1	2.4
France	0.9	2.7	2.0	0.3	1.2	1.8	-2.1	-0.9	2.1
Spain	2.3	3.9	2.3	1.3	2.7	2.1	-2.2	0.7	2.4
Italy	1.3	2.0	1.7	0.4	1.2	1.2	-1.3	-0.5	0.5
United Kingdom	0.2	2.5	1.6	-0.6	0.2	1.4	-1.4	-1.8	1.7
USA	1.7	2.1	2.0	0.7	1.3	1.8	-0.7	-1.3	2.1

Forecasts of unemployment rate in percent

	Positive			Basis			Negative		
Country/year	2023	2024	2025	2023	2024	2025	2023	2024	2025
Germany	2.9	2.9	2.9	3.4	3.2	3.1	4.8	4.7	4.2
France	6.8	7.4	7.4	7.5	8.2	8.3	8.5	9.1	9.2
Eurozone	6.8	6.5	6.5	6.9	6.8	6.6	8.3	8.4	8.1
United Kingdom	4.2	4.2	4.2	4.6	5.1	5.4	5.1	5.4	6.3
USA	3.5	3.9	4.0	4.4	4.8	4.9	8.5	9.3	9.2

Forecasts of five-year swap rate in percent

	Positive			Basis			Negative		
Currency/year	2023	2024	2025	2023	2024	2025	2023	2024	2025
EUR	2.8	2.6	2.9	3.1	3.0	3.0	2.4	2.1	2.6
GBP	3.6	3.3	3.4	3.9	3.7	3.5	3.2	2.8	3.1
USD	3.0	2.8	3.0	3.4	3.2	3.2	2.5	2.2	2.7
CHF	1.6	1.7	2.0	1.9	2.1	2.2	1.0	1.1	1.7
SEK	3.0	2.8	2.9	3.2	3.0	3.0	2.7	2.5	2.7

Development in gross carrying amounts

in € million	**1.1.2022**	Transfer Stage 1	Transfer Stage 2	Transfer Stage 3	New Business and additions	Repayments and derecognitions	Direct write-offs	Other	**31.12.2022**
Gross carrying amounts of financial assets	49,641	-	-	-	12,770	-9,063	-1	-2,498	50,849
measured at fair value through other comprehensive income	1,212	-	-	-	603	-33	-	-54	1,728
Debt securities	911	-	-	-	603	-12	-	-52	1,450
Stage 1	911	-	-	-	603	-12	-	-52	1,450
Loans and advances to customers	301	-	-	-	-	-21	-	-2	278
Stage 1	301	-	-	-	-	-21	-	-2	278
measured at amortised cost	48,429	-	-	-	12,167	-9,030	-1	-2,444	49,121
Debt securities	6,893	-	-	-	-	-924	-	-592	5,377
Stage 1	6,463	-	179	-	-	-674	-	-591	5,377
Stage 2	430	-	-179	-	-	-250	-	-1	-
Loans and advances to other banks	2,646	-	-	-	3,820	-715	-	12	5,763
Stage 1	2,646	-	-	-	3,820	-715	-	12	5,763
Loans and advances to customers	38,710	-	-	-	8,347	-7,378	-1	-1,839	37,839
Stage 1	29,128	-6,127	2,777	-	8,334	-4,258	-	-1,848	28,006
Stage 2	9,002	6,093	-3,162	-	-	-2,966	-	33	9,000
Stage 3	580	34	385	-	13	-154	-1	-24	833
Claims from finance lease agreements	180	-	-	-	-	-13	-	-25	142
Stage 1	180	-	-	-	-	-13	-	-25	142
Off-balance-sheet business [1]	3,233	-	-	-	1,874	-2,064	-	1	3,044
Stage 1	2,294	-664	333	-	1,869	-1,263	-	1	2,570
Stage 2	939	664	-340	-	-	-794	-	1	470
Stage 3	-	-	7	-	5	-7	-	-1	4
Total	**52,874**	**-**	**-**	**-**	**14,644**	**-11,127**	**-1**	**-2,497**	**53,893**

[1] Notional amount of contingent liabilities and other commitments.

Development in gross carrying amounts

in € million	1.1.2021	Transfer Stage 1	Transfer Stage 2	Transfer Stage 3	New Business and additions	Repayments and derecognitions	Direct write-offs	Other	31.12.2021
Gross carrying amounts of financial assets	50,370	-	-	-	9,576	-9,944	-1	-360	49,641
measured at fair value through other comprehensive income	1,457	-	-	-	200	-412	-	-33	1,212
Debt securities	1,333	-	-	-	-	-390	-	-32	911
Stage 1	1,333	-	-	-	-	-390	-	-32	911
Loans and advances to customers	124	-	-	-	200	-22	-	-1	301
Stage 1	124	-	-	-	200	-22	-	-1	301
measured at amortised cost	48,913	-	-	-	9,376	-9,532	-1	-327	48,429
Debt securities	7,481	-	-	-	-	-365	-	-223	6,893
Stage 1	7,481	-	-431	-	-	-365	-	-222	6,463
Stage 2	-	-	431	-	-	-	-	-1	430
Loans and advances to other banks	1,874	-	-	-	1,637	-859	-	-6	2,646
Stage 1	1,874	-	-	-	1,637	-859	-	-6	2,646
Loans and advances to customers	39,358	-	-	-	7,739	-8,296	-1	-90	38,710
Stage 1	30,172	2,600	-5,288	-	7,739	-5,626	-	-469	29,128
Stage 2	8,731	-2,600	5,316	-193	-	-2,504	-	252	9,002
Stage 3	455	-	-28	193	-	-166	-1	127	580
Claims from finance lease agreements	200	-	-	-	-	-12	-	-8	180
Stage 1	200	-	-	-	-	-12	-	-8	180
Off-balance-sheet business[1)]	3,440	-	-	-	1,720	-1,968	-	41	3,233
Stage 1	2,993	102	-837	-	1,720	-1,587	-	-97	2,294
Stage 2	447	-102	837	-	-	-381	-	138	939
Stage 3	-	-	-	-	-	-	-	-	-
Total	**53,810**	**-**	**-**	**-**	**11,296**	**-11,912**	**-1**	**-319**	**52,874**

[1)] Notional amount of contingent liabilities and other commitments.

In contrast to the amount to be reported in the statement of financial position, the gross carrying amount of financial assets measured at fair value through other comprehensive income does not include the accumulated changes in fair value of €-36 million (31 December 2021: €46 million).

The maximum default risk to which pbb Group is exposed is reflected in the net carrying amounts presented in the statement of financial position for financial assets measured at amortised cost, and in the fair values presented in the statement of financial position for financial assets measured at fair value through other comprehensive income.Loans and advances to customers of stage 3 were collateralised in an amount of €528 million as at the reporting date (31 December 2021: €408 million).

At pbb Group, contractual amounts outstanding of €0 million (31 December 2021: € 0million) existed for financial assets that were written off in 2022 and that continue to be subject to enforcement measures.

Due to collateral provided, pbb Group did not recognise stage 3 credit loss allowances as at 31 December 2022 for credit-impaired financial instruments with a carrying amount of €304 million (31 December 2021: €140 million). Thereof, €259 million (31 december 2021: €105 million) moved to level 3 in the reporting year. The collateral is in the form of mortgages of properties in good locations and in state guarantees.

pbb Group did not hold any salvage acquisitions or other seized collateral as at 31 December 2022 and 31 December 2021.

51. Positive fair values of hedge accounting derivatives

Positive fair values of hedge accounting derivatives

in € million	31.12.2022	31.12.2021
Positive market values of hedge accounting derivatives	262	1,009
Total	**262**	**1,009**

52. Valuation adjustment from portfolio hedge accounting (assets)

The line item valuation adjustments from portfolio hedge accounting includes the positive fair values in relation to the hedged risks in the portfolios of hedged items. They amounted to €-84 million as at 31 December 2022 (31 December 2021: €5 million).

53. Tangible assets

Development of tangible assets

			2022	2021
in € million	Operating equipment	Right of Use assets (IFRS 16)	Total	Total
Acquisition/production costs				
Balance at 1.1.	**15**	**43**	**58**	**58**
Additions	-	1	1	-
Balance at 31.12.	**15**	**44**	**59**	**58**
Depreciation and write-ups				
Balance at 1.1.	**-11**	**-14**	**-25**	**-20**
Amortisation	-1	-6	-7	-6
Balance at 31.12.	**-12**	**-20**	**-32**	**-26**
Carrying amounts				
Balance at 31.12.	**3**	**24**	**27**	**32**

54. Intangible assets

Development of intangible assets

				2022	2021
in € million	Software acquired	Internally developed Software	Other intangible assets	Total	Total
Acquisition/production costs					
Balance at 1.1.	**39**	**94**	**11**	**144**	**128**
Additions	1	4	13	18	16
Reclassifications	1	1	-2	-	-
Balance at 31.12.	**41**	**99**	**22**	**162**	**144**
Amortisation and write-ups					
Balance at 1.1.	**-28**	**-74**	**-**	**-102**	**-88**
Amortisation	-3	-8	-	-11	-14
Balance at 31.12.	**-31**	**-82**	**-**	**-113**	**-102**
Carrying amounts					
Balance at 31.12.	**10**	**17**	**22**	**49**	**42**

Research and development expenditure recognised as an expense amounted to €19 million (2021: €14 million).

55. Repurchase agreements

As a pledgor of genuine repurchase agreements, pbb Group has pledged assets with a book value of €2.7billion (31 December 2021: €5.7 billion). The material part of the securities is still recognised as assets. The considerations which have been received amount to €3.2 billion (31 December 2021: €8.3 billion) and are recognised solely as liabilities measured at amortised cost. Assets in repurachse agreements are the only transferable assets the acquirer can sell or repledge in the absence of default.

NOTES TO THE CONSOLIDATED STATEMENT OF FINANCIAL POSITION (EQUITY AND LIABILITIES)

56. Financial liabilities at fair value through profit or loss

Financial liabilities at fair value through profit or loss

in € million	31.12.2022	31.12.2021
Negative fair values of stand-alone derivatives	686	559
Total	**686**	**559**

57. Financial liabilities at amortised cost

Financial liabilities at amortised cost

in € million	31.12.2022	31.12.2021
Liabilities to other banks	7,507	10,633
Liabilities to central banks	2,616	8,279
Registered Mortgage Pfandbriefe	354	349
Registered Public Pfandbriefe	543	502
Other registered securities	192	169
Other liabilities to other banks	3,802	1,334
Liabilities to customers	17,889	20,100
Registered Mortgage Pfandbriefe	3,027	3,682
Registered Public Pfandbriefe	5,869	7,939
Other registered securities	1,838	2,221
Other liabilities to customers	7,155	6,258
Bearer bonds	21,641	21,268
Mortgage Pfandbriefe	11,977	12,291
Public Pfandbriefe	2,043	2,212
Other bearer bonds	7,621	6,765
Subordinated liabilities	635	655
Securitised subordinated liabilities	600	608
Non-securitised subordinated liabilities	35	47
Total	**47,672**	**52,656**

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. The change in TLTRO conditions resulted in a modification loss for financial liabilities in the amount of €21 million, which pbb Group recognises in net other operating income/expenses. pbb Group made use of the additional repayment options to effect early repayment of TLTRO tranches for a total nominal volume of €5.8 billion by the reporting date.

To the extent that certain conditions were met (in particular, the increase in net chargeable netto lendings compared to the benchmark) pbb Group receives an interest rate premium of 50 basis points on nominal volume of TLTRO III for the special interest rate period (24 June 2021 to 23 June 2022). pbb Group recognises this interest rate premium in accordance with IAS 20 as it constitutes a compensation for refinancing costs granted by the ECB in its capacity as a public-sector institution. Therefore, pbb Group recognises the interest rate premium pro rata temporis over the term of the special interest rate period, in accordance with the rules set out in IAS 20. Interest and interest rate premium are granted by the ECB in form of a (pro-rata) waiver of the principal debt. Negative fair values of hedge accounting derivatives

Pbb Group recognized €26 million in interests and €20 million in interest premiums from the TLTRO III in net interest income in the fiscal year. The carrying amount of TLTRO liabilities, reported in line central bank liabilities is €2.6 billion.

58. Negative Fair Value of Hedge Accounting Derivatives

Negative fair values of hedge accounting derivatives

in € million	31.12.2022	31.12.2021
Negative market values of hedge derivatives	1,125	1,372
Total	**1,125**	**1,372**

59. Valuation adjustment from portfolio hedge accounting (liabilities)

The item “Valuation adjustment from portfolio hedge accounting (liabilities)” comprises negative fair values as regards the hedged risks in the hedged portfolios of hedged items. They totalled €-112 million as at 31 December 2022 (31 December 2021: €70 million).

60. Provisions

Provisions

in € million	31.12.2022	31.12.2021
Provisions for pensions and other post employment defined benefit obligations	39	109
Restructuring provisions	1	1
Provisions for off-balance-sheet lending business	13	16
Other provisions	82	105
Total	**135**	**231**

There are defined contribution and defined benefit plans for the employees of pbb Group. In the defined contribution plans pbb makes payments for commitments by industry-wide organisations. In almost all non-German entities, a defined percentage of fixed salary is paid into externally managed pension funds for employees as part of defined contribution pension schemes. Expenses in respect of defined contribution plans amounted €4 million (2021: €4 million). The expense is expected to remain stable in 2023. Expenses in respect of defined contribution plans for persons with a key function in the pbb Group, amounted to less than €1 million (2021: less than €1 million). The employer’s contribution to the statutory pension insurance amounted to €5 million (2021: €5 million).

There are defined benefit pension commitments for many employees in Germany. There are no defined benefit pension commitments in the non-German entities. For the defined benefit plans the employees receive a direct commitment from their respective company. The receipt of retirement pensions or disability pensions starts after a vesting period is fulfilled, at the earliest after reaching a minimum age in the case of part of full incapacity for work, at the latest when goind into retirment, usually after completion of the 65th year of life. In case of active employees, there are predominatnly modern modular pension plans. For the other eligible persons there are also final salarybased defined benefit plans. The annual pension module depends, among other things, on the gross annual salary paid and the member's length of service. The surviving dependant's pension usually amounts to 60% of the pension of the spouse respectively the entitlement on that. The pension plan is administered by pbb itelf with the aid of an external service provider for the administration.

Pension provisions are recognised for obligations arising from direct commitments. The defined benefit plans have been principally closed for new entrants since 1 April 2004. There have been no plan amendments, curtailments and settlements in the years 2022 and 2021.

The risk of insolvency is covered within the framework of legal requirements by Pensionssicherungsverein a. G. in relation to the total amount of pension obligations.

The following actuarial assumptions were used to measure the defined benefit pension obligations:

Actuarial assumptions

in %	31.12.2022/ 1.1.2023	31.12.2021/ 1.1.2022
Discount rate	4.20	1.31
Rate of increase in pension obligations	2.50	1.50
Rate of increase in future compensation and vested rights[1)]	2.50	2.50

[1)] pbb Group expects a rate of increase in future compensation and vested rights of 0% for the active Management Board members in the financial years 2022 and 2021.

The rate of increase in career for members of the Management Board amounts 0.0% (31 December 2021: 0.0%), for directors and non-pay-scale staff 1.5% (31 December 2021: 1.5%) and for payscale staff 0.5% (31 December 2021: 0.5%). The guidance tables 2018G from Klaus Heubeck were used as the biometric basis.

The defined benefit pension commitments of pbb do not contain any unusual or entity-specific risks. pbb is faced by the common demographic risks, for example from longevity or invalidity of the entitled employees, and common financial risks like for example a change of the discount rate. pbb took out reinsurance to protect itself against parts of these risks. The reinsurance is a qualifying insurance policy in accordance with IAS 19 and thus is a plan asset. The fair value of plan assets is a component of the net liability from defined benefit plans which is deducted from the present value of the defined benefit obligation. The reinsurance does not consist of any unusual or plan-specific risks.

Principally, the pension payments of the reinsured pension obligations are funded by the income from the plan assets. If the income does not cover the pension payments pbb has to pay the pensions out of its own funds. For the non-reinsured pension obligations the payments are also made out of own funds.

Statement of financial position items (net defined benefit liability)

in € million	31.12.2022	31.12.2021
Present value of defined benefit obligation	214	286
Fair value of plan assets	-175	-177
Total	**39**	**109**

Development of net defined benefit liability

in € million	2022	2021
Balance at 1.1.	**109**	**127**
Pension expenses	6	5
Remeasurements	-69	-16
Reclassifications in reimbursements	-	-2
Direct payments to beneficiaries	-7	-5
Balance at 31.12.	**39**	**109**

Development of defined benefit obligation

in € million	2022	2021
Balance at 1.1.	**286**	**306**
Current service costs	4	4
Interest expenses	4	3
Remeasurements	-67	-14
Actuarial gains/losses from demographic assumptions	-	-
Actuarial gains/losses from financial assumptions	-70	-13
Actuarial gains/losses from experience assumptions	3	-1
Payments to beneficiaries	-13	-13
Balance at 31.12.	**214**	**286**

Plan assets consist exclusively of reinsurance pledged to plan beneficiaries. The plan assets accordingly do not contain any own financial instruments or any own used tangible assets. No further material contributions to the plan assets are aimed in 2023. pbb does not use special asset-liability matching strategies to manage the pledged reinsurance.

Development of fair value of plan assets

in € million	2022	2021
Balance at 1.1.	**177**	**179**
Interest income	2	2
Remeasurements	2	2
Payments to beneficiaries	-6	-8
Reclassifications in/from reimbursements	-	2
Balance at 31.12.	**175**	**177**

Development of pension expenses

in € million	2022	2021
Service costs	4	4
Current service costs	4	4
Net interest expenses	2	1
Interest expenses on defined benefit obligation	4	3
Interest income on plan assets	-2	-2
Total	**6**	**5**

Compared to 2023 a slightly lower pension expense is expected for 2022. Pension expenses are part of general and administrative expenses.

Remeasurements of the net defined benefit liability result from actuarial gains and losses and the return on plan assets excluding amounts included in net interest on the net defined benefit liability.

Remeasurement recognised in other comprehensive income (equity)

in € million	2022	2021
Actuarial gains/losses from demographic assumptions	-	-
Actuarial gains/losses from financial assumptions	70	13
Actuarial gains/losses from experience assumptions	-3	1
Remeasurements from plan assets	2	2
Total	**69**	**16**

Development of reimbursement

in € million	2022	2021
Balance at 1.1.	**1**	**3**
Additions	-	-
Disposals	-	-2
Balance at 31.12.	**1**	**1**

The reimbursements result from unpledged reinsurance policies.

The quantitative sensitivity analysis – which uses the same measurement methods as the obligation recognised in the statement of financial position – for the material actuarial assumptions is as follows:

Actuarial assumptions

in € million	Change of sensitivity level (+ increase/- decrease)		Gross obligation 31.12.2022	Gross obligation 31.12.2021
Basic value of the calculation of sensitivity			214	286
Discount rate	in percentage points	+ 0.5	202	267
	in percentage points	- 0.5	227	309
Rate of increase in pension obligations	in percentage points	+ 0.5	224	303
	in percentage points	- 0.5	204	271
Rate of increase in future compensation and vested rights	in percentage points	+ 0.5	214	287
	in percentage points	- 0.5	213	286

The assumption of mortality only has an immaterial effect because the risk of longevity is mainly covered by plan assets.

The weighted average duration of the defined benefit obligations amounted to 12 years at 31 December 2022 (31 December 2021: 14 years).

Development of restructuring provisions and other provisions

in € million	**Restructuring provisions**	**Other provisions**
Balance at 1.1.2021	**1**	**101**
Additions	-	35
Reversals	-	-11
Amounts used	-	-20
Balance at 31.12.2021	**1**	**105**
Balance at 1.1.2022	**1**	**105**
Additions	-	24
Reversals	-	-26
Amounts used	-	-17
Other	-	-4
Balance at 31.12.2022	**1**	**82**

The restructuring provisions are expected to have been fully used by the end of 2023.

Provisions in off-balance sheet lending business primarily comprise provisions for guarantee risks, letters of credit, irrevocable loan commitments and litigation risks. The development of these provisions is presented in in detail in the Note “Financial assets at amortised cost after credit loss allowances (including claims from finance lease agreements)”.

The provisions for obligations from share-based payment transactions, reported as part of other provisions, are described in the Note “Related parties disclosures”.

Other provisions comprise those for legal and tax risks of €18 million (31 December 2021: € 38 million), and for legal expenses of €20 million (31 December 2021: € 18 million).

Legal Risks (Litigation Risks)
Given the nature of business and international expansion of activities and the large number of relevant requirements and regulations, pbb is involved in litigation, arbitration and administrative proceedings in some countries. pbb recognises provisions for the uncertain obligations arising from these proceedings if the potential outflow of resources is sufficiently likely and the amount of the obligation can be estimated. The probability of outflow of resources, which often cannot be estimated with certainty, is highly dependent on the outcome of the proceedings. The assessment of this probability and the quantification of the obligation are largely based on estimates. The actual liability can vary considerably from this estimate. Accounting for the individual legal procedure, pbb analyses developments of the individual case as well as of comparable cases. Depending on the significance and complexity of the respective case, pbb is drawing on its own expertise or opinions by external consultants and in particular by legal advisors. The provisions recognised for the proceedings are not reported separately as pbb believes that the outcome of the proceedings would be seriously compromised by their disclosure.

The profit participation certificates issued by the predecessor institutions participated in significant losses due to the net losses for the period incurred in the years 2008 et. seq. respectively pbb’s unappropriated retained losses since this time. The redemption amounts have reduced and interest payment has been suspended. Individual investors therefore initiated legal proceedings, contesting in particular various individual clauses relating to loss participation and replenishment following loss participation. The key questions in this connection are which balance sheet items must be taken into account to calculate loss participation and whether replenishment is required if pbb records a net income, unappropriated retained earnings or another income. Courts have decided against the legal opinion of pbb in view of the individual decisions regarding profit participation certificates. These proceedings resulted in a partial or comprehensive increase in redemption claims, or in the subsequent distribution of cancelled coupon payments or interest payment claims. There are no legal proceedings pending here.

Hypo Real Estate Bank International AG, a predecessor institution of pbb, issued Credit Linked Notes (“CLNs”) in 2007, within the scope of the Estate UK-3 (“UK-3”) synthetic securitisation transaction. The CLNs were issued in order to hedge the credit risk exposure of a real estate loan portfolio in the UK. The real estate loan portfolio subsequently suffered a loan default. pbb envisaged allocating a resulting loss of GBP 113.8 million to the credit linked notes. Deloitte GmbH Wirtschafts-prüfungsgesellschaft, acted as the trustee of UK-3, expressed doubts with respect to the permissibility of the loss allocation. In June 2017, the trustee therefore appointed an independent expert to determine whether the conditions for a loss allocation were met. On 28 June 2019, the independent expert informed pbb Group on its findings. It found the allocation of the full amount of a credit loss of GBP 113.8 million permissible. According to the terms of the CLN, the determination of the expert is final and binding – except in the absence of manifest error. On 13 September 2019, the trustee confirmed that he had reviewed the expert's report and found no apparent inaccuracy. Accordingly, the trustee has informed pbb that in his opinion the intended loss allocation is permissible. The loss allocation was made on 20 September 2019 and results in a corresponding reduction of the repayment claim under the CLN. On 20 March 2020 the CLN have been repaid (Scheduled Final Maturity).

Moreover, no proceedings exist for which the Management Board believes the probability of an outflow of resources – or another impact on pbb Group's business activities – to be likely (or which are of material significance to pbb Group for other reasons) with an provision requirement in excess of €5 million. However, pbb is subject to prudential proceedings, which bear the risk of a material outflow of resources, or another impact on pbb Group's business activities.

61. Other liabilities

Other liabilites include lease liabilites of €22 million. (31 December 2021: of €25 million).

62. Maturities of specific financial assets and liabilities

Maturities of specific financial assets and liabilities (without derivatives and without finance lease)

in € million	repayable on demand/ unspecified	up to 3 months	more than 3 months up to 1 year	more than 1 year up to 5 years	more than 5 years	31.12.2022 Total
Cash reserve	1,044	-	-	-	-	1,044
Financial assets at fair value through profit or loss	2	6	4	178	323	513
Debt securities	-	-	-	80	37	117
Loans and advances to customers	-	6	4	98	286	394
Shares in investment funds qualified as debt instruments	2	-	-	-	-	2
Financial assets at fair value through other comprehensive income	-	122	394	840	336	1,692
Debt securities	-	20	362	720	307	1,409
Loans and advances to customers	-	102	32	120	29	283
Financial assets at amortised cost before credit loss allowances	1,013	2,419	10,506	20,210	14,831	48,979
Debt securities	-	175	825	1,979	2,398	5,377
Loans and advances to other banks	976	248	3,996	250	293	5,763
Loans and advances to customers	37	1,996	5,685	17,981	12,140	37,839
Total financial assets	**2,059**	**2,547**	**10,904**	**21,228**	**15,490**	**52,228**
Financial liabilities at amortised cost	1,928	6,175	6,701	20,956	11,912	47,672
Liabilities to other banks	355	2,875	1,940	1,780	557	7,507
Thereof: registered securities	-	15	52	594	428	1,089
Liabilities to customers	1,536	803	2,847	4,439	8,264	17,889
Thereof:registered securities	-	267	310	2,238	7,920	10,735
Bearer bonds	37	2,469	1,894	14,163	3,078	21,641
Subordinated liabilities	-	28	20	574	13	635
Total financial liabilities	**1,928**	**6,175**	**6,701**	**20,956**	**11,912**	**47,672**

Maturities of specific financial assets and liabilities (without derivatives and without finance lease)

in € million	repayable on demand/ unspecified	up to 3 months	more than 3 months up to 1 year	more than 1 year up to 5 years	more than 5 years	31.12.2021 Total
Cash reserve	6,607	-	-	-	-	6,607
Financial assets at fair value through profit or loss	3	5	6	288	338	640
Debt securities	-	-	-	88	44	132
Loans and advances to customers	-	5	6	200	294	505
Shares in investment funds qualified as debt instruments	3	-	-	-	-	3
Financial assets at fair value through other comprehensive income	-	22	16	665	555	1,258
Debt securities	-	16	10	397	520	943
Loans and advances to customers	-	6	6	268	35	315
Financial assets at amortised cost before credit loss allowances	1,121	2,982	5,747	18,577	19,822	48,249
Debt securities	-	182	813	1,696	4,202	6,893
Loans and advances to other banks	1,061	1,034	-	249	302	2,646
Loans and advances to customers	60	1,766	4,934	16,632	15,318	38,710
Total of financial assets	**7,731**	**3,009**	**5,769**	**19,530**	**20,715**	**56,754**
Financial liabilities at amortised cost	1,785	3,278	5,089	26,187	16,317	52,656
Liabilities to other banks	649	23	345	8,962	654	10,633
Thereof: registered securities	-	12	79	490	439	1,020
Liabilities to customers	1,097	1,024	2,711	4,529	10,739	20,100
Thereof: registered securities	-	383	502	2,621	10,337	13,843
Bearer bonds	39	2,194	2,033	12,597	4,405	21,268
Subordinated liabilities	-	37	-	99	519	655
Total of financial liabilities	**1,785**	**3,278**	**5,089**	**26,187**	**16,317**	**52,656**

63. Equity

Share capital equals the maximum liability of the shareholder for the liabilities of the corporation to its creditors. The share capital as of 31 December 2022 and during the entire financial year 2022 amounted to €380,376,059.67 which is divided into 134,475,308 ordinary bearer shares with no par value representing a theoretical interest in the share capital of approximately €2.83 per share. In the fiscal years 2022 and 2021, pbb did not hold any treasury shares.

Please refer to the disclosures pursuant to section 315a (1) HGB included in the “Supplemental Information” section of the Combined Management Report for information on authorised and contingent capital.

Additional paid-in capital includes contributions from a previous financial year as well as premiums from the issue of shares; except for an amount of €25,383,131.91 (31 December 2021: €25,383,131.91) the additional paid-in capital is freely available pursuant to section 272 (2) no. 4 HGB. Retained earnings were generally created only from net income of the current financial year or previous periods including the current consoliated profit.

The development of equity was positively impacted in particular by the after-tax result of €187 million and the lower actuarial losses from pension obligations. The latter decreased by €62 million, mainly because the discount rate used for measurement increased significantly in line with market interest rate developments (31 December 2022: 4.20%; 31 December 2021: 1.31%). The pension dynamic used for the valuation was increased in line with the increased long-term inflation expectation (31 December 2022: 2.50%; 31 December 2021: 1.50%). Accumulated other comprehensive income from financial assets at fair value through other comprehensive income decreased by €75 million compared with the end of the previous year due to interest rate and credit-induced effects.

The additional equity instruments include Additional Tier 1 (AT1) capital in the total nominal amount of €300 million less transaction costs of €2 million. AT1 capital qualifies as equity because there is no obligation to repay, or to make debt servicing payments on an ongoing basis. The bond issued by pbb in 2018 carries an initial coupon of 5.75% and has no final maturity. There are certain conditions attached to the coupon payments. The coupon on the AT1-capital of €17 million payed in April 2022 reduced retained earnings and is disclosed separately in the statement of changes in equity.

Caisse des Dépôts et Consignation's (CDC) stake in CAPVERIANT GmbH resulted in non-controlling interest income of €4 million as at the date of acquisition in the year 2021, with a positive effect of €1 million to be recognised directly in retained earnings.

Pursuant to a resolution adopted by the Annual General Meeting on 19 May 2022, pbb paid a dividend of €1.18 per share entitled to dividends (€159 million) to its shareholders.

Dividends

	2022	2021
Dividends recognized as distributions to owners in € per share	1.18	0.58
Dividends proposed or declared but not recognized as distributions to owners prior to approval of the financial statements for publication, in € million	128	159
Dividends proposed or declared but not recognized as distributions to owners prior to approval of the financial statements for issue, in € per share	0.95	1.18

64. Trust Business

As at 31 December 2022 and 31 December 2021, there were no trust assets or liabilities reported in the statement of financial position.

NOTES TO THE CONSOLIDATED STATEMENT OF CASH FLOWS

65. Disclosures to the items in the consolidated statement of cash flows

The consolidated statement of cash flows shows the cash flows of the financial year broken down by operating activities, investing activities and financing activities. Cash and cash equivalents correspond to the balance sheet item cash reserve, and include cash in hand and credit balances at central banks.

Operating activities are defined broadly, and correspond to operating result. Cash flow from operating activities includes payments (inflows and outflows) attributable financial assets at fair value through profit or loss/positive fair values of hedging derivatives, financial assets at fair value through other comprehensive income, financial assets at amortised cost and other assets. Inflows and outflows attributable to financial liabilities measured at fair value through profit or loss/negative fair values from hedging derivatives, liabilities measured at amortised cost (without inflows/outflows from subordinated liabilities) and other liabilities are also included under operating activities. The interest and dividend payments resulting from operating activities are shown under cash flow from operating activities. This also relates to cash flows frum subordinated liabilities. In addition, payments for the interest portion of lease liabilities as well as short-term lease contracts with a maturity of less than 12 months are part of the cash flow from operating activities.

Cash flow from investing activities comprises payments for investment and security holdings as well as for tangible and intangible assets.

Cash flow from financing activities comprises inflows from capital increases, payments into reserves and silent participations, inflows and outflows for subordinated capital as well as payments for the amortisation part of lease liabilities.

Liabilities development from financing activities

in € million	2022	2021
Subordinated liabilities		
Balance at 1.1.	**655**	**686**
changes from financing cash flows	-20	-28
Other changes	-	-3
Balance at 31.12.	**635**	**655**

NOTES TO DERIVATIVE TRANSACTIONS AND HEDGED ITEMS IN HEDGE ACCOUNTING

Risks are the possibilities to deviate from the planned future targets resulting from unpredictability of the future and disruptions. Interest rate risks and foreign exchange risks are primarily relevant for pbb Group. These arise from open positions for example in the case of mismatches of maturities or the variability respectively fixing of interest rates. Interest rate risks and in to a lesser extent foreign exchange risks are accounted in hedge accounting. Other risks of the hedged items like for example credit risk are not accounted in hedge accounting but are controlled bank wide.

Generally pbb Group hedges interest rate risks. However, in individual cases this may not be possible or sensible. The hedge ratio is determined in relation to the expectation for example of the interest rate development or the costs of hedging. If the risk is not hedged completely for example because the interest rate of the underlying asset does not match completely with the interest rate of the hedging instrument hedge ineffectiveness may arise. A further source of ineffectiveness may be different credit risks of the counterparties of the hedged item and hedging instrument.

Hedging relationships between financial instruments are classified as a fair value hedge, a cash flow hedge or hedge of a net investment in a foreign operation in accordance with IAS 39. Hedging instruments used to hedge interest rate risks are mainly interest rate derivatives, for example interest rate swaps and interest rate options.

Specific disclosures required by IFRS 7 are shown in the risk and opportunity report, amongst others about credit risk, market risk and liquidity risk.

Fair Value Hedge Accounting Under IAS 39, with a fair value hedge, a recognised asset, a recognised liability, offbalance-sheet fixed obligation or a precisely designated part of such an asset, liability or obligation, is hedged against the risk of a change in fair value which is attributable to a specific risk and possibly has an effect on profit or loss for the period.

If the hedge of the fair value in the course of the reporting period meets the criteria of IAS 39.88, the hedge is accounted as follows:

- The profit or loss arising when the hedging instrument is remeasured at fair value (for a derivative hedging instrument) or the currency component of its carrying amount measured in accor-dance with IAS 21 (for non-derivative hedging instruments) is recognised in profit or loss for the period and
- The carrying amount of a hedged item is adjusted affecting profit or loss by the profit or loss arising from the hedged item and attributable to the hedged risks. This is applicable if the hedged item is otherwise measured at cost. The profit or loss attributable to the hedged risk is recognised in profit or loss for the period if the hedged item is an a financial asset measured at fair value through other comprehensive income. The amortisation of the hedge adjustment is started on the date of the revoking of the hedge relationship.

pbb Group uses fair value hedge accounting for accounting micro-hedge and macro-hedge relationships.

Interest rate risks are hedged under micro fair value hedge accounting. Any ineffectiveness within the permissible range pursuant to IAS 39 is reported under net income from hedging relationships. Positive and negative market values of hedging instruments are reported at fair value in positive fair value of hedge accounting derivatives or negative fair values of hedge accounting derivatives, respectively. The adjustment of the hedged item's carrying amount by the profit or loss attributable to the hedged risk directly affects the hedged item. The retrospective effectiveness test is conducted using the regression analysis. The dollar-offset method is used to quantify prospective ineffectiveness. If the hedge relationship is terminated for reasons other than the derecognition of the hedged item, the difference between the carrying amount of the hedged item at that point and the value at which it would have been carried, had the hedge never existed (the unamortised fair value adjustment), is amortised through profit or loss over the remaining term of the original hedge and recognised in net interest income. If the hedged item is derecognised, e. g. due to disposal or repayment, the unamortised fair value adjustment is recognised immediately in profit or loss.

In the context of portfolio hedge accounting within the meaning of IAS 39, interest rate risks from loans and advances as well as from liabilities are hedged on a portfolio basis. The portfolio hedge accounting is aimed to account the effects from the macro interest steering for hedged positions. The fair values as regards the hedged risks in the hedged cash flows of the portfolios of hedged items are reported either on the assets or on the liabilities side as valuation adjustments from portfolio hedge accounting. The changes in the fair value of hedged risks from the portfolios of hedged items are recognised in net income from hedging relationships. The market values of hedging instruments are recognised in statement of financial position at fair value in positive fair values of hedge accounting derivatives or negative fair values of hedge accounting derivatives, respectively. The changes in value are shown in net income from hedging relationships, thus largely compensating the effect on profit or loss from the valuation of the cash flows from the portfolios of hedged items. The cash flows from the portfolios of hedged items are determined monthly within the framework of a dynamic hedge designation and discontinuation process. The resulting valuation adjustments are amortised over the remaining term of the time band and recognised in net interest income. In case of a derecognition of cash flows of hedged items from the portfolio of hedged items, the associated valuation adjustment is reversed on a pro-rata basis and recognised in net income from realisations.

Beginning in 2022, embedded floors for credit transactions have been designated as part of portfolio hedge accounting in accordance with IAS 39. In deviation from the above general procedure for portfolio hedge accounting, one-time designation is used rather than recurring designation. Amortisation of fair value adjustments is applied in the event of early termination over the remaining term to maturity.

Cashflow Hedge Accounting According to IAS 39, a cash flow hedge is a hedge of the exposure to variability in cash flows that is attributable to a particular risk associated with the recognised asset or liability (for instance some or all future interest payments on variable-interest debt) or a highly probable forecast transaction that could affect profit or loss.

Under cash flow hedge accounting, hedging instruments are measured at fair value. The measurement result has to be broken down into an effective and an ineffective portion of the hedge relationship. As at 31 December 2022, and 31 December 2021, pbb Group did not designate any derivatives to cash flow hedges. The cash flow hedge reserve remaining from designations will be reversed in line with the hedged cash flows from underlying transactions. pbb applies a prospective effectiveness test every quarter. In case ineffectiveness is discovered, the cash flow hedge reserve is reversed through profit or loss.

66. Derivative transactions

In order to minimize (reduce) both the economic and the regulatory credit risk, bilateral netting agreements have been concluded. By means of such netting agreements, the positive and negative fair values of the derivatives contracts included under the master agreement can be offset against one another, and the future regulatory risk add-ons for these products can be reduced. Through this netting process, the credit risk is limited to a single net claim on the party to the contract.

For both regulatory reports and the internal measurement and monitoring of the credit commitments, such risk-reducing techniques are utilised only if they are considered to be enforceable under the respective legal system in the event that the business associate becomes insolvent. Legal advice is taken in order to check enforceability.

Similar to the master agreements, pbb Group concludes collateral agreements with its business associates to collateralise the net claim or liability remaining after netting (obtained or pledged collateral). Usually, this colalteral management (by depositing cash collateral) reduces credit risk by means of prompt measurement and adjustment of the exposure to the customers.

Volume of derivatives 31 December 2022				Nominal amount	Fair value/carrying amount		
	Remaining maturities						Fair value
in € million	up to 1 year	more than 1 to 5 years	more than 5 years	**Total**	positive	negative	change for effectiveness calculation
Stand-alone derivatives [1]	**7,332**	**9,191**	**857**	**17,380**	**562**	**686**	
Interest rate derivatives	3,472	8,603	857	12,932	484	679	
OTC derivatives	3,472	8,603	857	12,932	484	679	
Interest rate swaps	1,493	3,772	815	6,080	354	549	
Interest rate options	1,979	4,831	42	6,852	130	130	
Currency derivatives	3,475	-	-	3,475	56	3	
OTC derivatives	3,475	-	-	3,475	56	3	
Forward currency transactions	3,475	-	-	3,475	56	3	
Other derivatives	385	588	-	973	22	4	
Cross currency basis swaps	385	588	-	973	22	4	
Derivatives in fair value hedge accounting [2)3)]	**6,924**	**17,417**	**21,086**	**45,427**	**262**	**1,125**	**-614**
Interest rate derivatives	6,924	17,392	20,771	45,087	217	1,125	-639
OTC derivatives	6,924	17,392	20,771	45,087	217	1,125	-639
Interest rate swaps	6,612	16,685	19,802	43,099	217	1,117	-664
Interest rate options	312	707	969	1,988	-	8	25
Other derivatives	-	25	315	340	45	-	25
Cross currency basis swaps	-	25	315	340	45	-	25

1) In statement of financial position disclosed under “Financial assets at fair value through profit or loss” respectively “Financial liabilities at fair value through profit or loss”.

2) In statement of financial position disclosed under “Positive fair values of hedge accounting derivatives” respectively “Negative fair values of hedge accounting derivatives”.

3) Including exposure to Eurex Clearing AG after netting of derivatives and cash collateral, regardless of their use. Netting with Eurex derivatives in the amount of €10.6 billion led to a reclassification from stand-alone derivatives to the derivatives under fair value hedge accounting.

Volume of derivatives 31 December 2021				Nominal amount	Fair value/carrying amount		
	Remaining maturities						Fair value
in € million	up to 1 year	more than 1 to 5 years	more than 5 years	Total	positive	negative	change for effectiveness calculation
Stand-alone derivatives [1]	**6,696**	**8,485**	**1,680**	**16,861**	**540**	**559**	
Interest rate derivatives	3,480	8,127	1,680	13,287	534	525	
OTC derivatives	3,480	8,127	1,680	13,287	534	525	
Interest rate swaps	763	4,148	1,535	6,446	524	514	
Interest rate options	2,717	3,979	145	6,841	10	11	
Currency derivatives	2,779	-	-	2,779	4	22	
OTC derivatives	2,779	-	-	2,779	4	22	
Forward currency transactions	2,779	-	-	2,779	4	22	
Other derivatives	437	358	-	795	2	12	
Cross currency basis swaps	437	358	-	795	2	12	
Derivatives in fair value hedge accounting [2)3)]	**7,092**	**15,617**	**21,832**	**44,541**	**1,009**	**1,372**	**-84**
Interest rate derivatives	7,092	15,607	21,503	44,202	1,006	1,360	-96
OTC derivatives	7,092	15,607	21,503	44,202	1,006	1,360	-96
Interest rate swaps	6,259	15,138	20,474	41,871	1,006	1,322	-112
Interest rate options	833	469	1,029	2,331	-	38	16
Other derivatives	-	10	329	339	3	12	12
Cross currency basis swaps	-	10	329	339	3	12	12

1) In statement of financial position disclosed under “Financial assets at fair value through profit or loss” respectively “Financial liabilities at fair value through profit or loss”.

2) In statement of financial position disclosed under “Positive fair values of hedge accounting derivatives” respectively “Negative fair values of hedge accounting derivatives”.

3) Including exposure to Eurex Clearing AG after netting of derivatives and cash collateral, regardless of their use. Netting with Eurex derivatives in the amount of €9.7 billion led to a reclassification from stand-alone derivatives to the derivatives under fair value hedge accounting.

The fair value change for the effectiveness test of derivatives in portfolio hedge accounting that were netted against Eurex AG amounted to €-94 million in 2022 and resulted from interest rate derivatives/interest rate swaps (2021: €-19 million from interest rate derivatives/interest rate swaps).

Counterparties	**31.12.2022**		**31.12.2021**	
	Fair value		Fair value	
in € million	positiv	negativ	positiv	negativ
Central governments and central banks of OECD member states	1	-	8	–
OECD banks	817	1,442	1,471	1,826
OECD financial institutions	3	40	40	82
Other companies and private individuals	3	329	30	23
Total	**824**	**1,811**	**1,549**	**1,931**

The reserve for cash flow hedge accounting, where derivatives were no longer designated in the financial years 2022 and 2021, amounted to €-26 million (31 December 2021: €-28 million) after deferred taxes. In 2022, €2 million (2021: €–6 million) before taxes was reclassified from the cash flow hedge reserve to net interest income.

67. Hedged items under Hedge Accounting

Hedged items under Hedge Accounting 31 December 2022	Micro fair value hedge				Potfolio hedge	
		thereof:				
in € million	Carrying amount	hedge adjustment included in carrying amount	hedge adjustment remaining after discontinuation of hedging relationship	Value change for the effectiveness test in the period	Valuation adjustment	Change for effectiveness calculation in reporting period
Financial assets at fair value through other comprehensive income	388	-8	25	-46	-	-
Interest related hedge accounting	388	-8	25	-46	-	-
Financial assets at amortised cost	11,816	-727	997	-2,439	-84	-98
Interest related hedge accounting	11,564	-717	997	-2,412	-84	-98
Currency related hedge accounting	252	-10	-	-27	-	-
Financial liabilities measured at amortised cost	22,000	-1,580	624	3,101	-112	190
Interest related hedge accounting	22,000	-1,580	624	3,101	-112	190

Hedged items under Hedge Accounting 31 December 2021	Micro fair value hedge				Potfolio hedge	
		thereof:				
in € million	Carrying amount	hedge adjustment included in carrying amount	hedge adjustment remaining after discontinuation of hedging relationship	Value change for the effectiveness test in the period	Valuation adjustment	Change for effectiveness calculation in reporting period
Financial assets at fair value through other comprehensive income	459	37	32	-18	-	-
Interest related hedge accounting	459	37	32	-18	-	-
Financial assets at amortised cost	15,518	1,704	1,146	-800	5	-18
Interest related hedge accounting	15,223	1,687	1,146	-788	5	-18
Currency related hedge accounting	295	17	-	-12	-	-
Financial liabilities measured at amortised cost	22,342	1,526	741	903	70	36
Interest related hedge accounting	22,342	1,526	741	903	70	36

The item “Valuation adjustment from portfolio hedge accounting (assets)” comprises fair values as regards the hedged risks in the hedged cash flows from the portfolios of hedged items (assets). The item “Valuation adjustment from portfolio hedge accounting (liabilities)” comprises fair values as regards the hedged risks in the hedged cash flows from the portfolios of hedged items (liabilities).

Ineffectiveness of the hedge [1)]

in € million	2022	2021
Result from micro fair value hedge accounting (interest rate risk)	2	1
Result from portfolio hedge accounting (interest rate risk)	-2	-1
Total	**-**	**-**

[1)] Reported in net income from hedge accounting.

IBOR-Reform

Interbank offered rates (IBOR) are used as reference rates when determining the prices of numerous financial instruments and calculating the related cash flows. Given the weaknesses of interbank rates used to date, which became evident for the first time as part of the LIBOR scandal, legislators and regulatory authorities worldwide have been working on establishing a system of transaction-based risk-free reference interest rates or to reform the determination of the reference interest rates. In the EU, the EU Benchmark Regulation (EU BMR), which has been in force since 1 January 2018, provides the legal foundation for this matter. Specifically, IBOR rates have been replaced by alternative reference rates – especially by risk-free overnight interest rates based on actual transactions, determined as an average rate for overnight interbank deposits (borrowings) or for deposits from large customers. For example alternative reference interest rates – based on the risk-free overnight interest rates €STR, SONIA, SOFR and SARON – have been established in the EUR, GBP, USD and CHF currency areas.

To meet challenges resulting from the replacement of existing IBOR reference rates, pbb Group launched a cross-divisional project for implementation of the IBOR reform already back in 2018. The project team regularly reports to pbb Group’s Management Board. Topics addressed by the project include finding fallback rules for discontinued reference rates, the changeover of LIBOR-based business, introduction of post-IBOR products as well as several operational issues. For instance, all new contracts pbb Group has entered into since 2019 which relate to a reference interest rate affected by the IBOR reform include a fallback provision that facilitates a swift changeover to a substitute reference rate preferred by regulators or established in the market. In some cases, fallback provisions for derivatives and financial liabilities were already agreed upon under framework or individual agreements. Moreover, pbb Group is monitoring the development of alternative reference rates discussed by supervisory authorities and market participants very closely indeed, in order to be able to assess the resulting impact upon pbb Group at an early stage.

In 2020 pbb Group implemented a changeover to the new risk-free interest rates for all products with respect to the fair value discount curves used for discounting, measurement and its risk models. In anticipation of the termination of the GBP-LIBOR publication, the Bank of England introduced deadlines for the changeover to alternative interest rates that market participants have to adhere to. In compliance with these requirements and based on the common recommendation issued by the European Commission, the EBA, the ECB and the ESMA, pbb Group has discontinued new business in GBP-LIBOR as well as in EUR-LIBOR and CHF-LIBOR from the second quarter of 2021 and instead offered an alternative interest rate. In this context, the recommendations as well as the conventions currently emerging on the market were taken into account. Moreover, in the financial year 2021, the transition of the existing LIBOR contracts based on GBP, EUR and CHF to alternative interest rates was conducted. The transition of a small number of contracts has been made early in 2022 prior to the first coupon fixing. The transition from USD LIBOR (which is to be discontinued before the end of the first half of 2023) to alternative interest rates will be executed mainly on the same basis which is used for GBP. Some USD credit transactions were already converted in 2022.

The European Money Markets Institute (EMMI) revised the calculation methodology of the EURIBOR interest rate in 2019 and switched to a hybrid method. EMMI has determined and disseminated the revised EURIBOR reference rates since July 2019. Thanks to the EU-BMR conformity of the revised EURIBOR reference rates, market participants (including pbb Group) are be able to use EURIBOR reference rates until further notice, for both existing and new contracts. pbb Group expects that the EURIBOR interest rate will remain as a reference interest rate for at least the next few years. However, pbb Group is following developments in supervision and the market very closely - for example, the consultation process of the ECB's working group, the Belgian Financial Services and Markets Authority, the European Securities and Markets Authority (ESMA), and the European Commission as regards alternative interest rates. Risk-free overnight interest rates are now also published for the Scandinavian currencies (for example SWESTR for SEK, NOWA for NOK). However, existing IBOR reference rates (for example STIBOR) will continue to be used in the market for the foreseeable future.

As a result of the IBOR reform, there are various new developments with regard to the reference rates used. In this regard, pbb continuously monitors the market and prepares for these developments (e.g. CME term SOFR, SOFR index, €STR-based term rates).

The IASB has launched a two-phase project to address the potential impact of IBOR reform on financial reporting. Phase 1 of the project was concluded in September 2019, with the publication of an announcement. Communicated amendments to IFRS 9, IAS 39 and IFRS 7 grant a temporary exemption from applying specific hedge-accounting requirements on hedges directly affected by the IBOR reform. pbb Group plans to continue applying the IASB's phase 1 announcement until uncertainty concerning the timing and amount of underlying cash flows, as a result of the IBOR reform and the expected replacement of the various reference rates, has been removed.

Phase 2 of the IASB's IBOR reform project was completed on 27 August 2020, upon the publication of "Interest Rate Benchmark Reform – Phase 2, Amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16". In particular, the amendments provide practical expedients in relation to changes that are required by the IBOR reform. Moreover, recognised hedging relationships (hedge accounting) may generally be continued despite a replacement of the reference interest rate. pbb Group expects that, as a result of the application of the amendments, the Group may continue to recognise or designate the existing recognised hedging relationships in relation to the interest rate risk – even in case of a replacement of existing reference interest rates. These changes did not have material effects on the consolidated financial statments in 2022 as well as in 2021.

As of reporting day, derivatives in hedging relationships in relation to interest rate risks (micro- and macro fair value hedge) were designated with following reference rates:

Notional volume of hedged items as of 31 December 2022

in € million	Maturities: up to 1 year	more than 1 year up to 5 years	more than 5 years	Total
EURIBOR (currency EUR)	1,768	6,212	15,692	23,672
LIBOR (currency USD)	102	142	257	501
STIBOR (currency SEK)	221	553	-	774
€STR (currency EUR)	750	3,415	1,441	5,606
SOFR (currency USD)	-	2,146	368	2,514
SONIA (currency GBP)	-	568	196	764
SARON (currency CHF)	237	210	-	447

Notional volume of hedged items as of 31 December 2021

in € million	Maturities: up to 1 year	more than 1 year up to 5 years	more than 5 years	Total
EURIBOR (currency EUR)	3,312	7,756	17,552	28,620
LIBOR (currency USD)	574	274	253	1,101
STIBOR (currency SEK)	398	804	-	1,202
€STR (currency EUR)	51	5	741	797
SONIA (currency GBP)	298	83	311	692
SARON (currency CHF)	-	368	115	483
SOFR (currency USD)	-	1,428	19	1,447

The above tables also includes EURIBOR derivatives for the sake of completeness. pbb Group assumes that, due to their EU-BMR compliance, the EURIBOR interest rates will remain as reference rates until further notice. The above hedging instruments approximately reflect the interest rate risk managed by means of hedges.

OTHER NOTES TO THE FINANCIAL INTRUMENTS

68. Undiscounted cash flows of financial liabilities

Contractually agreed undiscounted cash flows of the financial liabilities according to IFRS 7.39

in € billion	31.12.2022	31.12.2021
Up to 3 months	6	4
From derivative financial instruments	-	-
From non-derivative financial instruments	6	4
More than 3 months to 1 year	8	6
From derivative financial instruments	-	-
From non-derivative financial instruments	8	6
More than 1year to 5 years	24	29
From derivative financial instruments	1	1
From non-derivative financial instruments	23	28
More than 5 years	16	18
From derivative financial instruments	1	1
From non-derivative financial instruments	15	17
Total	**54**	**57**

The undiscounted cash flows are presented in accordance with the contractually maturity, meaning that options or termination rights are not taken into account. This presentation does not reflect the economic management which is based on expected cash flows. The liquidity risk strategy and management is described in the Risk and Opportunity Report.

69. Assets assigned or pledged as collateral

Assets (without cash collaterals) have been pledged as collateral for the following liabilities and received collaterals:

Liabilities

in € million	31.12.2022	31.12.2021
Financial liabilities measured at amortised cost	3,518	8,564
Total	**3,518**	**8,564**

The following assets were pledged as collateral for the aforementioned liabilities:

Assets pledged

in € million	31.12.2022	31.12.2021
Financial assets at fair value through other comprehensive income	1,285	818
Financial assets at amortised cost	1,736	5,141
Total	**3,021**	**5,959**

The assets pledged mainly resulted from repurchase agreements. The transactions were carried out at the normal standard terms for repurchase transactions and concluded on an arm's-length basis.

In addition, cash collateral was provided in a total amount of €42 million (31 December 2021: €36 million) for the irrevocable payment obligations to the German Federal Agency for Financial Market Stabilisation (Finanzmarktstabilisierungsanstalt – "FMSA") resulting from the bank levy, and to the deposit guarantee scheme of German banks.

70. Collaterals permitted to resell or repledge

As of 31 December 2022 and as of 31 December 2021 there were no collaterals that may be resold or repledged in the absence of default.

71. Transfer of financial assets

When pbb Group transfers financial assets that do not qualify for derecognition (see also Note "Financial Instruments"), they continue to be reported in the statement of financial position.

Transfer of financial assets as of 31 December 2022

in € million	Transferred financial assets that are not derecognised in their entirety			
	Transferred assets		Corresponding liabilities	
	Carrying amounts	thereof: Repo transactions	**Carrying amounts**	thereof: Repo transactions
Financial assets at fair value through other comprehensive income	1,284	1,284	1,245	1,245
Debt securities	1,144	1,144	1,118	1,118
Loans and advances to other banks	140	140	127	127
Financial assets at amortised cost	1,722	1,409	1,610	1,299
Debt securities	1,409	1,409	1,299	1,299
Loans and advances to customers	313	-	311	-
Total	**3,006**	**2,693**	**2,855**	**2,544**

Transfer of financial assets as of 31 December 2021

in € million	Transferred financial assets that are not derecognised in their entirety			
	Transferred assets		Corresponding liabilities	
	Carrying amounts	thereof: Repo transactions	**Carrying amounts**	thereof: Repo transactions
Financial assets at fair value through other comprehensive income	818	818	769	769
Debt securities	670	670	630	630
Loans and advances to other banks	148	148	139	139
Financial assets at amortised cost	5,141	4,857	4,850	4,565
Debt securities	4,857	4,857	4,565	4,565
Loans and advances to customers	284	-	285	-
Total	**5,959**	**5,675**	**5,619**	**5,334**

At balance sheet date the fair value of financial assets at amortised cost amounted to €1,661 million (31 December 2021: €5,252 million). The fair value of the corresponding liabilities amounted to €1,559 million (31 December 2021: €4,910 million). The net position from the fair values of assets and liabilities amounted to €102 million (31 December 2021: €342 million). pbb Group does not derecognise these financial assets, since not substantially all risks (in particular credit risk) and rewards of ownership are transferred.

In addition, securities with a carrying amount of €200 million (31 December 2021: €170 million) were transferred to Eurex as a collateral for clearing fund contribution and initial margin for derivative transactions.

pbb Group generally has no countinuing involvement in transferred and derecognised financial assets.

72. Fair values of financial instruments

The fair value of financial instruments, in the opinion of pbb Group, is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction in the principal (or most advantageous) market at the measurement date under current market conditions (exit price). The fair values were determined as of the balance sheet date based on the market information available and on valuation methods described here.

All financial assets and liabilities that are measured at fair value are grouped into the three fair value hierarchies by pbb Group. Reclassifications within the fair value hierarchy are made at the end of the reporting period. The three-level hierarchy is based on the degree to which the input for the fair value measurement is observable:

> Level 1 – quoted priced (unadjusted) in active markets for identical financial assets or financial liabilities (market prices)
> Level 2 – inputs that are observable either directly or indirectly, other than quoted prices included within Level 1
> Level 3 – valuation techniques that include inputs that are not based on observable market data (unobservable inputs)

Fair values and fair value hierarchy of financial instruments

					31.12.2022
					Fair value
in € million	Carrying amount	Fair value	Level 1	Level 2	Level 3
Assets in the scope of IFRS 13	**52,722**	**51,549**	**5,941**	**15,532**	**30,076**
Measured at fair value in the statement of financial position	3,029	3,029	1,397	1,360	272
Financial assets at fair value through profit or loss	1,075	1,075	2	817	256
Positive fair values of stand-alone derivatives	562	562	-	562	-
Debt securities	117	117	-	117	-
Loans and advances to customers	394	394	-	138	256
Shares in investment funds qualified as debt instruments	2	2	2	-	-
Financial assets at fair value through other comprehensive income	1,692	1,692	1,395	281	16
Debt securities	1,409	1,409	1,395	-	14
Loans and advances to customers	283	283	-	281	2
Positive fair values of hedge accounting derivatives	262	262	-	262	-
Not measured at fair value in the statement of financial position	49,693	48,520	4,544	14,172	29,804
Cash reserve	1,044	1,044	1,044	-	-
Financial assets at amortised cost[1)]	48,733	47,476	3,500	14,172	29,804
Debt securities	5,376	5,260	2,518	2,198	544
Loans and advances to other banks	5,763	5,741	945	3,524	1,272
Loans and advances to customers	37,452	36,328	37	8,303	27,988
Claims from finance lease arrangements	142	147	-	147	-
Valuation adjustment from porfolio hedge accounting (assets)	-84	-	-	-	-
Liabilities in the scope of IFRS 13	**49,371**	**47,793**	**16,575**	**19,547**	**11,671**
Measured at fair value in the statement of financial position	1,811	1,811	-	1,811	-
Financial liabilities at fair value through profit or loss	686	686	-	686	-
Negative fair values of stand-alone derivatives	686	686	-	686	-
Negative fair values of hedge accounting derivatives	1,125	1,125	-	1,125	-
Not measured at fair value in the statement of financial position	47,560	45,982	16,575	17,736	11,671
Financial liabilities measured at amortised cost	47,672	45,982	16,575	17,736	11,671
Liabilities to other banks	7,507	7,406	355	4,197	2,854
Liabilities to customers	17,889	17,308	1	9,567	7,740
Bearer bonds	21,641	20,707	15,952	3,781	974
Subordinated liabilities	635	561	267	191	103
Valuation adjustment from porfolio hedge accounting (liabilities)	-112	-	-	-	-

1) Less credit loss allowances.

Fair values and fair value hierarchy of financial instruments

in € million	Carrying amount	Fair value	Level 1	Level 2	Level 3
					31.12.2021
					Fair Value
Assets in the scope of IFRS 13	**58,146**	**59,208**	**11,724**	**18,308**	**29,176**
Measured at fair value in the statement of financial position	3,447	3,447	919	2,154	374
Financial assets at fair value through profit or loss	1,180	1,180	3	831	346
Positive fair values of stand-alone derivatives	540	540	-	540	-
Debt securities	132	132	-	132	-
Loans and advances to customers	505	505	-	159	346
Shares in investment funds qualified as debt instruments	3	3	3	-	-
Financial assets at fair value through other comprehensive income	1,258	1,258	916	314	28
Debt securities	943	943	916	-	27
Loans and advances to customers	315	315	-	314	1
Positive fair values of hedge accounting derivatives	1,009	1,009	-	1,009	-
Not measured at fair value in the statement of financial position	54,699	55,761	10,805	16,154	28,802
Cash reserve	6,607	6,607	6,607	-	-
Financial assets at amortised cost[1)]	48,087	49,154	4,198	16,154	28,802
Debt securities	6,890	6,989	3,143	3,065	781
Loans and advances to other banks	2,646	2,664	994	1,603	67
Loans and advances to customers	38,371	39,313	61	11,298	27,954
Claims from finance lease agreements	180	188	-	188	-
Valuation adjustment from porfolio hedge accounting (assets)	5	-	-	-	-
Liabilities in the scope of IFRS 13	**54,657**	**55,468**	**18,291**	**20,010**	**17,167**
Measured at fair value in the statement of financial position	1,931	1,931	-	1,931	-
Financial liabilities at fair value through profit or loss	559	559	-	559	-
Negative fair values of stand-alone derivatives	559	559	-	559	-
Negative fair values of hedge accounting derivatives	1,372	1,372	-	1,372	-
Not measured at fair value in the statement of financial position	52,726	53,537	18,291	18,079	17,167
Financial liabilities measured at amortised cost	52,656	53,537	18,291	18,079	17,167
Liabilities to other banks	10,633	10,673	649	1,321	8,703
Liabilities to customers	20,100	20,708	15	12,683	8,010
Bearer bonds	21,268	21,474	17,154	4,010	310
Subordinated liabilities	655	682	473	65	144
Valuation adjustment from porfolio hedge accounting (liabilities)	70	-	-	-	-

1) Less credit loss allowances.

According to the general principles of IFRS 13 concerning fair value measurement techniques, an entity shall, in all cases, maximise the use of relevant observable inputs and minimise the use of unobservable inputs. All financial assets and liabilities measured at fair value are assigned to one level of the fair value hierarchy, depending on the respective inputs used.

Disclosures to the measurement methods and input parameters

Measurement Process Both the Finance and the Risk Management & Control divisions play a role in the measurement process. The Finance division supplies accounting data. This includes:

> identification data, such as business identification numbers or International Securities Identification Numbers (ISINs)
> static data such as notional amounts, name and country of the counterparty and (remaining) terms
> accounting data such as carrying amounts, accruals and the effects of hedge accounting

Risk Management & Control calculates additional data used to measure fair value such as interest rates, credit spreads and market prices, as well as internal ratings and LGDs for certain financial instruments.).

Risk Management & Control uses the determined input parameters to calculate (and provide to Finance) the fair value or measurement price of financial instruments based on accepted and validated measurement methods. Finance consolidates the data received from Risk Management & Control with the data held for accounting and reporting purposes, and verifies completeness.

Level 2 instruments measured at fair value as of 31 December 2022

Measurement methods	Observable parameter
DCF methods	Euro zone inflation rates
(discounted cash flow)	Reference interest rates
	Saisonalities of Euro zone inflation rates
	Spot market exchange rates
	Yield curves
Option pricing models	Cap volatilities
	CMS spread options (strike price)
	CMS spread options (option price)
	Euro zone inflation rates
	Reference interest rates
	Saisonalities of Euro zone inflation rates
	Swaption volatilities
	Spot market exchange rates
	Exchange rates volatilities
	Yield curves

Level 3 instruments measured at fair value as of 31 December 2022

Measurement methods	Non-observable parameters	Observable parameter
DCF methods	PD/LGD model spread	+/-2 rating levels for PD; +/-0,1 for LGD
Proxy model	Proxy models	+/- triple standard deviation

Financial instruments not measured at fair falue as of 31 December 2022

Measurement methods	Observable parameter (level 2)	Non-observable parameter (level 3)
DCF-Methoden	(Own) credit spreads and Liqui-AddOns, if necessary	Internal rating classes
	Reference interest rates	Recovery rates
	Risk-free interest rate	Estimated remaining maturities
	Observable future cash flows	Estimated future cash flows
	Benchmark interest rates	(Own) credit spreads (secondary market grid)
Bachelier cap-floor model (for floored plain vanilla floater)	Additional cap volatilities including smile	Additional cap volatilities including smile
Bachelier cap-floor model (for fixed coupons options)	Additional swaption volatilities including smile	Additional cap volatilities including smile
Prices on non-active markets	Prices of proxy trades	-

Sensitivities

The calculation of sensitivity is based on shock scenarios for correlations and volatilities pursuant to the level 3 measurement methods table. These amounts were calculated independently from each other.

Non-observable spreads in a PD (probability of default)/LGD (loss given default) model are used for the valuation of intended syndication transactions. The application of alternative spreads results in a change in fair value of €+1 million and €–3 million, respectively.

Alongside this, FVOCI securities and FVOCI receivables are measured using a proxy approach. The alternative scenario shows an only minor fair value change (+/- <€1 million).

Changes in level 3 instruments measured at fair value

in € million	Financial assets at fair value through profit or loss	Financial assets at fair value through other comprehensive income	Financial liabilities at fair value through profit or loss
Balance at 1.1.2021	**327**	**58**	**12**
Profit or loss	-43	-14	-
Additions (new business)	222	-	-
Disposals/repayments	-160	-16	-12
Balance at 31.12.2021	**346**	**28**	**-**
Balance at 1.1.2022	**346**	**28**	**-**
Profit or loss	-21	-8	-
Additions (new business)	153	-	-
Disposals/repayments	-222	-4	-
Balance at 31.12.2022	**256**	**16**	**-**

73. Contractual Modifications

The amortised cost of financial assets of stage 2 and 3 impairments where the contractual cash flows have not changed to a significant extent amounted to €991 million prior to modification (31 December 2021: €1,267 million). This resulted in a net modification gain/loss of €0 million in 2022 and 2021. These modifications involved forbearance measures on the part of the pbb Group, primarily in the form of deferrals.

As at 31 December 2022, financial assets with a gross carrying amount of €40 million were held (31 December 2021: €0 million) which were subject to non-substantial modifications in the year under review during their allocation to stage 2 impairments and, independent of their modification, were transferred to stage 1 given their lower risk of default. No stage 3 financial assets were transferred to stage 1 impairments in 2022 and 2021 following a non-substantial modification.

74. Netting of financial instruments

The following tables show the gross carrying amounts of recognised financial assets respectively liabilities, the gross carrying amounts of the items offset in the statement of financial position and the net amounts of the financial assets and liabilities recognised in the statement of financial position. They also show the rights of set-off that did not lead to an offsetting in the statement of financial position, the collateral received for financial assets, the collateral pledged for financial liabilities and the net amounts of financial assets and liabilities remaining following the application of the netting agreements and deduction of the collateral.

Gross carrying amounts of the items offset in the statement of financial position
On-balance sheet netting of derivatives which are settled through Eurex Clearing led to a reduction in total assets of €1.7 billion as at 31 December 2021 (31 December 2021: 2.7 billion).

Netting agreements

In order to minimise the legal risk as well as the economic and regulatory counterparty default risk, standardised bilateral netting agreements in the derivatives business are concluded. The national respectively international agreements used are the German, the French and the Spanish Master Agreement for Financial Futures and the ISDA Master Agreement issued by the International Swaps and Derivatives Association. The derivatives cannot be offset in the statement of financial position since their conditions are not identical (e. g. different terms or currency underlyings).

Collateral

In addition, pbb Group also enters into collateral agreements to hedge the net receivables and net liabilities arising following offsetting according to the netting agreements (collateral received or pledged). The collateral used is primarily cash collateral; however, securities are sometimes also used by way of title transfer.

Netting of financial instruments as of 31.12.2022

in € billion	Gross carrying amounts of recognised financial assets/liabilities	Gross carrying amounts of the items offset in the statement of financial position	Net amounts presented in the statement of financial position	Rights of set-off that did not lead to an offsetting in the statement of financial position	Received respectively pledged collateral	Remaining net amount
Financial assets	**2.5**	**1.7**	**0.8**	**0.5**	**0.3**	**-**
Positive fair values of derivatives	2.5	1.7	0.8	0.5	0.3	-
Financial liabilities	**3.5**	**1.7**	**1.8**	**0.5**	**1.3**	**-**
Negative fair values of derivatives	3.5	1.7	1.8	0.5	1.3	-

Netting of financial instruments as of 31.12.2021

in € billion	Gross carrying amounts of recognised financial assets/liabilities	Gross carrying amounts of the items offset in the statement of financial position	Net amounts presented in the statement of financial position	Rights of set-off that did not lead to an offsetting in the statement of financial position	Received respectively pledged collateral	Remaining net amount
Financial assets	**4.2**	**2.7**	**1.5**	**0.8**	**0.6**	**0.1**
Positive fair values of derivatives	4.2	2.7	1.5	0.8	0.6	0.1
Financial liabilities	**4.6**	**2.7**	**1.9**	**0.8**	**1.1**	**-**
Negative fair values of derivatives	4.6	2.7	1.9	0.8	1.1	-

OTHER NOTES

75. Contingent liabilities and other commitments

Irrevocable loan commitments form the largest part of other commitments. Irrevocable loan commitments comprise all commitments of a creditor which can grant a loan and advance at a later date and which can cause a credit risk. These are mainly credit commitments which are not fully drawn.

Contingent liabilities and other commitments represent the maximum default risk within the meaning of IFRS 7. pbb Group has a claim for reimbursement of expenses in case a contingent liability is utilised.

Contingent liabilities and other commitments

in € million	31.12.2022	31.12.2021
Contingent liabilities	**70**	**185**
Guarantees and warranties	70	185
Other commitments	**2,999**	**3,116**
Irrevocable loan commitments	2,999	3,116
Commitments from bank levies	**42**	**36**
Collateral pledged[1)]	42	36
Total	**3,111**	**3,337**

1) Cash collateral was provided for the irrevocable payment obligations to the German Federal Agency for Financial Market Stabilisation (Finanzmarktstabilisierungsanstalt – "FMSA") resulting from the bank levy, and to the deposit guarantee scheme of German banks. Pbb Group is also obliged to make additional payments for the bank levy if requested.

As at balance sheet date the fair value of contingent liabilities amounted to €70 million (31 December 2021: €185 million) and the fair value of irrevocable loan commitments to €2,947 million (31 December 2021: €3,119 million).

There were no material contingent receivables as at 31 December 2022 and 31 December 2021.

76. Leases

Operate lease as a lessee

As a lessee, pbb Group currently exclusively recognises right-of-use assets referring to land and buildings used in line with IFRS 16. pbb Group entered all of its rental contracts on an arm's length basis. Some of these contracts contain renewal options potentially extending the lease term for several periods, price adjustment provisions in the form of stepped rents or index clauses, as well as early termination provisions. Regarding lease extension options, and early termination options, pbb Group took what is presently considered the most likely scenario into consideration. pbb Group measured lease liabilities at the corresponding lease payments, which were discounted with the incremental borrowing rate applicable to the respective liability. pbb Group has not made use of rent concessions that would have been granted as a result of the COVID-19 pandemic.

IFRS 16 provides options to exclude leases with a lease term of 12 months or less, as well as low-value assets (defined with a threshold value of €5,000 at pbb Group) from the scope of application. pbb Group has applied these options: expenses for this kind of leases were recognised through profit or loss on a straight-line basis over the contractual term of the underlying asset. Such expenses were disclosed as other operating expenses, or administrative expenses if the payments referred to rental expenses for business premises.

pbb Group discloses right-of-use assets in 'tangible assets' (see 'tangible assets' note), while lease liabilities are disclosed under 'other liabilities' (see 'other liabilities' note). Depreciation of right-of-use assets is recognised in the note on 'net income from write-downs and write-ups of non-financial assets' (see respective note). Immaterial interest expenses resulting from lease liabilities are disclosed in 'net interest income'.

For further information on the depreciation, additions or other adjustments made to right-of-use assets, please refer to the statement of changes in tangible assets as disclosed in the "tangible assets" note.

Contractual maturities of undiscounted cash flows from lease liabilities

in € million	31.12.2022	31.12.2021
up to 1 year	5	5
more than 1 year to 5 years	13	15
more than 5 years	4	6
Total	**22**	**26**

Lease in the income statement

in € million	2022	2021
Depreciation	6	5
Interest expense	-	-
Short term leases, less than 12 month	1	1
Total	**7**	**6**

Lease in the statement of cash flows

in € million	2022	2021
Payments for short term leases, less than 12 month (Cash flow from operating activities)	-	-
Interest portion of lease liabilities payments (Cash flow from operating activities)	-	-
Repaymens portion of lease liabilities payments (Cash flow from financing activities)	5	5
Total	**5**	**5**

Finance lease as a lessor

The finance lease receivables due from the lessee are broken down in the following tables by gross and net investment value and by the corresponding maturities.

in € million	31.12.2022	31.12.2021
Gross investment	**158**	**199**
Unearned finance income	-16	-19
Net investment/present value of minimum lease payments	**142**	**180**

Allocation by maturities

in € million	31.12.2022	31.12.2021
Gross investment	**158**	**199**
up to 1 year	16	16
more than 1 year to 2 years	16	16
more than 2 years to 3 years	17	16
more than 3 years to 4 years	17	17
more than 4 years to 5 years	17	17
more than 5 years	75	117
Present value of minimum lease payments	**142**	**180**
up to 1 year	13	13
more than 1 year to 2 years	14	13
more than 2 years to 3 years	14	14
more than 3 years to 4 years	15	14
more than 4 years to 5 years	15	15
more than 5 years	71	111

pbb Group’s finance leases refer to the financing structure for an office building.

In the financial year under review and the previous financial year, no any sale-and-leaseback transactions or third-party sublease agreements were entered into.

77. Key regulatory capital ratios

The Management Board manages the Group's capitalisation, based on regulatory capital ratios in accordance with the CRR and additional regulations announced by the ECB (Supervisory Review and Evaluation Process – "SREP").

Please refer to Risk and Opportunity Report for capitalisation management as well as for key regulatory capital ratios.

78. Group auditor's fee

Group auditor's fee

in € thousand	2022	2021
Audit services	1,756	1,820
Other assurance services	319	289
Tax advisory services	-	-
Other non-audit services	100	82
Total	**2,175**	**2,191**

The auditors' fee for Deloitte GmbH Wirtschaftsprüfungsgesellschaft primarily referred to the audit of the consolidated financial statements and the single-entity annual financial statements, including legal and contractually agreed extensions of the audit assignment of pbb as well as the audit of the financial statements of a subsidiary. Interim financial statements were reviewed in addition.

Other assurance services mainly concerned the preparation of two letters of comfort in connection with bond issues, the review of scenario calculations in risk provisioning for the financing of office properties, the review of the combined non-financial report, and the review of the notification of eligible loans for the TLTRO III.

Other non-audit services mainly comprised an advisory support in document management which is unrelated to the introduction or implementation of internal control and risk management procedures.

79. Related parties disclosures

According to IAS 24 (Related-Party Disclosures), a party is related to an entity if, directly or indirectly through one or more intermediaries, the party controls or is controlled by the reporting entity, has an interest in the entity that gives it significant influence over the entity or has joint control over the entity as well as associates and joint ventures. In addition, retirement benefit schemes for postemployment benefits for employees are also included under related parties.

Related Entities

At the reporting date, pbb Group had receivables to associates not accounted for using the equity method in the amount of €11 million (31 December 2021: €13 million); as in the previous year, there were no liabilities.

On 31 December 2022 liabilities to defined contribution plans amounted to less than €1 million (31 December 2021: €1 million).

Management in key positions

Management in key positions are persons who are directly or indirectly responsible for planning, directing and controlling the activities of pbb Group; for pbb Group, this means the members of the Management Board and the Supervisory Board.

Total remuneration of former members of the Management Board and their surviving dependants amounted to €4,758 thousand for 2022 (2021: €4,709 thousand). Remuneration for Supervisory Board members in office during the year under review totalled €683 thousand (2021: €740 thousand) during the year under review. This comprised exclusively fixed remuneration (including remuneration for memberships in Supervisory Board committees).

Vested remuneration claims of related persons[1)]

	2022						2021
in € thousand	Short-term benefits	Post-employment benefits	Other long-term benefits	Termination benefits	Share-based payments	Total	Total
Total	**4,159**	**2,460**	**319**	**-**	**833**	**7,771**	**8,257**

[1)] Reporting follows the "vesting principle", disclosing those remuneration components which were vested during the relevant 2022 reporting period.

Pension obligations to related persons

in € thousand	31.12.2022	31.12.2021
Total[1)]	**63,967**	**81,250**

[1)] Including €52,781 thousand (2021: €58,199 thousand) for pensioners and their surviving dependants.

Disclosure pursuant to section 314 no. 6 of the HGB, by groups of individuals

Remuneration paid to Management Board members

	2022[1)]	
in € thousand	Remuneration	Total
Management Board members who were in office during the financial year 2022	3,247	3,247
Management Board members who retired prior to the financial year 2022	-	-
Total	**3,247**	**3,247**

[1)] Remuneration paid to Management Board members who were in office during the financial year 2021 amounted to €3,142 thousand. Management Board members who retired prior the financial year 2021 did not receive any remuneration in 2021.

As of the balance sheet date, there were no receivables to related persons from loans or advances or other commitments.

Provisions for pensions

	2022[1)]	
in € thousand	Additions/ reversals	Total
Management Board members who were in office during the financial year 2022	-3,783	10,862
Management Board members who retired prior to the financial year 2022	-13,223	52,781
Total	**-17,006**	**63,643**

[1)] Provisions for pensions for Management Board members who were in office during the financial year 2021 amounted to €14,645 thousand. Provisions for pensions to Management Board members who were retired prior the financial year 2021 amounted to €66,004 thousand as of 31 December 2021.

Remuneration paid to Supervisory Board members of pbb

in € thousand	2022[2)] Total fixed remuneration
Supervisory Board members who were in office during the financial year 2022	683
Supervisory Board members who retired prior to the financial year 2022	-
Total	**683**

[1)] Remunerations based on employment contracts that employee representatives of the Supervisory Board receive additionally to their function in the Supervisory Board are not shown.
[2)] Remuneration paid to Supervisory Board members who were in office during the financial year 2021 amounted to €740 thousand in the year 2021. Supervisory Board members who retired prior the financial year 2021 did not receive any remuneration in 2021.

Except for employee representatives to the Supervisory Board, who are remunerated by pbb under their individual employment contracts, the members of pbb's Supervisory Board did not receive any remuneration for personal services during 2022.

Statement according to article 19 MMV

According to pbb's knowledge, the members of the Management Board and the Supervisory Board as well as persons closely related to these members did not hold any shares of the Company in a reportable extent as at 31 December 2022 and as at 31 December 2021. In the years 2021 and 2020, according to pbb's knowledge, no pbb shares or financial instruments relating to such shares in a reportable extend were acquired or sold by members of the Management Board and the Supervisory Board or by persons closely related to such members.

Amount of cash-settled share-based payment transactions

The total amount of outstanding virtual shares in relation to the share-based payment arrangements developed as follows:

Amount of cash-settled share-based payment transactions

Quantity (number)	2022	2021
Balance (outstanding) at 1.1.	314,773	263,845
granted during the reporting period	176,337	141,777
expired during the reporting period	-	-
exercised during the reporting period	123,349	90,849
Balance (outstanding) at 31.12.	367,761	314,773
of which: exercisable	-	-

The fair value of the virtual shares granted during the reporting period amounted to €1 million (2021: €1 million) as at the balance sheet date. The obligation from share-based payment transactions as at 31 December 2021 amounted to €4 million (2021: €6 million). It is reported in the statement of financial position under provisions.

The virtual shares exercised during the reporting year were converted at a weighted average price of the pbb share of €11.11 (2021: €8.35).

The total amount expensed for share-based payment transactions during the financial year 2022 was €2 million (2021: €2 million).

An amount of €0 million (2021: €0 million) was expensed for former members of the Management Board.

80. Employees

Average number of employees

	2022	2021
Employees (excluding apprentices)	826	823
Thereof: senior staff in Germany	19	19
Total	**826**	**823**

81. Members of the Supervisory Board and of the Management Board

Supervisory Board of pbb in financial year 2022

Name **Place of residence** Function in Supervisory Board Initial appointment	**Principal occupation** Functions in the Committees of the Supervisory Board	**Supervisory Board memberships and other directorships in 2021**
Dr. Günther Bräunig Frankfurt/Main, Germany Chairman 14.8.2009	**Consultant and former Chairman of the management board of KfW** Chairman of the Executive and Nomination Committee and of the Remuneration Committee; Chairman (until 19.5.2022) resp.member (from 19.5.2022) of the Audit and Digitalisation Committee; Member of the Risk Management and Liquidity Strategy Committee	**Deutsche Telekom AG, Bonn, Germany** – Member of the Supervisory Board
Hanns-Peter Storr Frankfurt/Main, Germany Member; Deputy Chairman 12.5.2021	**Entrepreneur** Chairman of the Risk Management and Liquidity Strategy Committee Member of the Audit and Digitalisation Committee	**BHW Bausparkasse AG, Hameln, Germany** – Member of the Supervisory Board
Gertraud Dirscherl Landshut Member 02.02.2022	**Entrepreneur** Member (from 25.02.2022) and Chairwoman (from 19.05.2022) of the Audit and Digitalisation Committee; Member of the Remuneration Committee and the Risk Management and Liquidity Strategy Committee (from 25.02.2022)	**Hans DEHN SE, Neumarkt i.d. Oberpfalz –** Member of the Supervisory Board **DEHN SE, Neumarkt i.d. Oberpfalz –** Member of the Supervisory Board
Dr. Thomas Duhnkrack Kronberg/Taunus, Germany Member 21.7.2015	**Entrepreneur** Member of the Audit and Digitalisation Committee and of the Executive and Nomination Committee	**Hauck Aufhäuser Lampe Privatbank AG, Frankfurt/Main, Germany** – Member of the Supervisory Board
Prof. Dr. Kerstin Hennig Schmitten Member 19.07.2022	**University Professor EBS University** Member of the Risk Management and Liquidity Strategy Committee (from 05.08.2022)	**DWS Grundbesitz GmbH, Frankfurt/Main** – Member of the Supervisory Board **DEMIRE Deutsche Mittelstand Real Estate AG, Frankfurt/Main** – Member of the Supervisory Board
Susanne Klöß-Braekler Munich, Germany Member 12.5.2021	**Independent supervisory and advisory board member, Investor, Senior Advisor** Member of the Executive and Nomination Committee and of the Remuneration Committee	**ING-DiBa AG, Frankfurt/Main, Germany** – Chairman of the Supervisory Board **Oddo BHF AG, Frankfurt/Main, Germany** – Member of the Supervisory Board **Cembra Money Bank AG, Zürich, Switzerland** – Member of the Supervisory Board
Georg Kordick Poing, Germany Employee Representative 22.2.1990	**Bank employee**	–
Olaf Neumann Munich, Germany Employee Representative 12.5.2021	**Bank employee**	–
Oliver Puhl Frankfurt/Main, Germany Member (until 19.05.2022) 13.5.2016	**Entrepreneur** Member of the Risk Management and Liquidity Strategy Committee (until 19.05.2022)	–
Heike Theißing Munich, Germany Employee Representative 7.7.2011	**Bank employee** Member of the Remuneration Committee	–

Management Board of pbb in financial year 2022

Name and place of residence	**Function in the Management Board**	**Supervisory Board memberships**
Andreas Arndt Munich	CEO/CFO	-
Thomas Köntgen Frankfurt/Main	Deputy CEO Real Estate Finance Public Investment Finance	-
Andreas Schenk Dreieich	CRO	-
Marcus Schulte Grünwald	Treasury	-

82. Holdings of pbb

Holdings of pbb as of 31 December 31.12.2022

Additional statement according to HGB Name Place of business and country	Purpose of business	Interest in % Total (Sec 16 (4) Aktiengesetz)	Interest in % Of which held indirectly	Differing voting rights in %	Currency	Equity in thousands	Net income/ loss in thousands
Consolidated companies							
CAPVERIANT GmbH [1] Munich, Germany	Marketplace of municipal finance	71.43	-	-	EUR	5,965	-4,673
IMMO Invest Real Estate GmbH [2] Munich, Germany	Purchase of salvage acquisitions	100.00	-	-	EUR	947	-
Associated companies not measured at equity due to minor significance							
SOMA Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Darmstadt KG [1] Dusseldorf, Germany	Model of bank holding	33.33	-	25.00%	EUR	2,269	2,501

[1] Financial figures from the financial year 2021.
[2] Profit transfer by shareholders on the basis of profit and loss transfer agreement.

83. Country-by-Country Reporting

The requirements of Article 89 CRD (Capital Requirements Directive CRD IV) concerning to so-called Country-by-Country Reporting were endorsed in German law by Section 26a KWG (German Banking Act). In financial years 2021 and 2020 no entity respectively no branch of pbb received public subsidies. On 31 December 2022, the ratio of net profit and total balance sheet of pbb Group was 0.4% (31 December 2021: 0.4%). The further figures required by Section 26a KWG are disclosed in the following table:

Country-by-Country Reporting (Additional statement according to Section 26a KWG) as of 31 December 2022

Type of business Name and place of business	Country	Number of employees[1]	Turnover[2) 3)] (in € million)	Income/loss before tax[3] (in € million)	Income taxes[3] (in € million)
Deposit taking credit institution					
Deutsche Pfandbriefbank AG, Munich	Germany	675	495	209	-22
Branch of a deposit taking credit institution					
Deutsche Pfandbriefbank AG, London branch	United Kingdom	40	12	-	-
Deutsche Pfandbriefbank AG, Madrid branch	Spain	9	2	-	-
Deutsche Pfandbriefbank AG, Paris branch	France	31	13	6	1
Deutsche Pfandbriefbank AG, Stockholm branch	Sweden	8	3	-	-
Representative office of a deposit taking credit institution					
Deutsche Pfandbriefbank AG, representative office New York	USA	8	6	2	-5
Provider of ancillary services					
CAPVERIANT GmbH, Munich	Germany	14	-1	-4	-
CAPVERIANT GmbH, representative office Paris	France	6	1	-	-
IMMO Invest Real Estate GmbH, Munich	Germany	-	-	-	-

[1] Full-time equivalents not including apprentices, interns/working students and short-term employees with fixed terms < 1 year.
[2] Operating income as turnover equivalent.
[3] Figures before consolidation.

84. Report on Post-balance Sheet Date Events

The Supervisory Board resolved on 10 January 2023 to nominate Dr Louis Hagen for election to the Supervisory Board at the Annual General Meeting on 25 May 2023 – subject to regulatory approvals. If elected, it is intended that Dr Hagen will take over as Chairman of the Supervisory Board from Dr Günther Bräunig, who will retire from the Supervisory Board upon expiry of his office at the end of the Annual General Meeting.

Munich, 7 March 2023

Deutsche Pfandbriefbank AG
The Management Board

Andreas Arndt   Thomas Köntgen   Andreas Schenk   Marcus Schulte

Responsibility Statement

To the best of our knowledge, and in accordance with the applicable reporting principles, the Consolidated Financial Statements give a true and fair view of the assets, liabilities, financial position and profit or loss of the Group, and the Combined Management Report includes a fair review of the development and performance of the business and the position of the Group, together with a description of the material opportunities and risks associated with the expected development of the Group.

Munich, 7 March 2023

Deutsche Pfandbriefbank AG
The Management Board

Andreas Arndt   Thomas Köntgen   Andreas Schenk   Marcus Schulte

Independent Auditor's Report

To Deutsche Pfandbriefbank AG, Munich/Germany

REPORT ON THE AUDIT OF THE CONSOLIDATED FINANCIAL STATEMENTS AND OF THE COMBINED MANAGE-MENT REPORT

Audit Opinions
We have audited the consolidated financial statements of Deutsche Pfandbriefbank AG, Munich/Germany, and its subsidiaries (the Group) which comprise the consolidated statement of financial position as at 31 December 2022, the consolidated statement of profit and loss, the consolidated statement of other comprehensive income, the consolidated statement of changes in equity and the consolidated statement of cash flows for the financial year from 1 January to 31 December 2022, and the notes to the consolidated financial statements, including a summary of significant accounting policies. In addition, we have audited the combined management report for the parent and the group of Deutsche Pfandbriefbank AG, Munich/Germany, for the financial year from 1 January to 31 December 2022. In accordance with the German legal requirements, we have not audited the sections "Organisation and Principles of Internal Control System" and "Appropriateness and Effectiveness of the Internal Control and Risk Management System" of the combined management report, which are marked as "unaudited", nor the content of the combined corporate governance statement, including the further reporting on corporate governance included therein, nor the combined separate non-financial report, each of which is made reference to in the combined management report.

In our opinion, on the basis of the knowledge obtained in the audit,

- the accompanying consolidated financial statements comply, in all material respects, with the IFRS as adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e (1) German Commercial Code (HGB) and, in compliance with these requirements, give a true and fair view of the assets, liabilities and financial position of the Group as at 31 December 2022 and of its financial performance for the financial year from 1 January to 31 December 2022, and
- the accompanying combined management report as a whole provides an appropriate view of the Group's position. In all material respects, this combined management report is consistent with the consolidated financial statements, complies with German legal requirements and appropriately presents the opportunities and risks of future development. Our audit opinion on the combined management report does not cover the content of the sections "Organisation and Principles of Internal Control System" and "Appropriateness and Effectiveness of the Internal Control and Risk Management System" of the combined management report stated above, nor the content of the combined corporate governance statement stated above, including the further reporting on corporate governance included therein, nor the combined separate non-financial report stated above.

Pursuant to Section 322 (3) sentence 1 HGB, we declare that our audit has not led to any reservations relating to the legal compliance of the consolidated financial statements and of the combined management report.

Basis for the Audit Opinions
We conducted our audit of the consolidated financial statements and of the combined management report in accordance with Section 317 HGB and the EU Audit Regulation (No. 537/2014; referred to subsequently as "EU Audit Regulation") and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (IDW). Our responsibilities under those requirements and principles are further described in the "Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Combined Management Report" section of our auditor's report. We are independent of the group entities in accordance with the requirements of European law and German commercial and professional law, and we have fulfilled our other German professional responsibilities in accordance with these requirements. In addition, in accordance with Article 10 (2) point (f) of the EU Audit Regulation, we declare that we have not provided non-audit services prohibited under Article 5 (1) of the EU Audit Regulation. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions on the consolidated financial statements and on the combined management report.

Key Audit Matters in the Audit of the Consolidated Financial Statements
Key audit matters are those matters that, in our professional judgement, were of most significance in our audit of the consolidated financial statements for the financial year from 1 January to 31 December 2022. These matters were addressed in the context of our audit of the consolidated financial statements as a whole and in forming our audit opinion thereon; we do not provide a separate audit opinion on these matters.

In the following we present the determination of risk provisioning in the lending business, which we have determined to be a key audit matter in the course of our audit.

Our presentation of this key audit matter has been structured as follows:

a) description (including reference to corresponding information in the consolidated financial statements)
b) auditor's response

Determination of risk provisioning in the lending business

a) As at 31 December 2022, a total of bEUR 48.7 in "Financial assets at amortised cost after credit loss allowances" are recognised in the consolidated financial statements of Deutsche Pfandbriefbank AG, which makes up 91.9% of total assets. The existing risk provisioning of mEUR 387 has already been deducted from these assets. Risk provisioning includes both individually determined stage 3 specific allowances of mEUR 211 and stage 1 and 2 credit loss allowances determined using a model-based approach of mEUR 176 that include a management overlay of mEUR 69 on account of the uncertainties regarding the further development of the property class "office property". Additional contingent liabilities and other commitments amount to bEUR 3.1, for which provisions of mEUR 13 have been made in the lending business, which almost fully relate to stage 1 and 2 credit loss allowances determined using a model-based approach.

   The Bank assesses the recoverability of loans and advances in the lending business on a regular basis and whenever there are objective indications that the assets may be impaired. The expected stage 3 credit loss is determined based on individual cash flows in several probability-weighted scenarios. The amount of risk provision equals the difference between the carrying amount of the asset and the present value of the expected future cash flows. The latter is calculated based on the initial effective interest rate. The expected future cash flows take into account the marketability of collaterals such as land charges/mortgages. Where applicable, corresponding provisions are made for off-balance sheet transactions subject to either an imminent risk of utilisation by doubtful borrowers (guarantees, warranties) or to expected impairments due to payment obligations (irrevocable loan commitments).

Upon initial recognition of the loans and advances, the impairments in the lending business are based on expected credit losses for twelve months (stage 1). The 12-month expected credit loss is that part of the lifetime expected credit losses that is equal to the expected credit losses from defaults that may occur statistically 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), the impairment has to reflect the expected default events over the life of the transaction. For determining stage 1 and 2 credit losses, the Bank generally uses a model-based procedure based on the regulatory risk parameters (probability of default, loss given default) and on the rules agreed in the loan agreements underlying the loans and advances, such as contractually agreed cash flows. The regulatory risk parameters are transformed by taking into account forward-looking information. Stage 1 and 2 credit losses are measured using different scenarios weighted by their probability of occurrence.

As at the balance sheet date 31 December 2022, a management overlay of mEUR 69 was added to the stage 1 and 2 credit losses that was determined by taking into account the uncertainty expected by the executive directors of the Bank in the property class "office property" as a consequence of a future expected lower floor demand as well as higher requirements for sustainability of existing office properties in the form of discounts applied to market values as part of a scenario calculation in the forecast parameters. Furthermore, the risk of an interest rate increase was taken into account for this segment. The management overlay of mEUR 54 set up as at 31 December 2021 as a consequence of uncertainties related to the COVID-19 pandemic was fully released in the reporting year.

Given the fact that the lending business is one of the Bank's core business activities and both individual and model-based measurement of loans and advances as well as the determination of the settlement amount of provisions as is necessary according to the impairment rules under IFRS 9 requires the executive directors to make judgements and estimates, for example with respect to the design of the measurement models, estimates such as the expected future payments received, the measurement of collateral or other expected defaults, there is a higher risk that the amount of the credit loss allowances, if necessary, may not be appropriate. This matter was of particular relevance as part of our audit since the recoverability of loans and advances in the lending business and, in correspondence with that, the appropriate determination of allowances is prone to uncertainties.

The disclosures on the determination of allowances in the lending business can be found in the notes to the consolidated financial statements in note 7 "Financial Instruments", subsection "Impairment", in note 29 "Judgements and Estimations", subsection "Allowances", as well as in note 50 "Financial Assets at Amortised Cost after Credit Loss Allowances (Including Claims from Finance Lease Agreements)", subsection "Development in risk provisioning"".

b) Based on our risk assessment, our risk-based audit approach involved an examination of the relevant system of internal control and the performance of substantive procedures. The test of design and implementation and of operating effectiveness comprised the controls with respect to the processes for identifying indications for impairment (risk early recognition process), customer ratings as well as cash flow-based determination of impairment (stage 3 credit losses). Moreover, we conducted a test of design and implementation and of operating effectiveness of the controls with respect to the determination of stages 1 and 2 credit losses.

   In addition, we conducted an evaluation of the appropriate identification of indications for impairment based on individual cases selected according to risk aspects, as well as of the measurement of loans and advances for which the Bank considered it necessary to carry out an impairment test, including the acceptability of the estimated values. Within the scope of this evaluation, we particularly reviewed those methods, assumptions and data used by the client for determining the estimated values. With respect to the measurement of loans and advances, we reviewed the underlying assumptions, especially the amount and timing as well as the discounting of expected future payments received in the different scenarios as well.

   Furthermore, we traced the stage 1 and 2 credit losses determined based on a representative sample and evaluated the methodology for deriving the management overlay and the appropriateness of the underlying assumptions, especially with respect to the identified property classes, the discounts applied to market values as well as the assumptions on which the interest rate increase is based, on the estimated values. In this context, our evaluation also took into account industry reports and research results from real estate market observation. Likewise, we reconstructed the calculation of the management overlay.

   For the purpose of assessing the determination of stage 1 and 2 credit losses and of the management overlay and assessing the measurement of collateral, we called in our internal specialists.

   In addition, we audited the accuracy and completeness of the disclosures made in the notes to the consolidated financial statements.

Other Information
The executive directors and/or the supervisory board are responsible for the other information. The other information comprises

- the report of the supervisory board,
- the combined corporate governance statement pursuant to Section 289f and Section 315d HGB including the further reporting on corporate governance included therein, to which reference is made in the combined management report,
- the combined separate non-financial report pursuant to Sections 315b and 315c HGB in conjunction with Sections 289b to 289e HGB, to which reference is made in the combined management report and which is published together with the combined management report,
- the executive directors' confirmation regarding the consolidated financial statements and the combined management report pursuant to Section 297 (2) sentence 4 and Section 315 (1) sentence 5 HGB
- the unaudited content of the combined management report marked as "unaudited", and
- all other parts of the annual report,
- but not the consolidated financial statements, not the audited content of the combined management report and not our auditor's report thereon

The supervisory board is responsible for the report of the supervisory board. The executive directors and the supervisory board are responsible for the statement according to Section 161 German Stock Corporation Act (AktG) concerning the German Corporate Governance Code, which is part of the combined corporate governance statement. Otherwise the executive directors are responsible for the other information.

Our audit opinions on the consolidated financial statements and on the combined management report do not cover the other information, and consequently we do not express an audit opinion or any other form of assurance conclusion thereon.

In connection with our audit, our responsibility is to read the other information identified above and, in doing so, to consider whether the other information

> is materially inconsistent with the consolidated financial statements, with the audited content of the combined management report or our knowledge obtained in the audit, or
> otherwise appears to be materially misstated.

Responsibilities of the Executive Directors and the Supervisory Board for the Consolidated Financial Statements and the Combined Management Report
The executive directors are responsible for the preparation of the consolidated financial statements that comply, in all material respects, with IFRS as adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e (1) HGB, and that the consolidated financial statements, in compliance with these requirements, give a true and fair view of the assets, liabilities, financial position and financial performance of the Group. In addition, the executive directors are responsible for such internal control as they have determined necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud (i.e., fraudulent financial reporting and misappropriation of assets) or error.

In preparing the consolidated financial statements, the executive directors are responsible for assessing the Group's ability to continue as a going concern. They also have the responsibility for disclosing, as applicable, matters related to going concern. In addition, they are responsible for financial reporting based on the going concern basis of accounting unless there is an intention to liquidate the Group or to cease operations, or there is no realistic alternative but to do so.

Furthermore, the executive directors are responsible for the preparation of the combined management report that as a whole provides an appropriate view of the Group's position and is, in all material respects, consistent with the consolidated financial statements, complies with German legal requirements, and appropriately presents the opportunities and risks of future development. In addition, the executive directors are responsible for such arrangements and measures (systems) as they have considered necessary to enable the preparation of a combined management report that is in accordance with the applicable German legal requirements, and to be able to provide sufficient appropriate evidence for the assertions in the combined management report.

The supervisory board is responsible for overseeing the Group's financial reporting process for the preparation of the consolidated financial statements and of the combined management report.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Combined Management Report

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and whether the combined management report as a whole provides an appropriate view of the Group's position and, in all material respects, is consistent with the consolidated financial statements and the knowledge obtained in the audit, complies with the German legal requirements and appropriately presents the opportunities and risks of future development, as well as to issue an auditor's report that includes our audit opinions on the consolidated financial statements and on the combined management report.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Section 317 HGB and the EU Audit Regulation and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (IDW) will always detect a material misstatement. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements and this combined management report.

We exercise professional judgement and maintain professional scepticism throughout the audit. We also

> identify and assess the risks of material misstatement of the consolidated financial statements and of the combined management report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our audit opinions. The risk of not detecting a material misstatement resulting from fraud is higher than the risk of not detecting a material misstatement resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal controls.

> obtain an understanding of internal control relevant to the audit of the consolidated financial statements and of arrangements and measures relevant to the audit of the combined management report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an audit opinion on the effectiveness of these systems.

> evaluate the appropriateness of accounting policies used by the executive directors and the reasonableness of estimates made by the executive directors and related disclosures.

> conclude on the appropriateness of the executive directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in the auditor's report to the related disclosures in the consolidated financial statements and in the combined management report or, if such disclosures are inadequate, to modify our respective audit opinions. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to be able to continue as a going concern.

> evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements present the underlying transactions and events in a manner that the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and financial performance of the Group in compliance with IFRS as adopted by the EU and with the additional requirements of German commercial law pursuant to Section 315e (1) HGB.

- obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express audit opinions on the consolidated financial statements and on the combined management report. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinions.
- evaluate the consistency of the combined management report with the consolidated financial statements, its conformity with German law, and the view of the Group's position it provides.
- perform audit procedures on the prospective information presented by the executive directors in the combined management report. On the basis of sufficient appropriate audit evidence we evaluate, in particular, the significant assumptions used by the executive directors as a basis for the prospective information, and evaluate the proper derivation of the prospective information from these assumptions. We do not express a separate audit opinion on the prospective information and on the assumptions used as a basis. There is a substantial unavoidable risk that future events will differ materially from the prospective information.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We provide those charged with governance with a statement that we have complied with the relevant independence requirements, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, the actions taken or safeguards applied to eliminate independence threats.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements for the current period and are therefore the key audit matters. We describe these matters in the auditor's report unless law or regulation precludes public disclosure about the matter.

OTHER LEGAL AND REGULATORY REQUIREMENTS

Report on the Audit of the Electronic Reproductions of the Consolidated Financial Statements and of the Combined Management Report Prepared for Publication Pursuant to Section 317 (3a) HGB

Audit Opinion

We have performed an audit in accordance with Section 317 (3a) HGB to obtain reasonable assurance whether the electronic reproductions of the consolidated financial statements and of the combined management report (hereinafter referred to as "ESEF documents") prepared for publication, contained in the file, which has the SHA-256 value fb06e9e263151e808c24c2017a 199988d48268965ff15e19ee784d50324e75b9, meet, in all material respects, the requirements for the electronic reporting format pursuant to Section 328 (1) HGB ("ESEF format"). In accordance with the German legal requirements, this audit only covers the conversion of the information contained in the consolidated financial statements and the combined management report into the ESEF format, and therefore covers neither the information contained in these electronic reproductions nor any other information contained in the file identified above.

In our opinion, the electronic reproductions of the consolidated financial statements and of the combined management report prepared for publication contained in the file identified above meet, in all material respects, the requirements for the electronic reporting format pursuant to Section 328 (1) HGB. Beyond this audit opinion and our audit opinions on the accompanying consolidated financial statements and on the accompanying combined management report for the financial year from 1 January to 31 December 2022 contained in the "Report on the Audit of the Consolidated Financial Statements and of the Combined Management Report" above, we do not express any assurance opinion on the information contained within these electronic reproductions or on any other information contained in the file identified above.

Basis for the Audit Opinion

We conducted our audit of the electronic reproductions of the consolidated financial statements and of the combined management report contained in the file identified above in accordance with Section 317 (3a) HGB and on the basis of the IDW Auditing Standard: Audit of the Electronic Reproductions of Financial Statements and Management Reports Prepared for Publication Purposes Pursuant to Section 317 (3a) HGB (IDW AuS 410 (06.2022)). Our responsibilities in this context are further described in the "Group Auditor's Responsibilities for the Audit of the ESEF Documents" section. Our audit firm has applied the IDW Standard on Quality Management: Requirements for Quality Management in the Audit Firm (IDW QS 1).

Responsibilities of the Executive Directors and the Supervisory Board for the ESEF Documents

The executive directors of the parent are responsible for the preparation of the ESEF documents based on the electronic files of the consolidated financial statements and of the combined management report according to Section 328 (1) sentence 4 no. 1 HGB and for the tagging of the consolidated financial statements according to Section 328 (1) sentence 4 no. 2 HGB.

In addition, the executive directors of the parent are responsible for such internal controls that they have considered necessary to enable the preparation of ESEF documents that are free from material intentional or unintentional non-compliance with the requirements for the electronic reporting format pursuant to Section 328 (1) HGB.

The supervisory board is responsible for overseeing the process for preparing the ESEF documents as part of the financial reporting process.

Group Auditor's Responsibilities for the Audit of the ESEF Documents

Our objective is to obtain reasonable assurance about whether the ESEF documents are free from material intentional or unintentional non-compliance with the requirements of Section 328 (1) HGB. We exercise professional judgement and maintain professional scepticism throughout the audit. We also:

- identify and assess the risks of material intentional or unintentional non-compliance with the requirements of Section 328 (1) HGB, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our audit opinion.
- obtain an understanding of internal control relevant to the audit on the ESEF documents in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an assurance opinion on the effectiveness of these controls.
- evaluate the technical validity of the ESEF documents, i.e. whether the file containing the ESEF documents meets the requirements of the Delegated Regulation (EU) 2019/815, in the version in force at the balance sheet date, on the technical specification for this electronic file.
- evaluate whether the ESEF documents enable a XHTML reproduction with content equivalent to the audited consolidated financial statements and to the audited combined management report.
- evaluate whether the tagging of the ESEF documents with Inline XBRL technology (iXBRL) in accordance with the requirements of Articles 4 and 6 of the Delegated Regulation (EU) 2019/815, in the version in force at the balance sheet date, enables an appropriate and complete machine-readable XBRL copy of the XHTML reproduction.

Further information pursuant to Article 10 of the EU Audit Regulation
We were elected as group auditor by the annual general meeting on 19 May 2022. We were engaged by the supervisory board on 12 August 2022. We have been the group auditor of Deutsche Pfandbriefbank AG, Munich/Germany, since the financial year 2021.

We declare that the audit opinions expressed in this auditor's report are consistent with the additional report to the audit committee pursuant to Article 11 of the EU Audit Regulation (long-form audit report).

OTHER MATTER – USE OF THE AUDITOR'S REPORT

Our auditor's report must always be read together with the audited consolidated financial statements and the audited combined management report as well as with the audited ESEF documents. The consolidated financial statements and the combined management report converted into the ESEF format – including the versions to be submitted for inclusion in the Company Register – are merely electronic reproductions of the audited consolidated financial statements and the audited combined management report and do not take their place. In particular, the ESEF report and our audit opinion contained therein are to be used solely together with the audited ESEF documents made available in electronic form.

GERMAN PUBLIC AUDITOR RESPONSIBLE FOR THE ENGAGEMENT

The German Public Auditor responsible for the engagement is Martin Kopatschek

Munich/Germany, 8 March 2023

Deloitte GmbH
Wirtschaftsprüfungsgesellschaft

Signed: Prof. Dr. Carl-Friedrich Leuschner	Signed: Martin Kopatschek
Wirtschaftsprüfer	Wirtschaftsprüfer
(German Public Auditor)	(German Public Auditor)

Future-oriented Statements

This report contains future-oriented statements in the form of intentions, assumptions, expectations or forecasts. These statements are based on the plans, estimates and predictions currently available to the management board of pbb. Future-oriented statements therefore only apply on the day on which they are made. We do not undertake any obligation to update such statements in light of new information or future events. By their nature, future-oriented statements contain risks and factors of uncertainty. A number of important factors can contribute to actual results deviating considerably from future-oriented statements. Such factors include the condition of the financial markets in Germany, Europe and the USA, the possible default of borrowers or counterparties of trading companies, the reliability of our principles, procedures and methods for risk management as well as other risks associated with our business activity.

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The German version of this Annual Report is the authoritative version and only the German version of the Combined Management Report and the Consolidated Financial Statements were audited by the auditors.