



RISK REPORT

At December 31, 2019

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1. Overview

We continued to consistently apply our cautious, defensive risk strategy in the reporting period. Our deliberate focus on less risky, service-oriented business divisions once again proved its worth. Our risk culture is marked by a conservative risk appetite and is defined by Management once a year as part of the strategy and planning process. Risks are assumed only to an appropriate extent that ensures the Bank's ability to continue as a going concern over the long term. This approach forms the basis for our risk management, including the setting of risk limits.

The Bank's liquidity situation was consistently very comfortable throughout 2019, as in the previous years. We invest our deposit surplus in a highly liquid securities portfolio dominated by securities of German public-sector issuers with short remaining maturities. This liquidity reserve is supplemented by highly creditworthy covered bonds. At no time has the Bank conducted proprietary investments in securitised credit structures or similar.

Our risk management process is characterised by its strategic focus on service-based business divisions, 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, market price, operational and liquidity risks. Reputation risks are evaluated as part of the management of operational risk. The possibility of declines in earnings is also considered (adverse scenarios, conservative definition of economic capital).

The early conversion to the requirements of the supervisory agency guidelines published in May 2018 on the new risk-bearing capacity has proved to be effective. . 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, were successfully integrated into the standard risk controlling processes. Therefore, the achievement of the two related goals "continued existence of the institution" and "protection of creditors" is assured. Both perspectives are based on the fundamental principle of the risk-bearing capacity calculation, which entails comparing determined risks with existing economic capital.



The **normative perspective** is based on regulatory requirements, particularly with respect to the institution's equity base. Various scenarios are analysed within the framework of integrated capital planning, which covers three years. Along with the baseline scenario, which provides for the course of business under normal economic conditions, an **adverse scenario** is considered which assumes a serious economic downturn that will affect the economy for clearly more than one year. This scenario is based on extensive macroeconomic assumptions along with assumptions for the specific institution. It is not merely simulated in isolation for individual parameters; instead, the adverse scenario according to MaRisk AT 4.3.3 represents an integrated stress test with effects on all relevant indicators, and also includes control measures taken by Management to counter the crisis. The results show that from its own capital and profitability, the bank could weather an extreme scenario of that scope.

For the **economic perspective**, the risk-covering potential is calculated close to the present value. The capital indicators on the balance sheet pursuant to HGB together with hidden reserves and/or hidden liabilities are the starting point. Planned profits are fundamentally not included in our approach. The potential losses of the business divisions are quantified for the above risk types on the basis of the value-at-risk (VaR) principle. VaR represents the loss threshold for a given probability level. Risk quantification uses our established present value model calculations with a very high confidence level of 99.9% and a risk analysis period of one year. The VaR procedures fundamentally reflect only the potential losses on the basis of 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 cover 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 carried out in parallel, the results of various stress scenarios specific to risk types as well as of general stress scenarios are compared with the available economic capital, and cannot exceed this figure. We also perform ad-hoc stress tests as and when required. As an inverse stress test, we define additional scenarios



that would tie up all of the available economic capital if they were to occur.

Not all of the economic capital available to the Bank in the past financial year was used by the business divisions, which highlights the commercial caution built into the Bank's risk management process and reflects 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 risk only if it is commensurate with the potential rewards.

Figures 1 and 2 show the distribution of the tied economic capital across the various risk types and the divisions of the Bank.



Risk types

(year-ago figures in brackets)

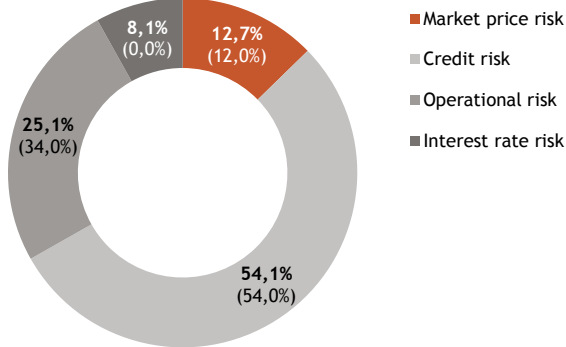


Figure 1: Tied Economic Capital by Risk Category

Divisions

(year-ago figures in brackets)

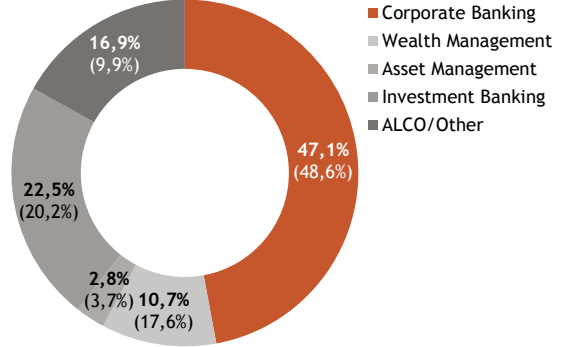


Figure 2: Tied Economic Capital by Division

(year-ago figures in brackets)

Management has overall responsibility for the risk management process and defines the general conditions for managing the various risk types. The Risk Controlling 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 Management and Advisory Board in collaboration with other organisational units. Risk Controlling is responsible for developing and overseeing the systems used in overall bank and risk management. It carries out a risk inventory at regular intervals and compares the risk amounts of the various risk types with the available economic capital. As part of the risk management process, we ensure in line with our strategy that excessive concentrations of risk do not exist, either within or across risk classes.

In its risk management, Berenberg employs the classic 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 risk. This includes the implementation and monitoring of organisational hedging operations and 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 Management of the Bank.

The third line of defence consists of the Bank's independent Internal Audit Department, 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.

Our Management and Risk Controlling Department or crisis team are continually analysing the effects of the current coronavirus pandemic and closely overseeing the implementation of management measures. In view of the volatility in financial and capital markets, we are also conducting ad-hoc analysis. The results to date show that the bank's position in the ICAAP is extremely robust from both the normative and the economic perspective. From today's standpoint, the existing buffers in economic capital are also sufficient to absorb the effects of the crisis on the Bank. The stress tests conducted to date are adequate for the current scenario, but will be supplemented and adjusted as needed in the current situation.

2. Major risks

A Back Office Department organisationally independent of the front office monitors exposure to **counterparty risk** using a wide-ranging limit structure. A range of targeted risk controlling analyses supports the management of default risk at the overall portfolio level.

Market price risk arises from both short-term positions in the trading book and strategic positions in the liquidity reserve, and is closely monitored by Risk Controlling. **Interest rate risk** of the banking book supplements the risk profile.

Using advanced methodologies, Risk Controlling also quantifies **operational risk**, the extent of which is limited by a comprehensive set of rules and contingency plans.

Treasury is responsible for the management of **liquidity risk**, together with the Money Market Department. Risk Controlling is included in monitoring and validates the results.



An overall calculation is performed on a monthly basis to track the profit and loss of the business divisions, taking into account the risks assumed. In this context, individual earnings components that are volatile over time and possible changes in profitability resulting from them are 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.

The Risk Controlling unit provides management with an efficient management information system that enables the recipients to analyse the earnings and risks at different aggregation levels.

The Bank's Internal Audit Department regularly examines the organisational precautions for managing, monitoring and controlling the various categories of risk, described in detail below, based on the parameters specified in the Audit Manual.

Risk Controlling and the Back Office Department (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.

The principles of our risk management strategy are recorded in a written risk strategy paper, which is available to all employees.

2.1 Counterparty risk

Counterparty risk arises in part from the **commercial lending business** involving our clients in the Corporate Banking (business clients), Wealth and Asset Management (private clients and institutional clients), and Investment Banking (strategic clients) divisions. Furthermore, counterparty risk arises from our own **securities holdings** (issuer risk, spread risk), derivative transactions (counterparty risk), as well as from the investments made by our Money Market Department in **interbank operations**. **Investment risk** is not a major issue for Berenberg; however, existing equity interests are integrated in the risk management processes.

In our conservative **credit risk strategy**, we have adopted volume and maturity limits for the individual segments of the credit business, in ac-



cordance with the risk appetite defined by the Bank's Management. Important elements of this strategy include good collateral, the use of syndication possibilities, appropriate risk premiums, and the avoidance of structural subordination.

As in previous years, the large pool of client deposits again led to strong demand for investment by our Treasury Department. 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 enjoying public guarantees
- Low limits for each institution (or institutional group), with a view to achieving the broadest possible diversification

The structural liquidity surplus from client operations is for the most part invested in **bonds** with the very best ratings. In this context, we have high expectations in terms of the credit quality and market liquidity of these investments with a view to keeping price volatility to a minimum.

Our liquidity reserve (including promissory notes) is dominated by securities issued by German public-sector issuers, which account for 25% (previous year: 22%), and those guaranteed either by the Federal Republic of Germany or a German state, which account for 43% (previous year: 49%). German Pfandbriefs and Scandinavian covered bonds account for 32% (previous year: 29%). The Bank did not hold European government bonds at the end of the year (previous year: 0%). The average remaining maturity of this bond holding amounted to 1.7 years at year-end (previous year: 1.3 years), meaning that only minor spread change risk occurs 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.

Regular reports keep Management informed 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, 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 risk arising from derivatives is addressed by taking account of termination risk (replacement risk). We have reduced counterparty risk by practising comprehensive collateral management in this segment, which can include further counterparties as required. This form of ongoing collateralisation of OTC transactions is practised not only with banks but also with an ever-broader base of institutional clients.

The **Back Office Department** (Credit Risk Management) is responsible for monitoring credit risk independently of the Front Office. Besides performing regular control activities, this department provides a second opinion in addition to the Front Office Department, as required by the MaRisk rules, on the basis of authority regulations for credit decisions. The defined authority regulations both restrict the freedom of individual account managers to act autonomously and ensure that the whole Management is involved in all major credit decisions. All credit exposures are subject to a constant resubmission cycle complete with an annual rating review. The limit rules are supplemented by a series of organisational measures and rules regarding collateral for credit exposures.

A **credit risk report** prepared on a quarterly basis serves to inform both Management and the Advisory Board about the structure of the credit business and its related risks. Wide-ranging analyses performed by the Risk Controlling Department help to manage credit risk at the overall portfolio level.

In connection with the management of the overall portfolio, the historical defaults of the last few financial years, which have a very modest scope at the Bank (default rate equal to 0.4% of credit volume at the end of 2019, lower volume of individual loan loss provisions since 2010), are maintained and regularly analysed in a central default database. We also check the model 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 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 incorporated into the credit terms by way of the calculation of **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 has been made available to the account managers and Back Office Department on the Bank's intranet. This system facilitates a prompt credit analysis using the borrower's balance sheet data. Qualitative factors regarding the borrowers are also incorporated when determining the rating class and balance sheet ratios. 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 factors in the debt ratio (leverage). In our portfolio of ship loans – which is limited in magnitude compared with the overall portfolio (14% share for the shipping segment at the end of the year) – we notably look for 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 losses 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. This is included in the analysis of the Bank's ability to bear risk (ICAAP) with the respective quantile. The Bank's economic capital serves as the "economic capital for unexpected credit risk". Within MaRisk parameters, our analyses of the tied economic capital are supplemented by additional stress observations such as a substantial deterioration of the probabilities of default or decline in collateral values.

The quantitative methods we use to assess counterparty risk are validated regularly and refined when required. Because of the lack of an adequate number of defaulting borrowers for statistical purposes, however, these methods are not recognised for supervisory purposes as an IRB approach. The Bank has made a deliberate decision to employ the standard approach



(CRSA) 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 € 85.6 million at 31 December 2019 (previous year: € 69.9 million).

2.2 Market price risk

Market price risk for positions in the Bank's trading and banking books results from fluctuations in prices and volatilities in interest rates, equities, and foreign currencies.

As in the previous year, traditional proprietary trading serves only to supplement our service-oriented business activities and takes place within very strictly defined limits. The market risk arising from proprietary trading positions is 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 risk. 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 (economic perspective). The following risk factors are incorporated: discount factors in the field of interest rates, equity time series or equity indices in the field of equities, and exchange rates in the field of foreign currencies, 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 balanced 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.

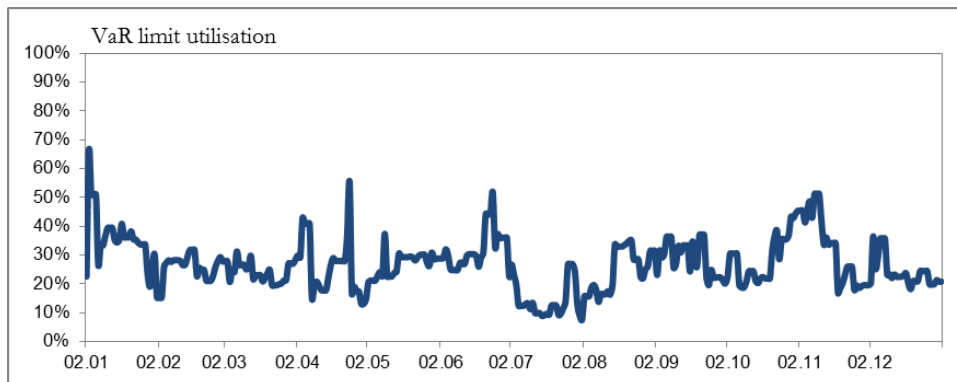


Figure 3: Limit Utilisation Market Price Risk 2019

Figure 3 shows the moderate risk potential arising from our trading activities. The Bank's trading book defined for regulatory purposes is dominated by traditional equity positions. As in the previous year, optional products play a subordinate role and concentrate especially on the foreign exchange segment. Plain vanilla products predominate here. 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 sales operations, which are allocated to the trading book to meet regulatory requirements. These activities are not proprietary trading as such, as this segment more frequently handles orders for institutional clients.

The quality of the value-at-risk measurement is checked and analysed over time using a daily back-test, during which the forecast on the subsequent trading day is compared against the actual changes in value of the positions. Figure 4 shows the progression of the daily back-testing results of the past financial year over time.

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

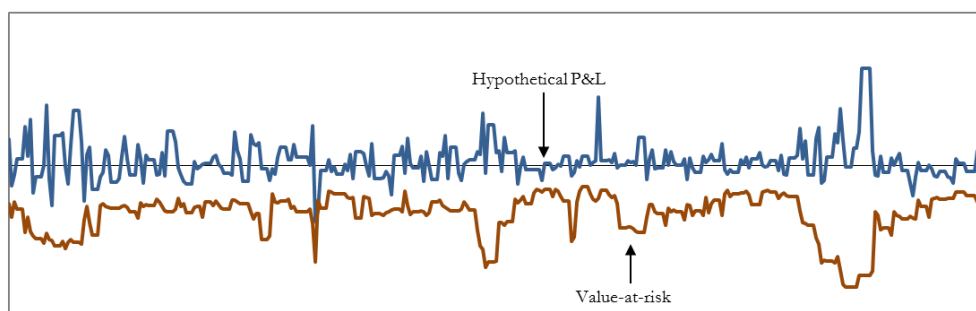


Figure 4: Daily Back-testing Market Price Risk 2019



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 following table shows the structure of the value-at-risk of the trading portfolios in the reporting period:

Trading portfolios	VaR at end of reporting period € '000	VaR values during the year		
		High € '000	Low € '000	Average € '000
Aggregated VaR	1.769 (1.985)	6.317 (6.198)	1.096 (1.125)	2.512 (2.734)

(for 1-day holding period, year-ago figures in brackets)

Figure 5: VaR Indicators Trading Book

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 economic capital 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). After an intensive analysis phase, we refined our market price model in that the calculation is now performed on the basis of a so-called “fat tail” distribution in the third quarter (previously: normal distribution assumption). This new methodology models unusual market movements (e.g. extreme price changes in the equity markets) more exactly and results in a lower number of potential back-testing outliers.

Because 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 levels, the economic capital is compared against worst-case limit utilisation for the stress test. The limits for the individual trading segments are manageable in comparison against the available economic capital and are approved by all division heads jointly. This approach ensures that no individual trader is in a position to enter into large risk positions by means of 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 employed 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. Since derivative positions are almost exclusively plain-vanilla structures, the risks arising from the use of models are limited. Mechanisms are in place to review the quality of the models employed on a regular basis.

The strategic positions of the liquidity reserve are managed by the Asset Liability Committee (ALCO), which includes representatives of the Treasury and Risk Controlling Departments together with members of the management team. 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 economic capital.

For the most part, no increased interest rate risk was assumed for the large proprietary investments in securities described in Section 2.1 about counterparty 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 regularly analysed using internally developed procedures. This involves analysing the effect of an upward shift on the present value of the aggregated cash flows of the Bank as a whole. A possible decline in the volume of deposits is simulated by regularly reviewed process scenarios. Equity components were not included in the analyses. The ratio of the resulting change in the present value to own funds, which according to the regulatory requirements should not exceed 20%, amounted to 8.93% at the end of the financial year (previous year: 10.03%). The amount of this ratio is a reflection of our unchanged investment policy, which is characterised by short terms in the lending and borrowing business. However, the inclusion of employer pension plans, which do not represent a bank-specific item, as prescribed since 2018, leads to a shift in the level of the results. At under 50%, the



utilisation of the regulatory threshold value lies in a comfortable range and we also do not expect any greater volatility here in the future.

Risk Controlling, which is kept organisationally separate from the trading units up to the level of Management, summarises all market risk positions in a risk report and ensures that Management is kept informed on a daily basis.

The regulatory economic capital cover for market price risks amounted to € 12.4 million at 31 December 2019 (previous year: € 16.1 million).

2.3 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 risk. Reputation risk is also covered in terms of quality as part of the management of operational risk. 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). Furthermore, they are taken into consideration implicitly through the composition of the economic capital.

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 risk is 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 within Central Bank Management responsible for process definitions across the whole Bank provides support in this regard. The Internal Audit Department 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 computer 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 failure. 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 according to 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 be able to detect and investigate any anomalies quickly. A central contingency management and business continuity management function (BCM) 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 Department and the managers ensures that the employees have the right skills and motivation for their position at the Bank.

Legal risk is limited by means of constant collaboration between the Legal Department 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 Department 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 oriented to the three central points of risk appetite, risk monitoring, and employee incentivisation (as per the Capital Requirements Directive IV). The risk appetite, which is defined by the Bank’s Management annually as part of the strategy planning process, also forms the basis for the assignment of risk limits to the trading departments. The risk monitoring functions are designed in accordance with the MaRisk principles. On this basis, the Risk Controlling, Compliance, and Internal Audit Departments, which operate independently of the markets, provide the Bank’s Management with prompt reports free of external influences. With regard to our employees, we generally place a high priority on an open culture of admitting mistakes. Mis-



takes 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 by the Risk Controlling Department. This practice not only requires but 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 conflicts of interest for our employees through the design of our compensation principles and the existence of a discretionary variable compensation component, among other measures.

The database to systematically record operational losses, which enables us to analyse losses incurred and to draw up appropriate counter-measures, is very important in this context. This database is used as the foundation for informing management about the extent and development of operational losses on a regular basis.

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** topics occur where it appears useful in consideration of profitability and is the responsibility of the centralised outsourcing management function. All outsourced activities are evaluated, rated, and documented. We also analyse scenarios involving potential difficulties with cooperation partners or suppliers. The results make it possible to assess future operational risk potential and gain an additional perspective on this type of risk.

The results of the loss database and scenario analyses 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 risk in excess of the allocated economic capital. The scenario analyses are also used to draw up risk-reduction measures for significant risks. In addition, potential reputation 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 Bank. At the time of implementation, we engaged an outside institution to review the quality of the methods employed 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 capital to cover the operational risk they assume. Methods with a different level of accuracy are authorised for use when quantifying the capital adequacy for this risk category. Although an efficient model is now employed for internal management purposes, the Bank uses the less complex Basic Indicator Approach to calculate the capital required to cover operational risk. Bank regulators are critical of the use of models to determine capital coverage requirements. At the present time, the bank regulatory authority is revising all the measurement methods for operational risk. We are keeping track of developments that pertain to the future Pillar I requirements. Under the Basic Indicator Approach employed by the Bank, the average gross earnings from the last three financial years are weighted with a factor of 15%. By the end of 2019, the capital required to cover operational risk totalled € 57.7 million (previous year: € 60.5 million).

2.4 Liquidity risks

Berenberg can fund itself completely from customer deposits and was liquid at all times in the reporting period. There were no outstanding liquidity positions at any time.

There is little liquidity risk for durations of more than one year on account of the short-term structure of our business. There was a strong liquidity surplus in durations 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 is deposited with Deutsche Bundesbank, which would guarantee a large funding facility with the European Central Bank in the event of an unexpected liquidity requirement. This free credit line with the Deutsche Bundesbank amounted to € 1.2 billion at 31 December 2019 (previous year € 0.7 billion). We do not expect our liquidity situation to change in the new financial year.



To manage short-term liquidity, the Treasury Department continually analyses all relevant cash flows over the course of time. This includes carrying out stress tests on a daily basis. Besides the simulation of general stress scenarios, further scenarios are considered involving extreme additional stressing of individual liquidity components. Moreover, the rules for the regulatory Liquidity Coverage Ratio (LCR) were always fulfilled. Due to the bank's liquidity situation as described above, no economic capital is 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 it becoming more expensive to obtain liquidity.

The Bank's Finance Department monitors compliance with the liquidity ratios prescribed by the CRR on a daily basis. At 1.5 (previous year: 1.6), the LCR was well above the required minimum ratio at the end of the year.

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 economic capital 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 takes place based on the new RTF guidelines published in 2018. The parallel consideration of a normative and an economic perspective makes it possible to factor in both the continued existence of the institution as well as the protection of creditors in parallel.



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The risks and rewards of banking operations are constantly held in view in our processes for overall bank management. As a scarce resource, economic capital is allocated to the segments for which the opportunities exceed the risk assumed.

The quantitative information and control systems employed by the Bank as part of the risk management process supply important information for assessing risk. Combining this with the huge experience of the workforce thus ensures a wide-ranging analysis of the risk situation. Consequently, we are certain overall that the risk assumed is in an appropriate relation to the earnings that can be achieved and that no risk has been assumed in excess of the Bank's ability to bear risk.