



**BERENBERG**

PARTNERSHIP SINCE 1590

# RISK REPORT

At December 31, 2021

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## 1. Overview

We retained our cautious, defensive risk strategy in the year under review. Our deliberate focus on less risky, service-oriented businesses continued to prove its worth, particularly in these times influenced by the Covid-19 pandemic. Our risk culture is characterised by an unchanged conservative risk appetite and is reviewed annually by the Board of Management as part of the strategy and planning process. Typical risks in banking business are taken to an appropriate extent, which ensures the long-term continuation of the business activity. This “risk philosophy” forms the basis of the company-wide risk management and includes the allocation of risk limits. The risk management for our branches is performed centrally at our head office in Hamburg.

The Bank’s liquidity situation was consistently very comfortable throughout 2021, as it has been in the previous years. We invest our deposit surplus in a highly liquid securities portfolio, which was dominated by securities of German public-sector issuers with short remaining maturities. This liquidity reserve is supplemented by high-creditworthy covered bonds. The majority of surplus liquidity not invested in bonds is deposited with the Bundesbank.

Our risk management is characterised by the strategic focus on service-based business fields, combined with the use of modern risk measurement methods tailored to our corporate structure. The main risk types that we analyse in our risk management processes are counterparty default risks, market price risks, operational risks, and liquidity risks. Reputational risks are evaluated as part of the management of operational risks. Potential declines in earnings are also taken into consideration. This takes place as part of the analysis of adverse scenarios, as well as indirectly through the conservative definition of the risk-covering assets in the ICAAP (Internal Capital Adequacy Assessment Process).

Our management-oriented implementation of the regulatory requirements for risk-bearing capacity (ICAAP) has once again proved effective in the year under review. The merger of capital planning, income statement planning and risk-bearing capacity, together with the parallel consideration of a normative perspective and an economic perspective, have been successfully integrated into the standard processes of the Risk Controlling unit. This way, we can ensure both of the related perspectives – “continuation of the institution” and “protection of the creditors”. Both perspectives are based on the fundamental principle of the risk-bearing capacity



calculation, which involves comparing calculated risks with existing risk-covering assets.

The normative perspective is based on regulatory requirements, particularly with respect to the institution's capital base. Various scenarios are analysed as part of the integrated, three-year capital planning process. On the one hand, we analyse a baseline scenario, which assumes business performance under normal economic conditions. On the other hand, an adverse scenario is investigated, which assumes a severe economic downturn that will have an impact significantly beyond one year. This scenario is based on extensive macro-economic assumptions, along with assumptions for the specific institution. It is not merely simulated in isolation for individual parameters. Instead, the adverse scenario under the Minimum Requirements for Risk Management (MaRisk) represents an integrated stress test with effects on all relevant indicators. It also includes control measures taken by the management to counter the crisis. Our results show that the Bank can also comfortably survive such extreme scenarios with its own capital and profitability. The current decision by the BaFin regarding an increase of the capital conservation buffer by 0.75% was also analysed with the result that this will prospectively not have any material consequences on the Bank's capital situation. All prescribed regulatory capital ratios are comfortably met.

For the economic perspective, the risk coverage potential is calculated close to fair value. HGB capital indicators, together with hidden reserves and/or liabilities are the starting point. Planned profits are not included in our approach, as a general rule. For risk categories referred to, the potential losses of the business divisions are quantified on the basis of the value-at-risk principle (VaR). The value-at-risk indicates the upper loss limit for a specified probability level. The risk quantification is performed using established fair value model calculations at a high confidence level of 99.9% and with a risk assessment horizon of one year. The value-at-risk fundamentally reflects the potential losses under normal market conditions. To gain a more extreme perspective on the risk situation, we supplement risk evaluations with appropriate historical and hypothetical stress tests.

Our regular comparisons between risk and risk-covering assets are based on these two different methods of assessing the risk position. Risk-mitigating diversification effects across the various risk types are consciously ignored by conservatively aggregating the covering amounts for the various categories of risk.

In the course of monthly and quarterly analyses that are conducted in parallel with one another, we compare the results of various stress scenarios

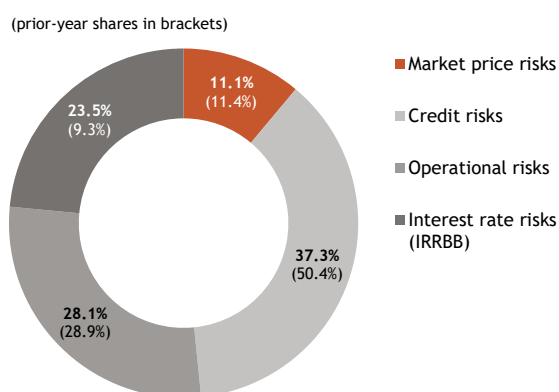


specific to risk types, as well as of general stress scenarios, with the available economic risk-covering assets. The results are not allowed to exceed the covering assets. We also perform ad-hoc stress tests, as necessary. As an inverse stress test, we define additional scenarios that, if they were to occur, would commit all of the risk-covering assets.

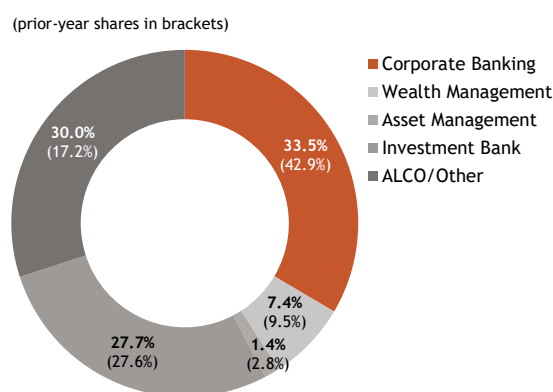
In the year under review, with risk utilisation below 40%, by far not all of the Bank's available economic capital was committed by the business divisions. This highlights the commercial prudence built into the Bank's risk management process and expresses the appropriateness of the relationship between the opportunities arising from business activities and the risks assumed with regard to overall profit or loss. Our overall bank management system provides that the business divisions take on risks only if they are commensurate with the potential earnings.

The figures below show the distribution of the committed economic capital across the Bank's risk categories and business divisions.

### Risk categories



### Business divisions



**Figure 1: Economic capital commitment by risk categories and business divisions**

The Board of Management bears overall responsibility for the risk management process and defines the general conditions for managing the various risk types. The Risk Controlling business unit acts independently of all front offices in organisational terms, in accordance with the Minimum Requirements for Risk Management (MaRisk) for banks and financial services institutions, and ensures the constant and timely flow of information to the Bank's Board of Management and Advisory Board in close collaboration with other organisational units. Risk Controlling is responsible for developing and overseeing the systems used in overall bank and risk man-



agement. Controlling and Accounting/Reporting functions, as well as the Data Protection and Information Security Management units, are integrated into the Risk Controlling unit. In particular, by interlinking key performance indicators (KPI) from Controlling/Accounting with the risk indicators, an overall Bank perspective for the valuation of risks is achieved. This can be made available in the ICAAP and the risk inventory of the Board of Management, for example. The unit carries out a risk inventory at regular intervals and compares the risk amounts of the various risk types with the available risk coverage potential. As part of the risk management processes, it is ensured that excessive risk concentrations exist neither within the various risk categories, nor across the risk types, in line with the strategy.

In its risk management, Berenberg uses the proven model of three lines of defence. In the first line of defence, the operational managers in the Bank's various units are risk owners with responsibility and accountability for assessing, managing and mitigating risks. This includes the implementation and monitoring of organisational hedging measures, as well as control activities anchored in the processes.

In the second line of defence, the Risk Controlling and Compliance units facilitate and monitor the implementation of effective risk management and ensure independent risk reporting to the Board of Management of the Bank.

The third line of defence consists of the independent Internal Audit unit, which employs a risk-oriented approach to evaluate how effectively Berenberg controls its risks and how well the first and second lines of defence perform their tasks.

The Board of Management, Risk Controlling and the crisis team are continually analysing the effects of the ongoing Covid-19 pandemic and are closely overseeing the implementation of management measures. We closely monitor volatility in financial and capital markets and conduct ad-hoc analyses, where necessary. The Bank's set-up with respect to the ICAAP is extremely robust, from both an economic and a normative perspective. From today's standpoint, the existing buffers in risk-covering assets are also sufficient to absorb the potential effects of the crisis on the Bank. The existing stress tests cover the current scenario, but will be supplemented and adjusted as needed in the respective situation. Current regulatory developments (CRRII, ESG etc.) are monitored closely, and their influence on the overall Bank is analysed.



## 2. Major risks

Credit Risk Management, a business unit that is organisationally independent of the customer-service units, monitors exposure to counterparty default risks using a wide-ranging limit system. Targeted analyses by Risk Controlling support the management of default risks at the overall portfolio level.

Market price risks arise from both short-term positions in the trading book and strategic positions in the liquidity reserve and are closely monitored by Risk Controlling. Interest rate risks of the banking book (IRRBB = Interest Rate Risk of the Banking Book) supplement the risk profile.

Using advanced methodologies, Risk Controlling also quantifies operational risk, the extent of which is limited by stringent processes, the appropriate training of our employees, and a comprehensive set of rules, including contingency plans.

The Treasury unit is responsible for the management of liquidity risk, together with the Money Market unit. Risk Controlling is involved in monitoring and validates the results on a regular basis.

An overall calculation is performed on a monthly basis to track the profit and loss of the business divisions, in consideration of the risks taken. In this context, individual earnings components that are volatile over time and possible changes in profitability resulting from them are also analysed. Daily reports on the key earnings components and scenario plans act as an early-warning system. A deliberate diversification is pursued across business divisions and markets. Risk Controlling provides management with reports that enable the recipients to analyse the earnings and risks at different aggregation levels.

Based on defined standards, the Bank's Internal Audit unit regularly examines the organisational precautions for managing, monitoring and controlling the various categories of risk, as described in detail below.

Risk Controlling and the Credit Risk Management regularly provide information to the Risk Monitoring Committee set up by the Bank's Advisory Board, which holds three scheduled meetings each year and on an ad-hoc basis, as required.

The principles of our risk management are laid out in a risk strategy document available to all employees.



## 2.1 Counterparty risk

Counterparty default risks arise, on the one hand, from the lending business involving our clients in the Corporate Banking (business clients), Wealth and Asset Management (private clients and institutional clients), and Investment Bank (strategic clients) divisions. On the other hand, counterparty default risks arise from our own securities holdings (issuer risks, spread risks), derivative transactions (counterparty risks), as well as from the investments made by our Money Market department in inter-bank business. Investment risks are not of material significance to Berenberg, but existing participating interests are integrated into the risk management processes.

In our unchanged conservative credit risk strategy, we have specified volume and maturity limits for the individual segments of the credit business, in accordance with the risk appetite defined by the Bank's Board of Management. Important elements include stringent credit processes, good collateral, the use of syndication possibilities, appropriate risk premiums, and the avoidance of structural subordination, as well as the consideration of ESG risks.

As in previous years, the high level of client deposits once again led to strong demand for investments, as only part of the existing equity and liabilities are required in the traditional credit business. In accordance with our investment strategy, only a relatively small part of the liquidity surplus was placed in the money market, with the investments made under the following conditions:

- Trading only with selected, top-rated banks
- Deliberate targeting of development banks with guarantee obligations
- Low limits per institution (or group of institutions) with the goal of achieving the broadest possible diversification

The majority of the structural liquidity surplus from client operations is invested in bonds with the very best ratings. In this context, we continue to have high standards for credit security and market liquidity of these investments, to keep possible price volatility to a minimum.

Our liquidity reserve (including promissory notes) is dominated by securities issued by German public-sector issuers, which account for 37% (previous year: 38%) and those guaranteed either by the Federal Republic of Germany or a German state, which account for 56% (previous year: 54%). German *Pfandbriefe* and Scandinavian covered bonds are also in the portfolio.





lio. The Bank did not hold European government bonds at the end of the year. The average remaining maturity of the portfolio was 1.6 years (previous year: 2.2 years) at year-end, so that only minor spread change risks exist in the portfolio. Due to limited investment opportunities in the preferred investment universe, a portion of the liquidity surplus remained in the ECB deposit facility.

The Board of Management receives regular reports about the bank exposure. The allocated bank limits are monitored regularly in order to allow counter-measures to be initiated promptly, if required. In this context, we not only rely on the appraisals by the rating agencies when assessing the institutions, but we also support our decisions by analysing annual reports and evaluating current market data.

Counterparty risk is managed using a wide-ranging limit system by means of which we limit risk concentrations. The counterparty default risk arising from derivatives is addressed by taking account of termination risks (replacement risks). We have reduced counterparty default risks by practising comprehensive collateral management in this segment, which can include further counterparties as required. This standard market form of ongoing collateralisation of OTC transactions is practised not only with banks, but also with a wide range of institutional clients.

Credit Risk Management is responsible for monitoring credit risk independently of the market. In addition to performing regular control activities, this unit provides a second opinion in addition to the front office teams, as required by the MaRisk rules, on the basis of our authority's regulations for credit decisions. These regulations restrict the scope of individual account managers to act, while ensuring that the entire Board of Management is involved in all major credit decisions. All credit exposures are subject to a constant resubmission cycle with an annual credit rating review. The specified limits are supplemented by a series of organisational measures and rules regarding collateral for credit exposures.

A credit risk report that is prepared on a quarterly basis serves to inform both the Board of Management and the Advisory Board about the structure of the credit business and its related risks. Extensive analyses performed by the Risk Controlling unit support the management of credit risk at the overall portfolio level.

For the management of the overall portfolio, the historical defaults of the past financial years, which have a very modest scope at the Bank (average default rate equal to 0.2% of credit volume over the course of the year, declining volume of individual loan loss provisions since 2010), are col-





lected and analysed. We also check the model's results with reference to default history by validating our credit risk calculations on a regular basis. The statistical loss expected for each financial year at the portfolio level ("expected loss") is derived from the data taken from our credit portfolio model and the long-term historical average for defaults. This "expected loss" of the credit exposure is integrated into the credit terms by calculating the standard risk costs.

The standard risk costs of a credit exposure are particularly influenced by the borrower's credit rating, as well as by the size of the loan and the collateral provided. A rating system for our corporate clients, available to the account managers and the back office teams on the Bank's intranet, facilitates a prompt credit analysis using the borrower's balance sheet data. In addition to the balance sheet ratios, qualitative factors relating the borrowers are also included when determining the rating class. For exposures of a project finance nature in the property and shipping segments, we employ internally developed rating procedures that include the cash flow projections for the assets to be financed as a key parameter. Structured financing is likewise measured using an internally developed rating tool that explicitly takes account of the debt ratio (leverage). In our portfolio of shipping loans – which is limited in magnitude compared with the overall portfolio (average share of 14% for the shipping segment over the course of the year) – we notably pay attention to short loan periods in view of the current market environment and prioritise outstanding collateral for the exposures.

The standard risk costs arising from the rating analysis can be obtained from our IT systems in all necessary aggregation levels.

The standard risk costs which, when aggregated, give rise to the statistical expected loss at the overall bank level, merely represent a long-term default average over time around which the actual defaults fluctuate. Consequently, a potential deviation of defaults from this expected value needs to be taken into account as an additional risk component. A statistical credit portfolio model built on the CreditRisk+ methodology is used to quantify the size of an unexpected loss at the portfolio level, which flows into the analysis of the Bank's ability to bear risk (ICAAP) with the respective quantile. The Bank's risk-covering assets serve as the Bank's economic capital for unexpected credit risks. Within MaRisk parameters, our analyses of the committed economic capital are supplemented by additional stress observations, such as a substantial deterioration of the probabilities of default or a decline in collateral values, the default of individual



key accounts or negative influences due to ESG developments (sustainability risks).

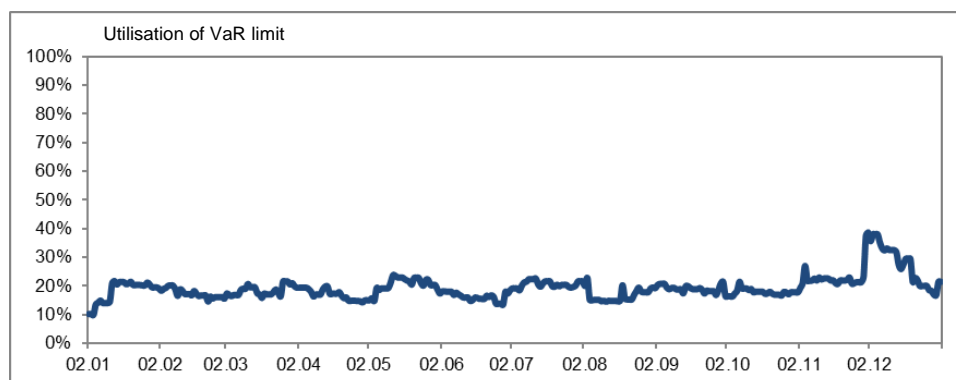
The quantitative methods that we use to assess counterparty default risks are validated regularly and refined when required. However, because of the lack of an adequate number of defaulting borrowers for statistical purposes, these methods are still not recognised for regulatory purposes as an IRB approach. The Bank has made a deliberate decision to employ the standard approach (CRSA), which is defined in the relevant regulations for regulatory purposes. This includes the comprehensive method for taking into account financial collateral pursuant to CRR. Under this approach, the tied capital from counterparty risk totalled €71.0 million at 31 December 2021 (previous year: €67.7 million).

## 2.2 Market price risk

Market price risks for positions in the trading and banking book of the Bank result from fluctuations of the prices and volatilities in the interest, equities and currency area.

Traditional proprietary trading continues to only have the purpose of supplementing our service-oriented business activities and takes place within very strictly defined limits. The market risks arising from proprietary trading positions are managed using an efficient risk measurement system. Value-at-risk figures are calculated using a Monte Carlo simulation on a daily basis for all positions containing market price risks. For ongoing management, a confidence level of 99% and a holding period for the financial instruments of ten trading days are assumed for these value-at-risk calculations. In accordance with the regulatory requirements, an extremely conservative approach is additionally used within the framework of risk-bearing capacity with a confidence level of 99.9% and holding periods that are differentiated by asset classes (under the economic perspective). As risk factor, discount factors in interest rates, equity time series or equity indices in equities, and exchange rates in foreign currencies are used, with a historical observation period of one year. The value-at-risk calculation is carried out using exponentially weighted historical observations. Under this approach, the value-at-risk reacts faster to current changes in market events than with equally weighted historical observation values.

The following chart shows the percentage distribution of the value-at-risk limit capacity over the past financial year for the positions of the trading book.



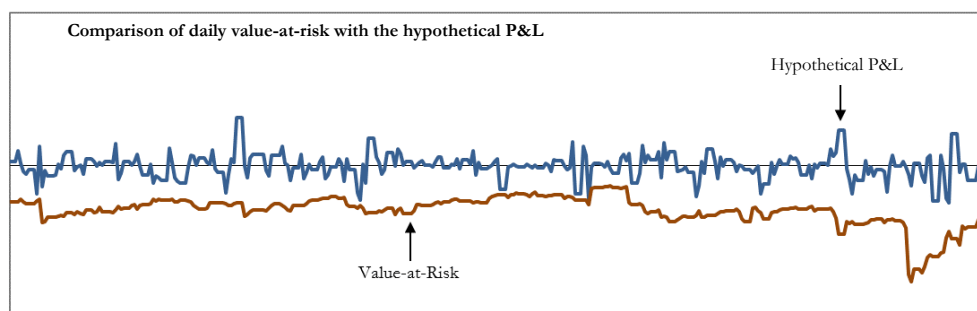
**Figure 2: Limit utilisation market price risk in 2021**

Figure 11 shows the moderate risk potential arising from our trading activities. The Bank's trading book that is defined for regulatory purposes is dominated by traditional equity positions (cash equities). Optional products play a strategically subordinated role and are mainly offers in client trading (particularly FX Trading) in the form of back-to-back transactions, which, as closed positions, do not hold any own market price risk for the Bank. Compared with the results achieved by the trading units, a beneficial risk/reward ratio is indicated. The largest portion of the allocated value-at-risk limits relates to the Sales area. These activities, which are allocated to the trading book to meet regulatory requirements, are not proprietary trading, strictly speaking. Rather, this segment settles orders for institutional clients.

The quality of the value-at-risk measurement is checked and analysed over time using daily back-testing, during which the forecast on the subsequent trading day is compared against the actual changes in value of the positions and analysed over time.

Figure 12 shows the progression of the daily back-testing results of the past financial year over time.

### Comparison of daily value-at-risk with a hypothetical P&L





**Figure 3: Daily back-testing market price risk in 2021**

In contrast to the limit utilisation, which is measured with a 10-day holding period, we apply the VaR with a one-day holding period for daily back-testing. The value-at-risk of the trading portfolios had the following structure in the year under review:

Trading book portfolios	VaR at the end of the period under review	VaR values during the year		
		highest value	lowest value	Reporting periods
	in € thousand	in € thousand	in € thousand	in € thousand
VaR	<b>3,755</b> (2,533)	<b>9,061</b> (11,779)	<b>1,564</b> (1,326)	<b>3,455</b> (3,816)

(with 1 day holding period, previous year's value in parentheses)

**Figure 4: Trading book VaR indicators**

Since the value-at-risk method only provides information about the risk content of positions under “normal” market conditions and does not take account of extreme market situations, the analyses are supplemented by daily worst-case calculations. This involves examining how current trading positions would behave in historically extreme situations. This stress test analyses the potential effects on the current trading positions.

Additional worst-case limits that must be observed on a daily basis exist for each trading segment alongside value-at-risk limits. In the methodology applied for risk-bearing capacity (economic perspective), the current limit utilisation is compared to the risk-covering assets using a very high confidence level of 99.9% and holding periods that are differentiated by asset classes on the basis of the liquidity horizons for internal models prescribed by CRR II (FRTB). We have retained our market risk model that we developed further in 2019, which performs calculations on the basis of a so-called fat-tail distribution. This methodology models unusual market movements (e.g., extreme price changes in the equity markets), which results in a lower number of potential back-testing outliers. The model proved its worth once again in the reporting period, generating an appropriate number of outliers against the backdrop of a volatile market environment, which confirms the quality of the forecast.

As unrealised losses have a limit-reducing effect, the allocated limits imply a stop-loss limit and therefore determine the maximum loss potential per financial year. Whereas the value-at-risk values are used to analyse the 99% and 99.9% confidence level, the worst-case limit utilisation is included in the stress test. The limits for the individual trading segments are manageable in comparison to the available risk-covering assets and are approved by all Managing Directors jointly. This approach ensures that no



individual trader is in a position to enter into large risk positions through his/her activity for the Bank.

Positions in the trading book are taken predominantly in liquid and linear financial instruments, for which a market price can be determined on a daily basis. Models are used only for the purpose of measuring the value of derivatives. On the one hand, derivatives may be used to hedge linear trading book positions. On the other hand, the limits applicable to foreign exchange operations also allow for open positions in derivatives. However, since only spot positions are entered into the proprietary trading book, the risks arising from the use of models are limited. Mechanisms are in place to review the quality of the models used on a regular basis.

The strategic positions of the liquidity reserve are managed by our Asset Liability Committee (ALCO), which includes representatives of Treasury and Risk Controlling, in addition to members of the Board of Management. The market price risk arising from positions in the liquidity reserve are measured using the same methods as the positions in the trading book. Furthermore, potential risks for spread fluctuation are analysed on the basis of historical data for the investment classes represented in our portfolio and additionally backed by risk-covering assets.

For the most part, no increased interest rate risk was assumed for the large proprietary investments in securities described in the section on counterparty default risk. The investments were largely made in either floaters or securities with a fixed coupon in connection with an interest rate swap in order to limit risk.

Risk Controlling, which is organisationally separated from the Trading units up to the level of the Board of Management, combines all of the market price risk positions into a risk report and ensures that the Board of Management is informed on a daily basis.

As of 31.12.2021, the regulatory capital adequacy for market price risks was at €17.8 million (previous year: €13.5 million).

### **2.3 Interest rat risks**

The strategic positions of the liquidity reserve are managed by our Asset Liability Committee (ALCO), which includes representatives of Treasury and Risk Controlling, in addition to members of the Board of Management. The market price risk arising from positions in the liquidity reserve are measured using the same methods as the positions in the trading book. Furthermore, potential risks for spread fluctuation are analysed on



the basis of historical data for the investment classes represented in our portfolio and additionally backed by risk-covering assets.

For the most part, no increased interest rate risk was assumed for the large proprietary investments in securities described in the section about counterparty default risk. The investments were largely made in either floaters or securities with a fixed coupon in connection with an interest rate swap in order to limit risk.

The effect of the interest rate shocks for interest rate risk in the banking book (IRRBB) defined for supervisory purposes is analysed regularly using internally developed procedures. This involves analysing the effect of a shift on the present value of the banking book. A possible decline in the volume of deposits is simulated by regularly reviewed process scenarios. Equity components do not flow into the analyses. The ratio of the resulting change in the present value to the capital base, which according to the regulatory requirements should not exceed 20%, amounted to 11.8% at the end of the financial year (previous year: 4.4%) and results from a scenario of heavily falling interest rates. In contrast, rising interest rates would lead to a positive change in the present value. The amount of this ratio is a reflection of our unchanged investment policy, which is characterised by short maturities in the lending and borrowing business. The higher scenario loss in comparison to the previous year is due mainly to the growing deposit business, in combination with rising interest rates. Both lead to a present value that is currently higher, which would be lost again in a scenario of falling interest rates. In addition, the inclusion of pension commitments, which has been prescribed since 2018 and does not represent a bank-specific item, leads to higher results, as a general rule. The utilisation of the regulatory threshold is nevertheless in a comfortable range and can be managed with appropriate hedging instruments, where necessary.

## 2.4 Operational risk

Operational risk is generally defined as the danger of incurring losses as a result of the inappropriateness or failure of internal methods, people, and systems or external events. This definition also covers legal risks. Reputational risks are also covered in terms of quality as part of the management of operational risks. What are referred to as non-financial risks are also included to a large extent as part of our OpRisk management (e.g., IT, compliance, and legal risks). Non-financial risks are taken into consideration also implicitly through the composition of the risk-covering assets.



The management of related risks is a high priority for the Bank, given its strategic focus on the provision of services. Accordingly, we use advanced risk measurement procedures that allow for appropriate management (internal OpVaR model, scenario analyses).

Operational risks are also limited by a wide-ranging set of instructions, process definitions, and authority rules. The various division heads have direct responsibility for compliance with, and the ongoing updating of, these rules and regulations. A department responsible for process definitions across the whole Bank provides support in this regard. The Bank's Internal Audit unit audits the conformity of business activities with these rules and regulations at regular intervals.

A major component of operational risk relates to the functionalities and security of the IT systems we use. This segment is covered by special arrangements and precautions in the various technical units. These include constant technical refinement and market data together with a firewall concept to prevent viruses and attempted intrusions from outside and back-up systems used to ensure uninterrupted business operations in the event of system failures. In consideration of the growing challenges to banks in the realm of cyber-criminality, we constantly refine the existing procedures to reflect the latest state-of-the-art, in accordance with the German Supervisory Requirements for IT in Financial Institutions (BAIT) and ensure the security of our Bank. Among other things, we conduct behaviour-based analyses (sandbox solution) of all e-mail attachments in addition to signature-based analyses. We also perform a SIEM ("Security Information and Event Management") analysis, which automatically analyses log sources according to constantly refined rules in order to detect and investigate any anomalies quickly. A central contingency management and business continuity management (BCM) function has been established for all areas of the Bank.

The employees of the Bank are appraised by their supervisors at regular intervals. Cooperation between the Human Resources business unit and the managers ensures that the employees have the appropriate high qualification and motivation for their position at the Bank.

Legal risk is limited by means of constant collaboration between the Legal business unit and the functional units together with the use of suitable forms and contracts, as well as the standardisation of input and settlement procedures in connection with IT operations. In addition, the Legal unit examines all concluded contracts in advance as part of a central contract management process.





A key aspect of our risk management approach for operational risk involves sensitising all employees to this type of risk. The values of our business activity are defined within the overall bank strategy. With respect to the risk culture, these values are particularly geared towards the three central points of risk appetite, risk monitoring, and employee incentivisation (in keeping with the Capital Requirements Directive IV). Risk appetite, which is defined by the Bank's Board of Management annually as part of the strategy planning process, also forms the basis for the assignment of risk limits to the trading units. The risk monitoring functions are designed in accordance with the MaRisk principles and ensure prompt reporting, free of external influences, by Risk Controlling, Compliance and Internal Audit, which operate independently of the markets. With regard to our employees, we generally place a high priority on an open culture of admitting mistakes. Mistakes that occur are fundamentally seen as an opportunity to further optimise our processes and risk forecasts. Thus, operational risk is identified and managed in part on the basis of internal loss incidents, which are centrally recorded and processed in the loss incident database kept centrally by the Risk Controlling unit. This practice not only requires, but also fosters a transparent way of dealing with any irregularities. It is particularly important to us that every employee takes responsibility for the Bank as a whole; in fact, individual career development is linked to these goals. Furthermore, we consistently avoid employee conflicts of interest by structuring our compensation principles and the existence of a discretionary variable compensation component, among other measures.

The database for systematically recording operational losses, which enables us to analyse losses incurred and draw up appropriate countermeasures, is very important in this context. The Board of Management is reported to on a regular basis using this database, regarding the extent and development of operational losses.

We applied our advanced methodology used to internally manage operational risk during the past financial year in the established way. Targeted scenario analyses are conducted on a regular basis. This involves asking experts from all areas of the Bank about a wide-ranging list of possible scenarios during structured workshops. Outsourcing occur where it appears useful in consideration of efficiency and is the responsibility of our centralised outsourcing management function. All outsourced activities are evaluated, rated and documented. We also analyse scenarios involving potential difficulties with cooperation partners or suppliers. In the scenario workshops, we also record the consequences of ESG criteria on the loss amounts and frequencies of the parameters underlying the model



(e.g., influence of extreme weather conditions on the availability of buildings or data centres). The results enable an assessment of future operational risk potential and provide additional perspectives in this risk category.

The results of the loss incident database form the basis for calculating a value-at-risk for operational risks. For this purpose, we employ an internally developed calculating engine, the results of which are incorporated into the analysis of the Bank's ability to bear risk. The results of our VaR and expert estimates are regularly validated by reference to external data. The analyses did not identify any operational risks in excess of the allocated risk-covering assets. The scenario analyses are also used to draw up risk-reduction measures for significant risks. In addition, potential reputational risks for the Bank are listed when the expert surveys are conducted. If required, measures are discussed with a view to ensuring a constantly high level of public confidence in our organisation. At the time of implementation, we also engaged an outside institution to review the quality of the methods used to manage operational risks and the related processes. With the model established, we believe that we are well positioned to meet the regulatory requirements of Pillar II and the Supervisory Review and Evaluation Process (SREP).

Banks are required to hold adequate equity to cover the operational risks they assume. Methods with a different degree of accuracy are authorised for use when quantifying the capital adequacy for this risk category. Although an efficient model is now used for internal management purposes, the Bank uses the less complex Basic Indicator Approach to calculate the capital required to cover operational risk. The use of models to determine capital coverage requirements is expected to be discontinued with the introduction of CRR III. The version published in October will be valid from 2023. For operational risks, only a standardised approach will then be available for all institutions in regulatory Pillar I (Standardised Measurement Approach (SMA)). We have already analysed the changes associated with this and concluded that from a present perspective, relief is expected (weighting factor of 12% instead of 15%).

With the Basic Indicator Approach that we used in the year under review, the average gross earnings from the last three financial years are weighted by a factor of 15%. By the end of 2021, the capital required to cover operational risk totalled €70.0 million (previous year: €67.0 million).



## 2.5 Liquidity risks

Berenberg can fund itself completely from customer deposits. There were no outstanding liquidity positions at any time during the year under review.

Liquidity risks play a relatively minor role in maturities of more than one year, due to the short-term structure of our business. There was a significant liquidity surplus in maturities of less than one year. This surplus was invested in highly liquid bonds (issued primarily by German states and development banks), in accordance with our strategy. The vast majority of the securities are deposited with the Deutsche Bundesbank, which would guarantee a large refinancing facility with the European Central Bank in the event of an unexpected liquidity requirement. The free credit line with the Deutsche Bundesbank amounted to €1.0 billion at 31.12.2021 (previous year: €1.3 billion). We do not expect any deterioration in our liquidity situation in the new financial year.

To manage short-term liquidity, the Treasury unit continually analyses all relevant cash flows over the course of time. Stress tests are conducted on a daily basis. In addition to the simulation of general stress scenarios, further scenarios are analysed involving extreme additional stressing of individual liquidity components. The requirements for the regulatory Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR) added as part of CRR II, were also fulfilled at all times. Due to the Bank's liquidity situation as described above, no risk-covering assets are allocated for liquidity risk in the ICAAP at present. Only in the unlikely event of negative stress test results would it be necessary to provide economic capital to cover the potential costs of an increase in the procurement of liquidity.

The Bank monitors compliance with the liquidity ratios prescribed by the CRR on a daily basis. At 1.9 (previous year: 2.0), the LCR was well above the required minimum ratio of 1.0 at year-end. The same applies to the NSFR, which was at 2.7 (vs. the minimum requirement also of 1.0).

The risk of inadequate market liquidity for individual trading products defined in the MaRisk rules is monitored implicitly as part of market risk control.



### 3. Overall bank management

Our business strategy, which has proved successful over many years, is regularly reviewed, together with the corresponding risk strategy during the annual planning process. This process also involves an analysis of which measures the various profit centres wish to adopt to achieve their strategic targets and how the planned activities affect the projected development of earnings and the utilisation of risk-covering assets in the ICAAP.

The risk-bearing capacity calculation, with its comparison of calculated risks and available economic capital, represents a central component for managing the risks assumed at the level of the overall Bank. A conceptual merger of capital planning, income statement planning, and risk-bearing capacity is being conducted on the basis of the new RTF guidelines published in 2018. The parallel consideration of a normative and an economic perspective makes it possible to take the continued existence of the institution into consideration, in parallel with the protection of creditors. In both perspectives, utilisation during the year was very comfortable, which reflects the robust economic situation and capitalisation, as well as the strategic risk profile.

The Recovery Plan, which is required of all banks by the regulator on the basis of the German Recovery and Resolution Act (*Sanierungs- und Abwicklungsgesetz*) and prepared for the first time in 2020, was updated at regular intervals. Due to the size of the institution, the plan to be submitted is governed by the simplified requirements, in accordance with the German Minimum Requirements for Recovery Planning (*MaSanV*). The key indicators (recovery indicators) adopted in this context were monitored constantly and are part of the reporting to the Board of Management. All of the defined thresholds were met in the year under review, so that no management measures were necessary. However, the existing options for action and management processes for potential crisis situations are suitable for countering any financial deterioration at an early stage.

The risks and rewards of the banking business are constantly compared to one another in our processes for overall bank management. As a scarce resource, economic capital is allocated to those segments for which the opportunities exceed the risks taken.

The quantitative information and control systems used by the Bank as part of the risk management process supply important information for assessing risks. Combining this with the employees' huge wealth of experience ensures a comprehensive analysis of the risk situation. Therefore,



**BERENBERG**

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we are convinced overall that the risks taken are proportional to the attainable returns and no risks have been taken that exceed the Bank's risk-bearing capacity.

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