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different*

Hannover Re 2021

Solvency and Financial Condition Report

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Executive Summary

Key figures

in TEUR	2021	2020
Solvency II Balance Sheet		
Assets	72,320,375	63,414,008
Technical Provisions	46,251,366	40,451,144
Other Liabilities	10,913,021	9,528,788
Excess of Assets over Liabilities	15,155,988	13,434,076
Eligible Own Funds		
Tier 1 Basic Own Funds (unrestricted)	13,615,484	12,124,227
Tier 1 Basic Own Funds (restricted)	533,225	548,243
Tier 2 Basic Own Funds	2,496,520	1,815,247
Tier 3 Own Funds	138,500	69,829
Eligible Own Funds (SCR)	16,783,730	14,557,545
Capital Requirements		
Solvency Capital Requirement	6,904,154	6,190,424
Minimum Capital Requirement	4,519,540	4,068,444
Coverage Ratio		
Ratio of Eligible Own Funds to SCR (Solvency Ratio)	243%	235%
Ratio of Eligible Own Funds to MCR	333%	331%

Hannover Re Group (hereinafter referred to as “Hannover Re” or “the Group”) fulfils the minimum and solvency capital requirements (hereinafter referred to as MCR and SCR) stipulated by the supervisory authority as at the reporting date 31 December 2021 and during the financial year 2021. In addition, the solvency ratio ranges above the internal threshold of 200% during the entire financial year.

Please note that this report represents a voluntary publication of the Hannover Re Group.

Please note that rounding differences can occur in the presented tables. Values below TEUR 0.5 are displayed as “0”. Empty cells or cells with “-“ represent a value of EUR 0.00.

A. Business and Performance

With a gross premium volume of TEUR 27,762,314 (previous year: TEUR 24,765,462), Hannover Re is the third-largest reinsurer in the world. Hannover Re transacts all lines of Property & Casualty and Life & Health reinsurance. Its global presence and activities across all lines of reinsurance business allows the company to achieve an efficient risk diversification.

We are thoroughly satisfied with the development of business in the 2021 financial year. With Group net income of TEUR 1,231,334 (TEUR 883,073) we actually surpassed the anticipated level of more than TEUR 1,150,000.

In the 2021 financial year Hannover Re had to deal with, among other things, pandemic-related expenditures in Life & Health reinsurance and catastrophe losses in Property and Casualty reinsurance. Once again, Hannover Re demonstrated our robust risk-carrying capacity and profitability.

The gross premium in the Property & Casualty reinsurance business group grew by 16.3 % at constant exchange rates, comfortably beating our guidance of around 5 %. The main factors here were the favourable market climate and improved prices. On the other hand, no pandemic-related losses were recorded for our account overall beyond the reserves set aside.

In the Life & Health reinsurance business group, Hannover Re was able to grow the gross premiums considerably more strongly than the anticipated guidance of at least 3 % with an increase of 5.5 % adjusted for exchange-rate effects. The result was, however, impacted by the effects of the pandemic in the financial year just ended. Altogether, the expenditures incurred here amounted to TEUR 582,000.

Against the backdrop of the continued challenging state of global financial markets, we are highly satisfied with the performance of our investments. The ordinary investment income excluding interest on funds withheld and contract deposits amounting to TEUR 1,555,591 as at 31 December 2021 came in significantly higher than in the previous year (TEUR 1,240,420) and was thus even slightly ahead of our expectations. Income from fixed-income securities reflected above all sharply higher inflation expectations, leading to increased amortisation amounts in our portfolio of inflation-linked bonds. We also booked substantially higher distributions from our investments in private equity. Our real estate and real estate funds similarly contributed to our result with slightly higher earnings. The income recognised from at equity-valuation declined to TEUR 35,743 (TEUR 88,129), primarily reflecting special income booked in the previous year associated with measurement of one of our participating interests. Interest on funds withheld and contract deposits increased to TEUR 268,250 (TEUR 221,764). Impairments and depreciation totalling TEUR 88,810 (TEUR 129,393) were taken. On the whole, the sectors hardest hit by the pandemic did not play a significant role in our investment portfolio. Depreciation on directly held real estate was slightly higher at TEUR 38,402 (TEUR 36,609) due to the growth of the portfolio. Net realised gains on disposals totalled TEUR 281,026 (TEUR 329,610). The high level of hidden reserves due to low interest rates made itself felt in our portfolio of fixed-income securities, again benefiting the net realised gains. In addition, we generated pleasing realised gains in connection with the reorganisation of our high-yield portfolio. In the United States and East Asia we also very successfully made the most of conditions on real estate markets to dispose of two large properties. The sale of some of our equity funds as part of portfolio restructuring measures at the beginning of the year was also a highly positive factor in our net realized gains. Altogether, the unrealised gains in our assets recognised at fair value through profit or loss amounted to TEUR 36,114 (TEUR 64,113). Our extreme mortality cover, tranches of which we have brought to the capital market regularly since 2013, is recognised under this item in a positive amount of TEUR 43,866 (TEUR 3,673). The investment income of TEUR 1,943,011 (TEUR 1,685,468) was 15.3 % higher

than in the comparable period. Thereof, income from assets under own management accounted for TEUR 1,674,761 (TEUR 1,466,358).

B. System of Governance

Hannover Re has an effective system of governance, which provides for sound and prudent management. Written guidelines are in place for all significant business events. The key functions pursuant to § 26 and §§ 29-31 of the Insurance Supervision Act (VAG) have been set up, entrusted with the tasks described in Section B and equipped with appropriate resources.

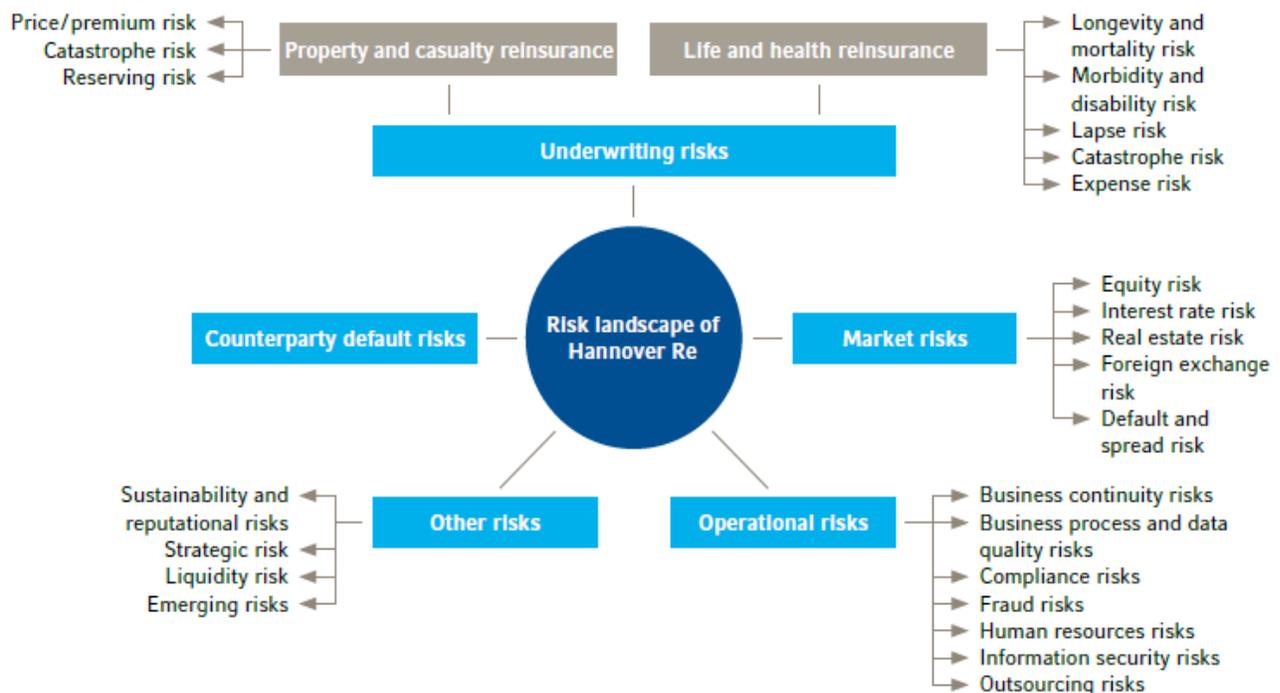
The Executive Board has established a committee, which supports the assessment of the system of governance. Based on the assessment conducted by the committee, the Executive Board has reached the conclusion that the system of governance of Hannover Re is appropriate considering the scope and complexity of its business activities and the inherent risks.

The individual elements of the system of governance of Hannover Re are explained in Section B.

C. Risk Profile

In the context of its business operations Hannover Re enters into a broad variety of risks. These risks are deliberately accepted, steered and monitored. They specifically concern underwriting risks pertaining to Property & Casualty and Life & Health as well as capital market risks, liquidity risks and counterparty default risks. In addition, Hannover Re faces operational, strategic, sustainability and reputational risks. In Section C, we describe the sources and management of these risks. We also explain how we handle potential future risks (emerging risks).

Risk landscape of Hannover Re



Hannover Re applies the static volatility adjustment according to §82 of the Insurance Supervision Law VAG. This is intended to mitigate the effect of temporary value fluctuations due to credit spread movements on the bond market. In order to capture this effect adequately for the calculation of the required capital Hannover Re uses the dynamic volatility in its internal model.

The solvency capital requirements (SCR) as of 31 December 2021 are shown in the following table. The SCR includes the impact from the dynamic volatility adjustment for both reference dates. The impact of the volatility adjustment is displayed separately in Section D.2 as well as in the annex QRT S.22.01.21.

Solvency Capital Requirement (SCR)
in TEUR

Solvency Capital Requirement	2021	2020
Underwriting risk - Property & Casualty	5,473,543	4,591,368
Underwriting risk - Life & Health	3,329,734	3,144,899
Market risk	4,874,756	4,395,687
Counterparty default risk	468,041	449,028
Operational risk	626,903	548,416
Diversification	-5,238,598	-4,624,308
Total risk (pre-tax)	9,534,379	8,505,090
Deferred tax	2,630,225	2,314,666
Total risk (post-tax)	6,904,154	6,190,424

The required capital is calculated based on the approved internal model. At present, our most significant risks are the default and spread risks within the market risks, the reserving and catastrophe risks within the underwriting risks of Property and Casualty reinsurance and the longevity and mortality risks within the underwriting risks of Life & Health reinsurance. In general, annuity portfolios are adversely impacted by improvements in mortality, while death benefit portfolios are adversely affected by deteriorations in mortality.

Overall, the required capital increased in the course of the year. This was principally driven by the larger business volumes, which have led to an increase in underwriting risks and market risks. The weaker euro against foreign currencies also contributed to this increase.

The underwriting risks in Property and Casualty reinsurance increased primarily as a consequence of higher premium and reserves. The enlarged volumes are driven by the business growth, the loss expenditure and associated higher reserves as well as stronger foreign currencies.

The business expansion in the areas of longevity and morbidity risks as well as the appreciation of foreign currencies lead to an increase in underwriting risks in Life & Health reinsurance.

The increase in the market risk reflects first and foremost the larger volume due to higher market values and new investments in the areas of private equity and real estate. The increased volumes of fixed-income securities as a result of positive operating cash flows are a further factor.

A higher volume of recoverables from retrocessionaires was the main driver for the increase in counterparty default risks.

The increase in operational risk can be attributed to an increase in those scenarios which are driven by the overall business volume and thus increase as business grows.

The risk monitoring and control mechanisms are presented in Section C.

In respect of the Covid-19 pandemic, the Crisis Management Team set up in 2020 continued to manage response to Covid-19 and related measures in 2021. Business travel remained constrained. Working from home – which applied to large parts of the workforce – went smoothly, in part thanks to the use of videoconferencing and extensively digitalised business processes. Consequently, in 2021 we once again did not identify any material impacts of the Covid-19 pandemic on our operations.

We continue to evaluate our financial strength and profitability on a regular basis using stress tests and sensitivity analyses and will take measures as needed to reduce risks or strengthen our equity resources. In this regard, the largest reserves on the reinsurance side were for coverage of business interruption, excess mortality, credit insurance and event cancellations. With the pandemic still ongoing, any forecasts are still subject to considerable uncertainty.

In line with regulatory requirements, this report has a focus on the financial year 2021. Developments since year-end 2021 include the Russian invasion on the territory of Ukraine starting in February 2022. The impact of this war and its consequences cannot be assessed at the present in full detail. Major geopolitical shifts are to be expected. Substantial volatilities at the financial markets including high commodity prices have been observed. Most reinsurance treaties have some form of coverage exclusion for losses from war. However, specialty lines provide these covers under certain circumstance. Apart from risk of losses from these lines, increasing inflation and cyber activities pose additional risks. Investments are affected by the developments at the financial markets. The full scope of implications is currently not known. Hannover Re has set up a continuous monitoring of the situation and has implemented the imposed sanctions.

D. Valuation for Solvency Purposes

For the purposes of calculating the eligible own funds, Hannover Re values the assets and liabilities pursuant to the provisions of §§ 74 et seq. of the Insurance Supervision Act (VAG), i.e. in accordance with Solvency II.

The valuation for Solvency purposes is based on fair value principles (market value). Insofar as IFRS values appropriately reflect the fair value of individual assets or liabilities, they are applied.

Technical provisions pursuant to Solvency II differentiate significantly from the definition of provisions pursuant to the International Financial Reporting Standards (IFRS), both in terms of structure and in relation to the calculation rules. A comparison of IFRS and Solvency II technical provisions is shown as well as a comparison of current technical provisions under Solvency II and those calculated last year.

The Technical Provisions Life & Health include adjustments for already incurred as well as expected future claims of the Covid-19 pandemic. Nevertheless, there is a certain risk of higher claims in the near future and an adverse development in mortality and morbidity rates from long-term consequences for people suffering from Covid-19.

Section D explains the details of the valuation for solvency purposes.

E. Capital Management

Hannover Re's solvency ratio amounted to 243 % as of reporting date 31 December 2021. Hannover Re endeavours at all times to maintain a solvency ratio of at least 180 %, and thus

exceeds the requirements of 100 % stipulated by the supervisory authority. In addition, a threshold value of 200% has been defined. If the Solvency Ratio falls below this threshold Hannover Re will adopt measures aimed at either strengthening the company's own funds or reducing the risk, or both.

The solvency ratio with and without application of the volatility adjustment is continuously monitored and also assessed as part of planning activities and in the event of large transactions. During the financial year 2021, the solvency ratio ranges above the threshold of 200 %. Further information on the calculation of the solvency ratio can be found in Section E.

Own funds include subordinated (Tier 1 and 2) capital. Ancillary own funds were not in use by Hannover Re as at 31 December 2021.

Hannover Re uses an approved full internal model for the purposes of calculating the Solvency Capital Requirement (SCR). The individual risk categories are aligned with the risk modules of the standard formula. The internal model is applied in a broad range of management and decision-making processes. The future development of Solvency and Minimum Capital Requirements are estimated at regular intervals as part of the planning process.

Section E explains the details of capital management.

A. Business and Performance

A.1 Business

A.1.1 Business model

With a gross premium volume of more than TEUR 27,762,314, the Hannover Re Group is the third-largest reinsurer in the world. Hannover Rück SE is a European Company, Societas Europaea (SE), headquartered in Hannover, Germany. We transact reinsurance in our Property & Casualty and Life & Health business groups.

The strategy pursued in both Property & Casualty and Life & Health reinsurance supports our Group's paramount mission, namely: "Striving for sustainable outperformance". Our entire business operations are geared to our goal of being the preferred business partner for our clients. It is for this reason that our clients and their concerns form the focus of our activities.

We also generate competitive advantages to the benefit of our clients and shareholders by conducting our reinsurance business with lower administrative expenses than our peers. In this way we deliver above-average profitability while at the same time being able to offer our customers reinsurance protection on competitive terms.

Furthermore, we strive for the broadest possible diversification and hence an efficient risk balance. This is achieved by accepting reinsurance risks with generally little or no correlation in our Property & Casualty and Life & Health business groups across all lines of business as well as by maintaining a global presence. In conjunction with efficient capital management, this is the key to our comparatively low cost of capital.

Guided by a clearly defined risk appetite, the Executive Board steers the company using risk management techniques so as to be able to act on business opportunities while securing our financial strength on a lasting basis.

In the Property & Casualty reinsurance business group we consider ourselves to be a reliable, flexible and innovative market player that ranks among the best in any given market. Cost leadership, effective cycle management and superlative risk management are the key elements of our competitive positioning.

In the Life & Health reinsurance business group we are recognised – as customer surveys confirm – as one of the top players for traditional covers and a leading provider of structured solutions. We achieve this standing by opening up new markets for our company and by identifying trends in order to anticipate the future needs of our customers.

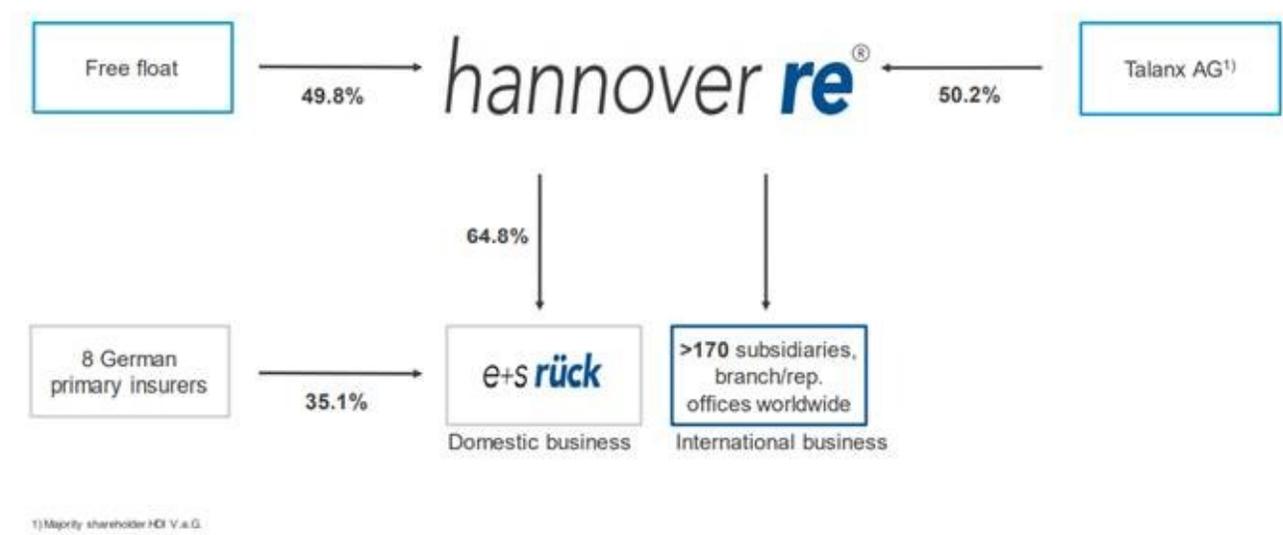
Through its global presence and activities Hannover Re is directly or via affiliates affected by various foreign fiscal and regulatory developments.

A.1.2 Headquarters, supervisors and auditors

Hannover Rück – as the parent company of the Hannover Re Group – is a European stock corporation, Societas Europaea (SE), with its headquarters located in Karl-Wiechert-Allee 50, 30625 Hannover, Germany, and has been entered in the Commercial Register of the District Court of Hannover under the number HR Hannover B 6778. A rounded 50.2 % of Hannover Rück SE

shares are held by Talanx AG, Hannover, which in turn is majority-owned – with an interest of 79.0 % – by HDI Haftpflichtverband der Deutschen Industrie V.a.G. (HDI), Hannover.

Shareholders, subsidiaries and branches



Shareholder
 Subsidiaries, branches

Hannover Re as well as Talanx and HDI are subject to the Federal Financial Supervisory Authority (BaFin).

Address of Federal Financial Supervisory Authority (BaFin)

Graurheindorfer Straße 108
 53117 Bonn
 Germany

alternatively:
 Postbox 1253
 53002 Bonn
 Germany

Contact details of Federal Financial Supervisory Authority (BaFin)

Phone +049 22 8 / 41 08-0
 Fax +049 22 8 / 41 08-15 50

E-mail poststelle@bafin.de or De-Mail poststelle@bafin.de-mail.de

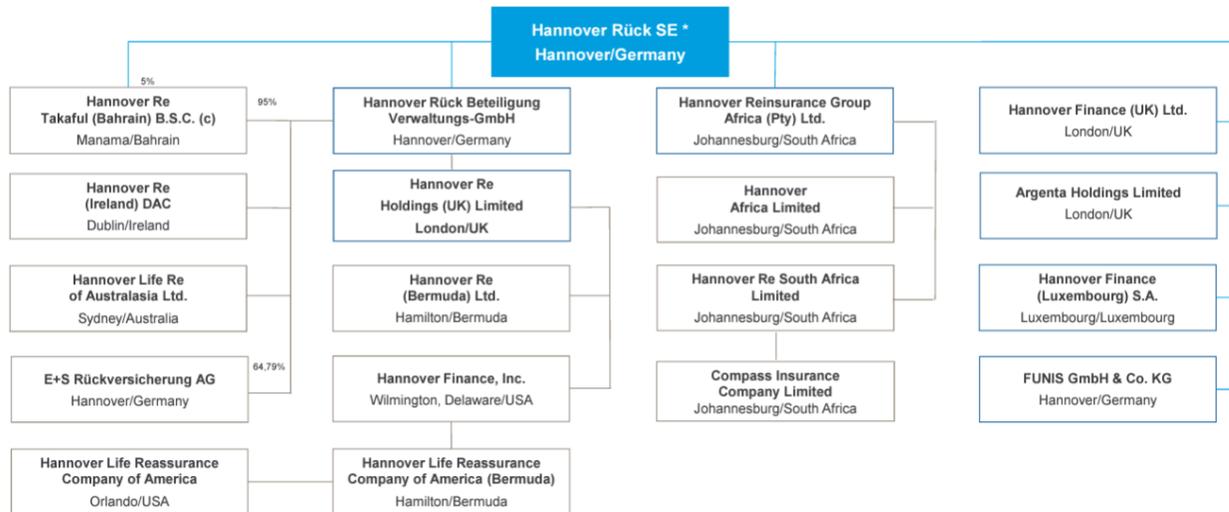
The Group auditor appointed for Hannover Re within the meaning of Section 318 of the German Commercial Code (hereafter referred to as HGB) is PricewaterhouseCoopers GmbH, Wirtschaftsprüfungsgesellschaft, Fuhrberger Straße 5, 30625 Hannover.

A.1.3 Group structure

The company's network consists of more than 170 subsidiaries, affiliates, branches and representative offices worldwide with 3,346 staff.

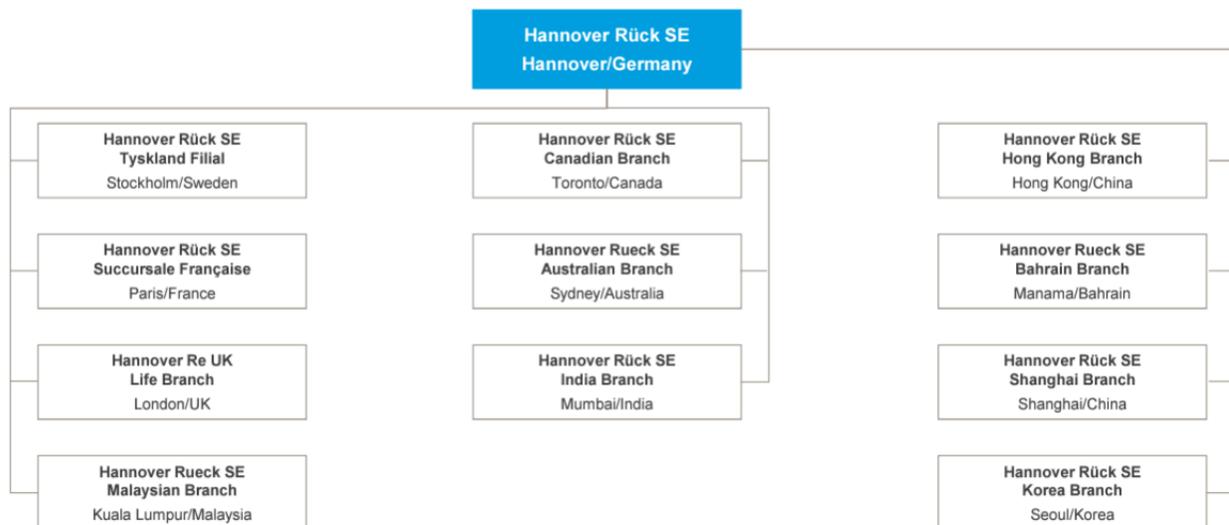
Subsidiaries and branches of Hannover Rück SE are presented in the following charts.

Subsidiaries of Hannover Rück SE



* Unless otherwise stated, the shareholding is 100%

Branches of Hannover Rück



During 2021, Hannover Re has sold its minority shareholdings in HDI Global Specialty SE.

A.2 Performance

As the third-largest reinsurer in the world, Hannover Re has a far-reaching international network and extensive underwriting expertise. On this basis, we are able to offer our customers traditional, tailor-made and innovative reinsurance solutions and we work with them to open up new business opportunities. For a number of years now the global reinsurance markets have been fiercely competitive and overshadowed by rising costs from natural catastrophes. Above and beyond this, the low interest rate environment, higher inflation and the Covid-19 pandemic present further challenges for the industry. In the 2021 financial year we had to deal with, among other things, pandemic-related expenditures in life and health reinsurance and catastrophe losses in property and casualty reinsurance. Once again, we demonstrated our robust risk-carrying capacity and profitability. All in all, the business development was pleasing.

The operating profit (EBIT) improved sharply by 42.9 % to EUR 1,734.8 million (EUR 1,214.1 million). Group net income was up by 39.4 % at EUR 1,231.3 million (EUR 883.1 million). We thus achieved our Group earnings guidance of EUR 1.15 billion to EUR 1.25 billion. Earnings per share stood at EUR 10.21 (EUR 7.32).

Gross premium in the Property & Casualty reinsurance business group grew by 16.3 % at constant exchange rates, comfortably beating our guidance of around 5 %. The main factors here were the favourable market climate and improved prices. On the other hand, no pandemic-related losses were recorded for our account overall beyond the reserves set aside in 2020. Nevertheless, the burden of large losses surpassed our budgeted expectation of EUR 1.1 billion. This was due primarily to substantial losses from natural catastrophes in the third quarter. The combined ratio in property and casualty reinsurance improved in the financial year just ended to 97.7 % (previous year: 101.6 %). Due to the considerable major loss expenditure and on account of the protracted low interest rate environment, the sustained improvement in prices and conditions for reinsurance protection in property and casualty business continued, although at the same time retrocession covers saw a moderate price increase as the year progressed. Thanks to its comparatively low administrative expenses and cost of capital as well as its above-average financial strength, Hannover Re has been and remains able to successfully assert itself in the market. Based on our positioning as one of the largest and most robustly capitalised reinsurers in the world, we enjoy sustained very good access to profitable business.

In our Life & Health reinsurance business group we were able to grow the gross premiums considerably more strongly than our anticipated guidance of at least 3 % with an increase of 5.5 % adjusted for exchange-rate effects. The result was, however, impacted by the effects of the pandemic in the financial year just ended. Altogether, the expenditures incurred here amounted to EUR 582.0 million. The bulk of them stemmed from illnesses and deaths in the United States, our largest single market, and South Africa. The pandemic-related losses were opposed by positive one-time income of EUR 131.7 from a restructuring measure in the US mortality book as well as a positive special effect of EUR 121.9 million in business with longevity covers. The pandemic-related strains for the entire insurance industry further boosted what had already been generally strong demand for reinsurance covers – including for example in financial solutions business, where we offer our customers individual reinsurance solutions designed to improve their solvency, liquidity and capital position.

The investment income generated by Hannover Re performed significantly better than expected – with income from assets under own management rising by 14.4 % to EUR 1,674.8 million (EUR 1,463.7 million) – and thus played an important part in the overall result for the year under review. Earnings benefited from, among other things, strong income from our portfolio of inflation-

linked bonds and from alternative investments such as private equity funds. The return on investment stood at 3.2 % and thus very clearly beat our target of more than 2.4 %, which we had revised upwards.

Other income contracted by 38.6 % to EUR 271.2 million (EUR 441.4 million). This was due to a decline in the balance of exchange gains and losses to EUR -77.5 million (EUR 149.1 million). This effect was, however, partially opposed by stronger income of EUR 386.7 million (EUR 342.4 million) from treaties recognised according to the deposit accounting method.

In addition, the following table shows the performance targets for the business years 2021 and the attained results.

Business group	Key data	Targets for 2021	2021
	Return on equity ¹	900 bps above risk-free	10.8%
	Solvency ratio ^{2,3}	≥ 200%	243.1%
Property & Casualty reinsurance	Gross premium growth	≥ 5% ⁴	16.3%
	EBIT growth	≥ 5% ⁵	83.7%
	Combined ratio	≤ 96%	97.7%
	xRoCA ^{2,6}	≥ 2%	11.9%
Life & Health reinsurance	Gross premium growth	≥ 3% ⁴	5.5%
	EBIT growth	≥ 5% ⁵	-43,2%
	Value of New Business (VNB) ^{2,7}	≥ EUR 250 million	EUR 326 million
	xRoCA ^{2,6}	≥ 2%	-11.3%

¹ Restated pursuant to IAS 8

² This information has not been audited by the independent auditor

³ According to our internal capital model and Solvency II requirements

⁴ Average annual growth at constant exchange rates

⁵ Average annual growth

⁶ Excess return (one-year economic profit in excess of the cost of capital) on allocated economic capital

⁷ Based on Solvency II principles; pre-tax reporting

For further information regarding our performance please refer to our Annual Report. You can receive the Annual Report via download from our homepage (<https://annual-report.hannover-re.com/>).

B. System of Governance

B.1 General Information on the System of Governance

The Hannover Re Group has an effective system of governance in place, which provides for sound and prudent management. The main elements of the System of Governance are described in the following sections.

B.1.1 Governance structure

B.1.1.1 Our administrative, management or supervisory body

Our administrative, management or supervisory body consists of the Executive Board and the Supervisory Board.

Executive Board

The Executive Board consists of no less than two persons. Furthermore, it is up to the Supervisory Board to determine the number of members of the Executive Board. The members of the Executive Board are appointed by the Supervisory Board for a term of five years.

The following overview shows the allocation of the areas of responsibility to the members of the Executive Board as of 31 December 2021.

Members of the Executive Board

Chairman	Chief Financial Officer	Property & Casualty Reinsurance			Life & Health Reinsurance	
Jean-Jacques Henchoz	Clemens Jungsthöfel	Dr. Michael Pickel	Sven Althoff	Silke Sehm	Claude Chèvre	Dr. Klaus Miller
Compliance	Finance and Accounting	Property & Casualty Reinsurance: Asia, Australia and Middle East.	Coordination of Property & Casualty Business Group	Property & Casualty Reinsurance: Continental Europe and Africa	Life & Health Reinsurance: Africa, Asia, Australia, Latin America, Middle East, Western and Southern Europe	Life & Health Reinsurance: North America, UK, Ireland, Northern, Eastern and Central Europe
Controlling	Information Technology	Germany, Switzerland, Austria and Italy.	Property & Casualty Reinsurance: North America.	Catastrophe XL (Cat XL)	Longevity Solutions	
Innovation Management	Investment and Collateral Management	Latin America and Iberian Peninsula.	United Kingdom, Ireland and London Market.	Structured Reinsurance and Insurance-Linked Securities		
Human Resources Management	Facility Management	Run-Off Solutions	Aviation and Marine	Retrocessions		
Internal Auditing		Agricultural Risks	Credit, Surety and Political Risks			
Risk Management & Actuarial		Group Legal Services	Facultative Reinsurance			
Corporate Development			Quotations			

The four (Solvency II) key functions are allocated to the Chairman of the Executive Board. For further information on key functions (Solvency II) please refer to the following sections of chapter B.

Supervisory Board

The Supervisory Board shall consist of nine members appointed by the AGM. Of these nine members, three shall be appointed on recommendation by the employees. The AGM is bound by these recommendations for the appointment of the employees' representatives. Apart from those, the AGM can freely propose candidates.

Every member of the Supervisory Board can resign from his membership by adhering to a notice period of one month, without any obligation to specify an important reason, by written notice to the Company, represented by the Management Board and the Chairman of the Supervisory Board (if notice is given by the Chairman himself, to his deputy). The Chairman of the Supervisory Board may choose to forgo adherence to this notice period.

The appointment for a successor of a member who has resigned prior to termination of his term shall be for the remaining term of the resigned member.

As of 31 December the Supervisory Board consists of the following members:

Members of the Supervisory Board and membership in committees

Members of the Supervisory Board	Standing Committee	Finance and Audit Committee	Nomination Committee	Staff representative
Torsten Leue, Chairman	X	X	X	
Herbert K. Haas, Deputy Chairman	X	X	X	
Natalie Bani Ardalan				X
Frauke Heitmüller				X
Ilka Hundeshagen				X
Dr. Ursula Lipowski		X		
Dr. Michael Ollmann				
Dr. Andrea Pollak			X	
Dr. Erhard Schipporeit	X			

The Supervisory Board may form committees from among its members and authorise them to pass resolutions, to the extent permitted by law.

The Supervisory Board received an analysis of the 2020 results in Property & Casualty and Life & Health reinsurance as well as a presentation from the Executive Board covering the profit expectations for the 2021 financial year and the operational planning for the 2022 financial year. In addition, the Chairman of the Supervisory Board was constantly kept informed by the Chairman of the Executive Board of major developments and impending decisions as well as of the company's risk situation. In summary, the Supervisory Board was involved in decisions taken by the Executive Board and assured itself of the lawfulness, regularity and efficiency of the company's management

as required by our statutory responsibilities and those placed upon us by the company's Articles of Association.

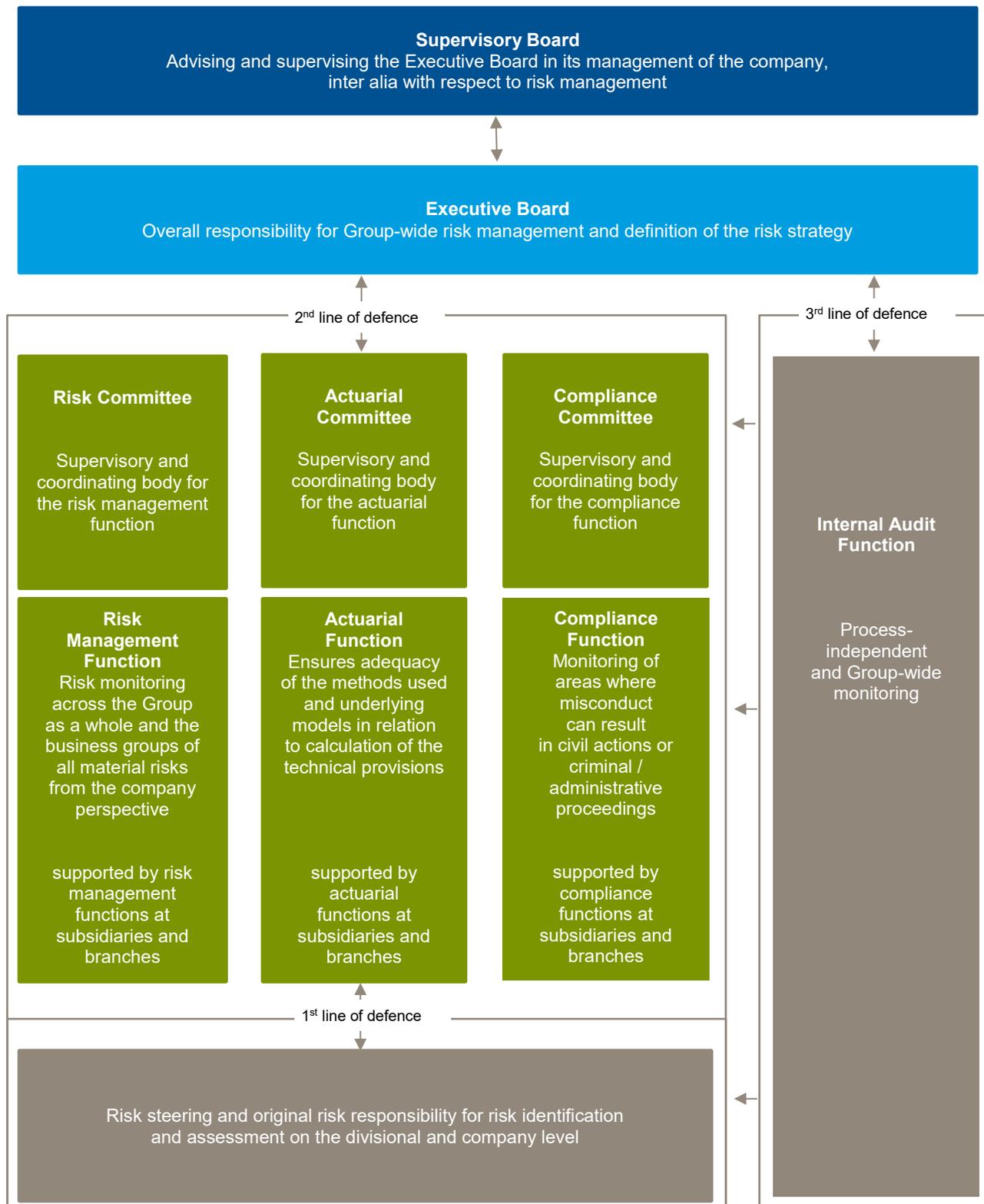
No audit measures pursuant to § 111 Para. 2 Sentence 1 Stock Corporation Act (AktG) were required in the 2021 financial year.

There were no changes in the composition of the Supervisory Board or its committees in the year under review. The term of office of the company's Supervisory Board ends pursuant to § 10 (3) of the Articles of Association of Hannover Re at the end of the General Meeting that ratifies the acts of management for the 2023 financial year.

Nor were any changes made to the composition of the Executive Board in the year under review.

B.1.1.2 Key functions

The following graph provides an overview of the main tasks and the interaction of the key functions:



Hannover Re Group has set up group-wide risk management functions and bodies to safeguard an efficient risk management system. The organisation and interplay of the individual functions in risk management are crucial to our internal risk steering and control systems. The central risk management functions are closely interlinked in our system, and the roles, tasks and reporting channels are clearly defined in terms of the so-called “3 lines of defence” model. The first line of defence consists of risk steering and the original risk responsibility on the divisional or company level. Risk management ensures the second line of defence, i.e. the risk monitoring. It is supported in this regard by the actuarial function and the compliance function. The third line of defence is the process-independent monitoring performed by the internal audit function.

All key functions are equipped with appropriate resources and skills. The reporting lines to one another and to the Board Member responsible for the division respectively to the Executive Board have been clearly defined.

B.1.2 Remuneration policy

B.1.2.1 Remuneration of the Executive Board

The amount and structure of the remuneration of the Executive Board are geared to the size and activities of the company, its economic and financial position, its success and future prospects as well as the customariness of the remuneration, making reference to the benchmark environment (horizontal) and the remuneration structure otherwise applicable at the company (vertical). The remuneration is also guided by the tasks of the specific member of the Executive Board, his or her individual performance and the performance of the full Executive Board.

With an eye to these objectives, the remuneration system has two components: fixed salary / non-cash compensation and variable remuneration. The variable remuneration is designed to take account of both positive and negative developments. Overall, the remuneration is to be measured in such a way that it reflects the company’s sustainable development and is fair and competitive by market standards. In the event of 100 % goal attainment, the remuneration model provides for a split composed of roughly 40 % fixed remuneration and roughly 60 % variable remuneration.

The profit- and performance-based remuneration (variable remuneration) is contingent on certain defined results and the attainment of certain set targets. The set targets vary according to the function of the Board member in question. The variable remuneration consists of a profit bonus and a performance bonus. The variable remuneration is defined at the Supervisory Board meeting that approves the consolidated financial statement for the financial year just ended.

The total remuneration received by the Executive Board of Hannover Re Group on the basis of its work for Hannover Rück SE and the companies belonging to the Group amounts to TEUR 9,502.

B.1.2.2 Remuneration of the Supervisory Board

The remuneration of the Supervisory Board is determined by the Annual General Meeting of Hannover Rück SE and regulated by the Statute of Hannover Rück SE.

The total remuneration received by the Supervisory Board of Hannover Rück SE amounts to TEUR 1,137.

B.1.2.3 Remuneration of staff and senior executives

The remuneration scheme for senior executives below the Executive Board (management levels 2 and 3) and for key function holders in Germany belonging as a matter of principle to the ranks of senior executives consists of a fixed annual salary and a system of variable remuneration. This is comprised of a short-term variable remuneration component, the annual cash bonus, and a long-term share-based remuneration component, the Share Award Plan.

Members of staff on the levels of Chief Manager, Senior Manager and Manager are also able to participate in a variable remuneration system through the Group Performance Bonus (GPB).

B.1.3 Related party transactions

Talanx AG holds an unchanged majority interest of 50.22% in Hannover Rück SE. For its part, HDI Haftpflichtverband der Deutschen Industrie Versicherungsverein auf Gegenseitigkeit (HDI), Hannover, holds a stake of 79.0% in Talanx AG.

The business relationship between Hannover Rück SE and its subsidiary E+S Rückversicherung AG is based on a cooperation agreement. A retrocession by Hannover Rück SE to E+S Rückversicherung AG exists in property and casualty reinsurance. E+S Rückversicherung AG and Hannover Rück SE bear exclusive responsibility for German business and for international markets respectively.

The members of the governing bodies did not receive any advances or loans in the year under review. Nor were there any other material reportable circumstances or contractual relationships as defined by IAS 24 between companies of the Hannover Rück and the members of the governing bodies or their related parties in the year under review.

B.2 Fit and Proper Requirements

B.2.1 Requirements

A framework directive pertaining to the fulfilment of the Fit & Proper requirements in the Hannover Re Group was established by the Executive Board.

B.2.2 Description of requirements

The professional qualification (fitness) of individuals with key functions refers to a professional qualification suitable for the respective position as well as skills and experience, which are necessary for a robust and cautious management approach, and for the fulfilment of the position. The appropriateness is assessed according to the principle of proportionality, and takes into account the company-individual risks along with the type and scope of business operations. Specialist fitness requirements stemming from established supervisory practices are to be complied with by those individuals who actually head up the company, and the members of the Supervisory Board. Collective "fitness" requirements have been established for mutual controlling and monitoring. The requirements placed on the professional qualification of those holding key functions are closely linked with the special features of the respective governance tasks.

Individuals with key functions must, as part of personal reliability (propriety), act responsibly and with integrity, and carry out activities both dutifully and with the necessary level of care. Conflicts of interest must be avoided and the individual must not have demonstrated a lack of responsibility in the form of criminal actions prior to their nomination / appointment. There is no requirement for personal reliability to be positively established. It will be assumed, whenever there are no observable facts indicating the contrary. Unreliability is only to be assumed if personal circumstances according to general life experience give reason to believe that this could undermine the thorough and proper exercising of the function.

For Hannover Re, the circle of individuals entrusted with key tasks consists of persons who

- actually head up the company (Executive Board members) including the authorised representatives of an EU / EEA branch,
- hold other key functions (members of the Supervisory Board, owners of one of the key functions including compliance, internal audit, risk management, actuarial function).

With regard to their various roles, these individuals are required to provide evidence of their professional qualifications in different areas as follows:

- Educational background
- Practical knowledge
- Management experience
- Language skills
- Required specialist knowledge in relation to the relevant key function
- Collective requirements

The required specific knowledge for owners of one of the key functions including compliance, internal audit, risk management, and actuarial mathematics is included in the referred role description.

In the event that key functions are outsourced, general requirements for this are defined within a group policy. The onus remains on the side of the outsourcing company to ensure that the individuals deployed by the service provider who are responsible for the key function have suitable professional qualifications and are personally reliable. In accordance with supervisory regulations, the outsourcing company has to appoint an outsourcing officer for this purpose, who, where appropriate, is subject to registration with the regulatory body accordingly as the person responsible for the relevant key function within the company. The overseeing outsourcing official is hereby responsible for the proper fulfilment of the duties associated with the outsourcing of the key function.

B.2.3 Evaluation process

The requirements and reporting processes with respect to the supervisory authority correspond to the current standard processes based on the BaFin information sheets on professional competence and reliability.

Pursuant to the framework directive on the fulfilment of the Fit & Proper requirements, at the preliminary stage of recruiting new members of staff who will actually head up the company or hold other key roles, a detailed curriculum vitae will be submitted and a requirements profile set, which

detail and describe the necessary qualifications. The framework directive pertaining to the fulfilment of Fit & Proper requirements contains a checklist in the attachment, which is to be used in the assessment of the Fit & Proper requirements of these individuals. The requirements profile contains evidence of the following minimum requirements:

Description of the position with key functions:

- Performance catalogue (job description)
- Authority to make decisions
- Level of staff responsibility

Professional qualification (general):

- Level of education (commercial or vocational training)
- University degree or professional standard (such as, for example, for auditors or actuaries)
- Knowledge and understanding of business strategy
- Knowledge of the system of governance
- Foreign language skills, minimum of English language and other foreign languages where possible

Professional qualification (depending on the particular position):

- Industry experience
- Knowledge and understanding of the business model
- Ability to interpret accounting and actuarial data
- Knowledge and understanding of the regulatory frameworks affecting the company
- Expertise in personnel management, staff selection, succession planning

The professional and personal requirements for members of the Supervisory Board are comprised in a guideline document.

The procedure for assessing the transfer of tasks stipulates that, at the preliminary stage of recruiting new members of staff, a detailed curriculum vitae must be submitted and a requirements profile must be set, which contains the verification of predefined minimum requirements. The continual safeguarding of compliance with the relevant requirements is undertaken every five years in the form of an assessment of the requirements profile, undertaken by the responsible organisational unit.

As part of the event-driven assessment, any significant changes in the underlying parameters trigger an assessment of the compliance with the catalogue of requirements. This involves a differentiation of the characteristics deemed necessary in the person and in the position.

The assessment and control procedures are summarised in an overview, which contains the assessment cycle of the requirements profile and the responsibility for the assessment and duty to inform held by those individuals who actually head up the company, and those individuals who have other key functions.

B.3 Risk Management System including the Own Risk and Solvency Assessment

B.3.1 Strategy implementation

In the year under review, Hannover Re's Group strategy "Striving for sustainable outperformance" was adopted for the 2021–2023 strategy cycle. Our strategy is based on the interplay between solid fundamentals, performance drivers and performance enablers. Robust governance and strong risk management, integrated compliance and corporate social responsibility establish the foundation for our business operations.

The risk strategy, the risk register and the system of limits and thresholds – as integral components of our Risk and Capital Management Guideline – are reviewed at least once a year. In this way we ensure that our risk management system is kept up-to-date.

We manage our total enterprise risk such that we can expect to generate positive IFRS Group net income with a probability of 90% p.a. Our solvency ratio is subject to a limit of 180% and a threshold of 200%. Countermeasures would be triggered if the solvency ratio were to fall below this threshold. These indicators are monitored using our internal capital model and the Executive Board is informed quarterly about adherence to these key parameters as part of regular reporting. The necessary equity resources are determined according to the requirements of our economic capital model, regulatory parameters, the expectations of rating agencies with respect to our target rating and the expectations of our clients. We maintain a capital cushion in order to be able to act on new business opportunities.

B.3.2 Risk capital

In the interests of our shareholders, clients and employees we strive to ensure that our risks remain commensurate with our capital resources. Our quantitative risk management provides a uniform framework for the evaluation and steering of all risks affecting the company as well as of our capital position. In this context, the internal capital model is our central tool. The internal capital model of the Hannover Re Group is a stochastic enterprise model. It covers all subsidiaries and business groups of the Hannover Re Group. The central variable in risk and enterprise management is the economic capital, which is calculated according to market-consistent measurement principles and also constitutes the basis for calculating the own funds under Solvency II.

Hannover Re calculates the required risk capital as the Value at Risk (VaR) of the change of economic capital over a period of one year with a confidence level of 99.5%, in accordance with Solvency II. Independently from the regulatory reporting requirements, Hannover Re calculates the regulatory capital requirements with a full internal model. This leads to according capital requirements for market risks, underwriting risks, counterparty default risks and operational risks.

We hold additional capital to meet the requirements of the rating agencies for our target rating and to be able to act flexibly on business opportunities. We strive for a rating from the rating agencies most relevant to our industry that facilitates and secures our access to all reinsurance business worldwide. Hannover Re is analysed by the rating agencies Standard & Poor's and A.M. Best as part of an interactive rating process. The current financial strength is assessed as "AA-" (Very Strong, stable outlook) by Standard & Poor's and "A+" (Superior, stable outlook) by A.M. Best. In the rating process, S&P as well as A.M. Best evaluate Hannover Re's risk management as an important aspect in the financial strength assessment.

B.3.3 Internal model governance

An overview of risk management's organisational structure is provided in Section B.1 above.

The risk management function is steered by the Risk Committee and the Chief Risk Officer.

Risk Committee

The scope of decision-making for the Risk Committee lies within the boundaries of risk appetite set by the Executive Board. Tasks include quality assurance of the ORSA process and monitoring of the implementation of risk-related measures. The Risk Committee also receives the model change reports according to the model change policy.

Chief Risk Officer

The Chief Risk Officer is the head of the risk monitoring function and member of the Risk Committee. The Chief Risk Officer coordinates the ORSA process and ensures the framework conditions of an effective risk management system. The CRO reports to the Chief Executive Officer and heads the division Group Risk Management.

B.3.4 Organisation of risk management and the tasks of the risk management function

An overview of risk management's organisational structure is provided in Section B.1 above.

The risk management function consists of three primary components: the Risk Committee, the Chief Risk Officer and the risk monitoring function.

Risk Committee

The tasks of the Risk Committee – the body charged with the monitoring and coordination of risk management – are derived from the Rules of Procedure regarding the Risk Committee. The scope of decision-making for the Risk Committee lies within the boundaries of risk appetite set by the Executive Board. Changes, and any instances of increase in risk appetite, require the approval of the Executive Board. Further tasks include quality assurance of the ORSA process and monitoring of the implementation of risk-related measures. The Risk Committee also receives the model change reports according to the model change policy.

Chief Risk Officer

The Chief Risk Officer is also the head of the risk monitoring function and member of the Risk Committee. The Chief Risk Officer coordinates the ORSA process and ensures the framework conditions of an effective risk management system.

Risk monitoring function

The risk monitoring function coordinates and bears responsibility for comprehensive monitoring (systematic identification, evaluation, monitoring and reporting) of all significant asset- and liability-related risks and the regular execution of the ORSA process (cf. section B.3.7). Furthermore, the risk monitoring function develops methods, standards and processes for the assessment and monitoring of risk.

The risk monitoring function fulfils its tasks objectively and independently for Hannover Re. There has been a change in the risk management system during the reporting period in respect of creation of a Reputational and Sustainability Risk Framework, due to the rising importance of topics related to and risks from sustainability.

B.3.5 Key elements of our risk management system

Our risk strategy and our Risk and Capital Management Guideline including the system of limits and thresholds for material risks of the Hannover Re Group describe the central elements of our risk management system. This is subject to a constant cycle of planning, action, control and improvement. Systematic risk identification, analysis, measurement, steering and monitoring as well as risk reporting are especially crucial to the effectiveness of the system as a whole.

This guideline describes, among other things, the major tasks, rights and responsibilities, the framework conditions and the risk control process. The rules, which are derived from the corporate strategy and the risk strategy, additionally take account of the regulatory requirements for risk management as well as international standards and developments relating to appropriate enterprise risk management. Group-wide risk communication and an open risk culture are important to our risk management. Regular global meetings attended by the actuarial units and risk management functions serve as a major anchor point for strategic considerations in relation to risk communication. Beyond that, the requirements by the risk management are stated in guidelines and policies, which are communicated Group-wide.

Risk identification

A key source of information for monitoring risks is the risk identification carried out on a periodic basis. All identified risks are documented in a central register containing all material risks. Risk identification takes the form of, among other things, structured assessments, interviews or scenario analyses. External insights such as recognised industry know-how from relevant bodies or working groups are incorporated into the process. Risk identification is important for ensuring that our risk management consistently remains up-to-date.

Risk analysis and assessment

In principle, every risk that is identified and considered material is assessed quantitatively. Only risk types for which quantitative risk measurement is currently impossible or difficult are assessed qualitatively (e.g. strategic, reputational or emerging risks). Qualitative assessment can take the form of, for example, expert evaluations. Quantitative assessment of material risks and the overall risk position is performed using the Hannover Re risk model. The model makes allowance for risk concentration and risk diversification.

Risk steering

The steering of all material risks is the task of the operational business units on the divisional and company level. In this context, the identified and analysed risks are either consciously accepted, avoided or minimised. The risk / reward ratio is factored into the division's decision. Risk steering is assisted by the parameters of the central and local underwriting guidelines and by defined limits and thresholds.

Risk monitoring

The monitoring of all identified material risks is a core task of Group Risk Management. This includes, inter alia, monitoring execution of the risk strategy as well as adherence to the defined limits and thresholds and to risk-related methods and processes. A further major task of risk monitoring is the ascertainment of whether risk steering measures were carried out and whether the planned effect of the measures is sufficient.

Risk communication and risk culture

Risk management is firmly integrated into our operational processes. It is assisted by transparent risk communication and the open handling of risks as part of our risk culture. Risk communication takes the form, for example, of internal and external risk reports, in the context of committee and project work, through information on current risk complexes in the intranet and training opportunities for staff. The regular sharing of information between risk-steering and risk-monitoring units is also fundamental to the proper functioning of risk management.

Risk reporting

Our risk reporting provides systematic and timely information about all material risks and their potential implications. The central risk reporting system consists primarily of regular risk reports, e.g. on the overall risk situation, adherence to the parameters defined in the risk strategy or on the capacity utilization of natural catastrophe scenarios. Complementary to the regular risk reporting, immediate internal reporting on material risks that emerge at short notice takes place as necessary.

Process-integrated / -independent monitoring and quality assurance

Irrespective of internally assigned competencies, the Executive Board is responsible for the orderly organisation of the company's business. This also encompasses monitoring of the internal risk steering and control system. Furthermore, the Executive Board is the owner of the economic capital model and is responsible for the approval of major model changes. Process-independent monitoring and quality assurance of risk management is carried out by the internal audit function and external instances (regulators, independent auditors and rating agencies). Most notably, the independent auditors review the trigger mechanism and the internal monitoring system. The entire system is rounded off with process-integrated procedures and rules, such as those of the internal control system.

B.3.6 Risk landscape

In the context of its business operations, the Hannover Re Group enters into a broad variety of risks. These risks are deliberately accepted, steered and monitored in order to be able to act on the associated opportunities. The parameters and decisions of the Executive Board with respect to the risk appetite of the Hannover Re Group, which are based on the calculations of risk-bearing capacity, are fundamental to the acceptance of risks. Through our business operations on all continents and the diversification between our Property & Casualty and Life & Health reinsurance business groups we are able to effectively allocate our capital in light of opportunity and risk considerations and generate a higher-than-average return on equity. Along with our principal business operations as a reinsurer of property & casualty and life & health business, we also transact primary insurance in selected niche markets as a complement to our core reinsurance business. Crucial importance attaches to our risk management in order to ensure that, among other

things, risks to the reinsurance portfolio remain calculable and also exceptional major losses do not have an unduly adverse impact on the result.

The risk landscape of Hannover Re encompasses:

- Underwriting risks in property & casualty and life & health reinsurance which originate from our business activities and manifest themselves inter alia in fluctuations in loss estimates as well as in unexpected catastrophes and changes in biometric factors such as mortality,
- Market risks which arise in connection with our investments and also as a consequence of the valuation of sometimes long-term payment obligations associated with the technical account,
- Counterparty default risks resulting from our diverse business relationships and payment obligations inter alia with clients, retrocessionaires and banks,
- Operational risks which may derive, for example, from deficient processes or systems as well as
- Reputational and sustainability, liquidity, strategic and emerging risks.

B.3.7 Own Risk and Solvency Assessment (ORSA)

The ORSA cycle mirrors our circuit of planning, action, monitoring und enhancement, and comprises the elements listed in Section B.3.5.

The ORSA report is prepared on an annual basis and summarizes the results of the last ORSA cycle. Here, the internal model is used – especially for the calculation of solvency requirements in comparison to the allocated risk capital. The interplay between risk and capital management is highlighted here. Finally, it explains the inclusion of the Executive Board into the ORSA process and its use as one of the controlling instruments at the company's disposal.

The ORSA report is coordinated by the risk management division and is subject to both assessment and approval by the Executive Board. In addition, the report is submitted to the Supervisory Board and the BaFin.

Risk reporting

The risk monitoring function produces regular reports, which show the company's risk position. These reports form the basis for the solvency and risk assessments described in the ORSA report. Therein, all employees contributing to the above procedures are involved as data and information suppliers, and consulted for quality assurance.

The Executive Board takes the ORSA results into consideration when assessing the degree of accomplishment of defined business targets; if needed, changes in the business process take place. This establishes a surveillance circuit for business enhancements and risk mitigation.

In the event that - because of a material change in risk profile - an ad hoc ORSA report is necessary, Hannover Re has defined specific procedural plans and responsibilities. Hannover Re conducted several ad-hoc analyses in 2021 as a response to the Covid-19 crisis. The analyses included additional stress tests and sensitivities.

In addition to the internal risk reporting and the ORSA report, we generate this annual Solvency and Financial Condition Report (SFCR) and an annual Regular Supervisory Report (RSR).

B.4 Internal Control System

B.4.1 Elements of the Internal Control System

The internal control system (ICS) is an important subsystem that serves, among other things, to secure and protect existing assets, prevent and reveal errors and irregularities and comply with laws and regulations. The core elements of Hannover Re's ICS are documented in a guideline that establishes a common understanding of the differentiated execution of the necessary controls.

The guideline defines concepts, stipulates responsibilities and provides a guide for the description of controls. The ICS consists of systematically structured organisational and technical measures and controls within the enterprise. These include, among other things, the principle of dual control, separation of functions, documentation of the controls within processes as well as technical plausibility checks and access privileges in the IT systems.

The proper functioning of the ICS necessitates the involvement of management, executive staff and employees on all levels. The financial reporting must satisfy international and national financial reporting standards as well as regulatory requirements. This is safeguarded in the area of accounting and financial reporting by processes with integrated controls which ensure the completeness and accuracy of the annual and consolidated financial statements. A structure made up of differentiated criteria, control points and materiality thresholds assures our ability to identify and minimise the risk of errors in the annual and consolidated financial statements at an early stage.

B.4.2 Compliance Function

Compliance Management System

Hannover Re defines Compliance as the observance of the applicable statutory and regulatory provisions and intra-company guidelines.

Hannover Re implemented a Compliance Management System (CMS) to ensure overall Compliance. It is based on accepted international standards and consists of six elements: Compliance Culture, Compliance Function, Compliance Risk, Compliance Programme, Compliance Communication, Compliance Monitoring and Improvement.

Compliance Culture

Compliance Culture provides the basis for the adequacy and effectiveness of the CMS. The importance of Compliance is not only reflected in the Code of Conduct (CoC), it is an explicit part in the group strategy, which in turn further emphasises the importance of Compliance from the management perspective (Tone from the Top).

In addition, in 2021 the Tone from the Top is further communicated during our Compliance Campaign by publishing dedicated individual Compliance videos by the members of our Executive Board and the Chief Compliance Officer.

Compliance Function

Hannover Re has opted for a decentralised approach towards the implementation of the Compliance function, i.e. the tasks of the Compliance function will not only be fulfilled by one department, but by various departments. The Compliance function is therefore located in several departments.

The head of the Hannover Re's department Group Legal Services (GLS) is the holder of the key Compliance Function at the same time.

The Executive Board of Hannover Re has established the Compliance division within GLS for the fulfilment of some of the tasks of the Compliance function. The Chief Compliance Officer is authorised to appoint further members of staff from GLS for the purpose of fulfilling compliance function tasks as necessary.

In the process of planning and organising the CMS, the particularly sensitive Compliance topics were identified through the employment of a risk-based approach and past experiences gained primarily by the Compliance and Internal Audit department (Group Auditing, GA). The scope is assessed annually. The Chief Compliance Officer will propose an appropriate adjustment to the Executive Board if a change in assessment occurs.

The key areas of Compliance as mentioned above are monitored by the Compliance function at Hannover Re. Therefore, different departments work together in order to fulfil this function. E.g. employment law remains the responsibility of the Human Resources department, tax law falls under the jurisdiction of the Tax department of Hannover Re.

The handling of particularly Compliance-relevant topics by the departments, who collectively form the Compliance function, comprises at the least the following activities:

- Identification and evaluation of risks, which are associated with the non-compliance of statutory requirements (risk control)
- Evaluation of the possible consequences for the company's activity as a result of changes in legal operating conditions (risk relating to changes in the law/early warning)
- Consultation with regard to compliance with the legal provisions which apply to company activity
- Assessment of the appropriateness of implemented measures in relation to compliance with statutory requirements (monitoring function)

Compliance Risk

The term Compliance Risk is commonly referred to as the risk of legal or regulatory sanctions due to non-compliance with laws, regulations and regulatory requirements or due to a serious financial loss or a loss of reputation.

The Compliance Risk assessment is based on the Compliance Risk Matrix which allows for a systematic evaluation and assessment of individual Compliance Risks. The risk assessment is thereby the result of the combination of probability of occurrence and impact (consequence).

Compliance Programme

Every year, the Chief Compliance Officer generates a Compliance plan for the following year. This plan determines where the key areas of Compliance activity should be in the subsequent year. The report takes into account all relevant areas of activity of the company and the Compliance Risk.

Hannover Re has specified its compliance policy in writing in a manual bearing the title "Group Compliance Handbook". This manual is regularly assessed for its topicality and, if necessary, updated – at least once a year – and on an event-driven basis by the members of staff within the Compliance function when new developments occur.

The appointed Chief Compliance Officer for Hannover Re bears particular responsibility for the monitoring of changes made to legal provisions and standards made by legislators, as well as case law. He assesses the new developments for their relevance and communicates pertinent innovations and changes to the respective departments and the Executive Board.

The Chief Compliance Officer advises members of the Executive Board and members of staff of Hannover Re upon request regarding Compliance topics.

Compliance Communication

Compliance Communication comprises several aspects including reporting, training and a speak-up culture.

The Chief Compliance Officer maintains constant contact and exchange with the further members of the Compliance Function both in Germany and abroad.

As the holder of the Compliance Function, the Chief Compliance Officer reports directly to the members of the Executive Board responsible for GLS and the Compliance Function within Hannover Re. Reports are provided on relevant Compliance incidents and are completed in written, verbal or electronic form, although verbal reports are, as a rule, subsequently backed up in writing. Depending on the seriousness of the incident, the reporting can be performed within a regular annual report or on an ad hoc basis.

For the preparation of the Hannover Re annual Compliance Report to be presented to the Supervisory Board in its Finance & Audit Committee meeting the Chief Compliance Officer and the Compliance staff assess the monitoring plan of the Home Office as well as the Compliance report of the Local Offices. The report contains information on all Compliance-relevant topics.

The Compliance function also holds regular training sessions for members of staff, in particular with regard to legislative reforms, announcements by the insurance supervisory authority or other changes. In 2021, Compliance carried on the Compliance Campaign started in 2020 and scheduled for the duration of twelve months to raise awareness for Compliance relevant topics with all staff globally.

Compliance Monitoring and Improvement

By way of continuous monitoring, the Chief Compliance Officer and the members of staff of the Compliance function contribute to ensuring compliance by the executive bodies (Executive Board and Supervisory Board) and the members of staff of Hannover Re with legal and regulatory operating conditions.

Compliance evaluates adequacy and effectiveness of implemented measures to mitigate identified Compliance Risks on an annual basis. The result of this evaluation did not show any indications that single measures for prevention of non-Compliance would have failed.

B.5 Internal Audit Function

Implementation of the Internal Audit Function

The company's internal audit function is executed by the department of Group Auditing (GA). GA renders independent, objective auditing services including evaluations and recommendations, which play a key role in safeguarding the external and internal compliance of processes, the

internal control system and other areas of the company, as well as identifying potential areas for improvement and thereby creating added value. In addition to its auditing role, GA operates as an internal advisor generating valuable input as part of network collaboration with other units and functions within the company.

The Executive Board ensures that GA is not subject to instruction regarding audit planning, audit execution, reporting and the assessment of audit results. For the purposes of safeguarding independence, the Head of GA, who is simultaneously the key function holder for the company's internal audit function pursuant to Sections 30 and 47 No. 1 of the Insurance Supervision Act (VAG), reports directly to the Executive Board in all matters. Members of the internal audit staff are exclusively employed in GA and only execute tasks which are in line with the GA internal audit policy ("Internal Audit Charter"). This policy was released by the Executive Board and specifies the authorities of the internal audit function.

The GA team unites people of different educational backgrounds as well as different university and vocational degrees in order to cover the wide range of audit tasks. The employees hold a comprehensive professional experience, gained internally (especially from underwriting) as well as externally (in particular from external auditing and consulting). If a specific need for additional resources or skills arises, GA can involve internal peers or external capacities.

Tasks

GA supports the Executive Board in the attainment of company targets by assessing all business areas, processes and systems within the company in a targeted, independent and objective way, through the use of a systematic, risk-oriented approach as part of audit planning and execution, while also contributing to the company's further development. Auditing results are reported directly to the Executive Board. The assessment of individual findings and the overall assessment of the audit results is undertaken exclusively by GA. The underlying classification scheme defined by GA ensures an objectification of the estimations made.

Reporting lines

The internal audit function reports its auditing results and recommendations to the Executive Board continuously in the form of written audit reports, and / or immediately in the event of serious deficiencies, as well as once a year in the form of the GA annual report. The implementation of agreed recommendations and measures in the audits is monitored by GA up until the determined deadlines.

B.6 Actuarial Function

Implementation of the Actuarial Function

Tasks and responsibilities of the Actuarial Function (AF) are defined in the AF policy which has been approved by the Executive Board. The owner of the AF coordinates the tasks of the AF.

The tasks are conducted by the division Group Risk Management and its departments. This reflects the common understanding of AF and Risk Management Function (RMF) that a broad exchange of information and a competent support of each other's function is useful to fulfil their individual tasks in an effective and efficient way.

Tasks

The tasks of the AF are inter alia:

- Coordination and validation of the calculation of the Solvency II technical provisions (TP)
- Ensure the appropriateness of the applied methods, the underlying models and assumptions
 - used for the calculation of the TP for solvency as well as for accounting purposes
 - used as a basis for the appropriate recognition of the inherent risks of these methods, models and assumptions in the internal model
- Evaluation of the uncertainty associated with the estimations made in the calculation of the TP
- Regular review and assessment of the underlying data in terms of sufficiency and quality
- Regular comparison of best estimates against experience
- Reconciliation of TP between local accounting principles and Solvency II
- External validation and quality checks by actuarial consulting companies in addition to the internal validation of the TP
- Recommendations on improving processes and models used for the calculation of the TP, including data collection, if deficiencies have been observed, and monitoring of their implementation
- In the context of the contribution to the RMF inter alia
 - Support of the internal model, especially with respect to underwriting risks including the delivery and validation of models, data, parameters
 - Monitoring of the reserve level within the scope of the system of limits and thresholds
 - Analysis of large transactions and new types of business
- Preparation of the AF report containing inter alia the following topics
 - Tasks of the AF
 - Activities of the AF in the reporting period
 - Methods, results and sensitivity analyses in respect of TP
 - Opinion on the underwriting policy and the retrocession policy

Reporting Lines

In addition to the annual AF report, the responsible owner of the AF reports regularly directly to the Executive Board and to the Actuarial Committee, which is the responsible committee for the information exchange with the AF. If necessary, the AF reports on an ad hoc basis or upon requests. Direct reporting to Executive Board and Actuarial Committee ensure the independence of the AF from the other key functions and the operational management.

The Actuarial Committee consists of the CEO, CFO, the Board member responsible for the risk management coordination of worldwide Property & Casualty reinsurance, the Board member responsible for the risk management coordination of the worldwide Life & Health reinsurance, the head of the AF and the head of reserving for Property & Casualty reinsurance business.

B.7 Outsourcing

Hannover Re has a guideline in place, which governs third party provisions and outsourcing. Among others, the guideline details all requirements imposed on the outsourcing of (re-)insurance activities and functions. Here, the entire management process is described, which consists of the following four process steps:

- Initial analysis, incl. materiality assessment and initial risk assessment and due diligence
- Initial contracting, incl. notification
- Continuous steering and monitoring
- Renewal and termination

All relevant stakeholder groups are involved in the management process. Intra-Group outsourcings are also integrated into the management process.

Among others, Hannover Re has currently outsourced the asset and investment management to Ampega Asset Management GmbH, located in Cologne (Germany). This matter concerns the only outsourcing classified as *important outsourcing* of the Group

B.8 Any other information

Evaluating the appropriateness of the system of governance

On an annual basis, the Executive Board receives an opinion from the System of Governance Assessment Committee regarding the past financial year. This opinion presented by the committee dated 18 February 2022 was assessed and approved by the Executive Board.

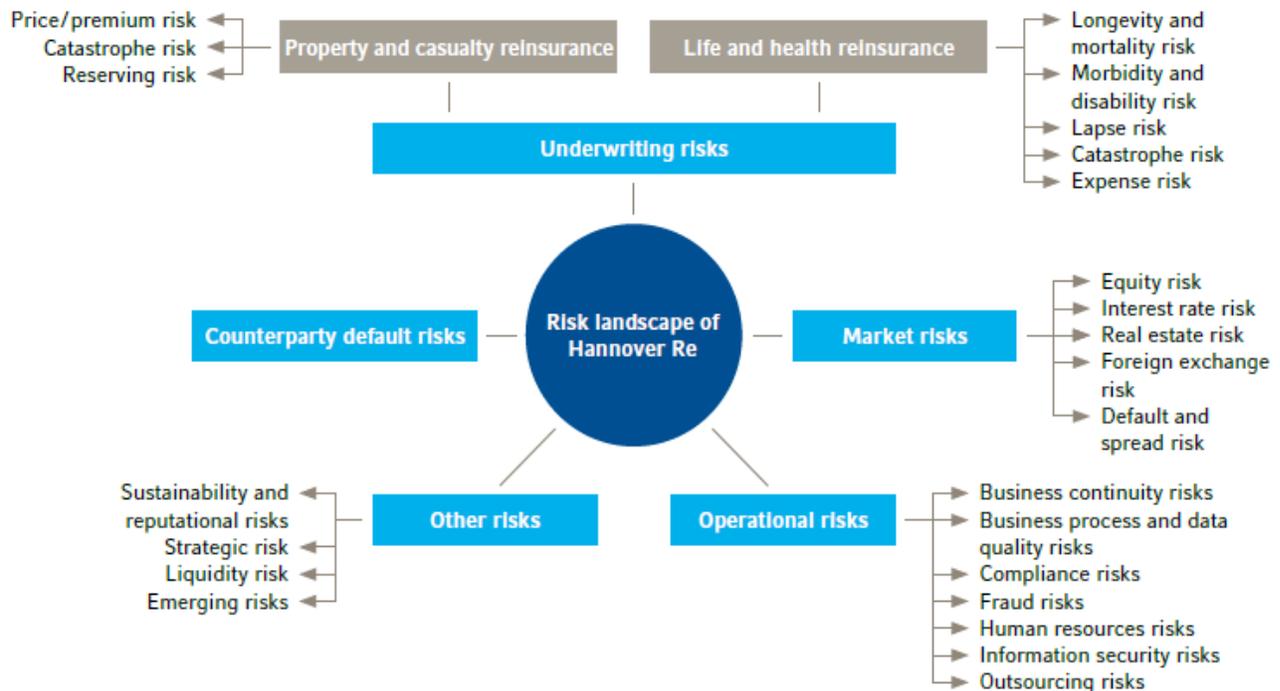
The committee is made up of the Heads of the key functions, the Head of Human Resources and the Head of Operations Performance, and usually convenes twice a year. Guests are invited on an event-driven basis. The basis for the assessment of the system of governance includes, among other things, the annual reports submitted by the key functions.

Based on the assessment conducted by the committee, the Executive Board has reached the conclusion that the system of governance of Hannover Re is appropriate considering the scope and complexity of its business activities and the inherent risks.

C. Risk Profile

The risk landscape is presented in Section B.3.6 and displayed in the following graph.

Risk landscape of Hannover Re



In the context of its business operations Hannover Re Group is confronted with a broad variety of risks. These risks are deliberately accepted, steered and monitored in order to be able to act on the associated opportunities. The parameters and decisions of the Executive Board with respect to the risk appetite of Hannover Re Group, which are based on the calculations of risk-bearing capacity, are fundamental to the acceptance of risks.

At the present time our most significant individual risks are the default and spread risks within the market risks, the reserving and catastrophe risks within the underwriting risks of property and casualty reinsurance and the longevity risks within the underwriting risks of life and health reinsurance.

Retrocession has a particular significance within risk appetite and risk reduction. It is used to protect the capital of the Hannover Re Group. The process of strategic retrocession placement for the Group, subsidiaries or branches is determined by the responsible Board member and overseen by the Executive Board.

In the course of the mid-term planning, we monitor the business development over a time horizon of five years. Besides the basic scenario, we also behold alternative scenarios in respect of macro-economic developments and evolution of (re)insurance markets. This also includes different impacts related to business growth and performance. Under the assumptions within the mid-term business plan, the risk profile and the capitalisation of Hannover Re Group remains comfortable. It is worthwhile to notice that the forecast of the capital requirements is based on various assumptions for the future economic and business environment and is therefore to be handled carefully.

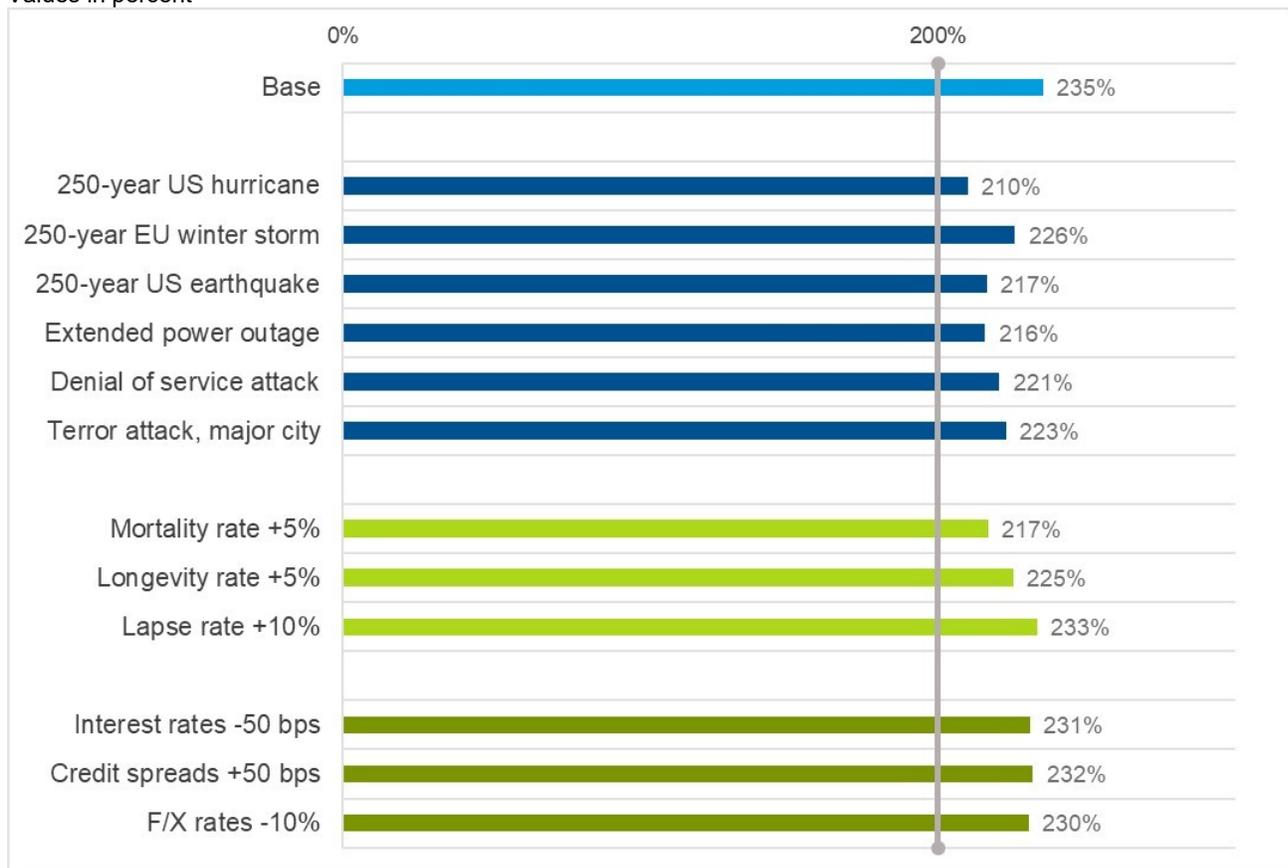
Large transactions are assessed with regards to their influence on the risk profile, capitalisation and the defined thresholds for different risk categories. Therewith, we ensure that the risks develop in line with our risk appetite.

New reinsurance and investment products are analysed under a dedicated process, namely the New Products Process (NPP). In addition to analysing the risk profile, integration into all internal processes, such as accounting and risk monitoring, is defined.

In addition to stochastic modelling, we perform stress tests, scenario and sensitivity analyses on a regular basis. This represents a central element of our risk management. The main stress tests and analyses have to be performed at least annually. They include analyses regarding natural catastrophes, terror events, equity and fixed-income securities as well as real estate. Selected scenarios and stress tests are presented in the following graph.

Sensitivities of the Solvency II ratio YE 2020

Values in percent



Additional information on individual risk categories can be found in the following sections.

C.1 Underwriting risk

C.1.1 Underwriting risk Property and Casualty

Risk management in property and casualty reinsurance has defined various overall guidelines for efficient risk steering. These include, among other things, the use of retrocessions to reduce volatility and conserve capital. It is also crucially important to consistently maximise the available

risk capacities on the basis of the risk management parameters of the Hannover Re Group and to steer the acceptance of risks systematically through the existing central and local underwriting guidelines. Our conservative reserving level is a key factor in our risk management.

For risk management purposes we make a fundamental distinction between risks that result from business operations of past years (reserve risk) and those stemming from activities in the current or future years (price / premium risk). Particularly in the latter case, special importance attaches to the catastrophe risk.

Diversification within the Property & Casualty reinsurance business group is actively managed through allocation of the cost of capital according to the contribution made to diversification. A high diversification effect arises out of the underwriting of business in different lines and different regions with different business partners. In addition, the active limitation of individual risks – such as natural catastrophes – enhances the diversification effect.

The risk capital with a confidence level of 99.5 % within for underwriting risks in property and casualty reinsurance breaks down is as follows:

Solvency Capital Requirement for underwriting risks in property and casualty reinsurance

in TEUR	2021	2020
Premium risk (incl. catastrophe risk)	3,910,862	3,344,637
Reserve risk	3,225,835	2,595,002
Diversification	-1,663,154	-1,348,271
Underwriting risk property and casualty	5,473,543	4,591,368

The underwriting risks in property and casualty reinsurance increased primarily as a consequence of higher premium and reserves. The enlarged volumes are driven by the business growth, the large loss expenditure and associated higher reserves as well as stronger foreign currencies.

C.1.1.1 Risks arising from natural disasters

A large share of the required risk capital for the premium risk (including catastrophe risk) is attributable to risks from natural disasters. They constitute the main concentration risk in property and casualty reinsurance. The following table shows the required risk capital for five of our largest natural hazards scenarios:

Solvency Capital requirement for the five largest natural hazards scenarios

in TEUR	2021	2020
Hurricane US	2,355,356	2,027,033
Earthquake US West Coast	1,784,204	1,389,108
Winter storm Europe	1,148,280	792,458
Earthquake Japan	1,477,165	873,515
Earthquake Chile	1,387,502	945,385

The higher capital requirements compared to last year are due to new and expansion of established business, reduction of retrocessions and exchange rate effects. The scenario Japan Earthquake increased additionally due to a model update.

For the purpose of assessing our material catastrophe risks from natural hazards (especially earthquake, windstorm and flood) we use licensed scientific simulation models, supplemented by the experience of our own specialist departments. The monitoring of the risks resulting from natural hazards is complemented by scenario analyses. Major scenarios and stress tests are shown in the following table:

Stress tests for natural catastrophes after retrocessions

Effect on forecasted net income

in TEUR	2021	2020
Hurricane US		
100-year loss	-1,452,285	-1,106,597
250-year loss	-1,959,283	-1,593,591
Earthquake US West Coast		
100-year loss	-838,924	-553,534
250-year loss	-1,615,161	-1,183,677
Winter storm Europe		
100-year loss	-667,471	-377,417
250-year loss	-1,009,331	-631,055
Earthquake Japan		
100-year loss	-757,539	-347,363
250-year loss	-1,202,763	-747,253
Earthquake Chile		
100-year loss	-492,617	-223,112
250-year loss	-1,277,355	-777,276

Within the scope of the process for the management of natural catastrophes, the Executive Board defines the risk appetite and the limit for natural perils once a year on the basis of the risk strategy.

Risk management considers numerous scenarios and extreme scenarios, determines their effect on portfolio and performance data, evaluates them in relation to the planned figures and identifies alternative courses of action.

For the purposes of risk limitation, maximum amounts are also stipulated for various extreme loss scenarios and return periods; the limits set take into account the profitability of the business in question. Risk management ensures adherence to these maximum amounts. The Executive Board, Risk Committee and P&C Executive Committee are kept regularly updated on the degree of capacity utilisation.

C.1.2 Reserve risk

The management of reserve risk, i.e. the risk of insufficient technical provisions and the resulting strain on the underwriting result, is a high priority in our risk management. To reduce the risk of insufficient technical provisions, we calculate our loss reserves based on our own actuarial estimations and establish additional reserves supplementary to those posted by our cedants. We hold provisions for losses occurred but not reported, yet. Liability claims have a major influence on these provisions. Technical provisions are calculated on a differentiated basis according to line of business and region.

We use actuarial methods based on run-off triangles. Run-off triangles show the changes in the reserve over time due to paid and incurred claims at each balance sheet date. Our own actuarial calculations are subject to annual quality assurance reviews in the form of an external analysis.

In order to partially hedge inflation risks Hannover Re holds securities in its portfolio with inflation-linked coupons and redemption amounts. An inflation risk exists inasmuch as the liabilities (e. g. loss reserves) could develop differently than assumed at the time when the reserve was constituted because of inflation.

C.1.3 Risk mitigation techniques Property & Casualty

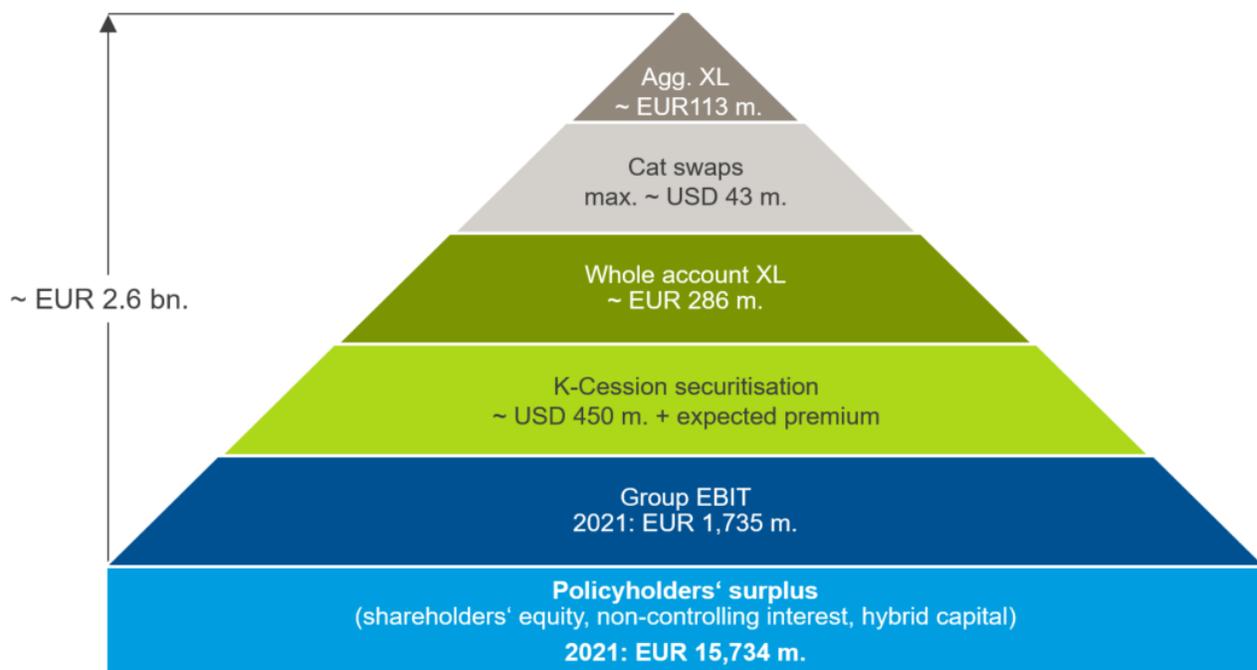
C.1.3.1 Strategic aims and key figures

The strategic aims in relation to the placement of retrocessions are determined by the placing unit and the responsible member of the Executive Board. The Executive Board oversees the placement of the retrocessions as a whole, in particular the limits, premiums and contractual terms.

The Executive Board derives the risk budget for natural perils from the global risk budget. Many risk tolerances are based on net metrics, i.e. the placement of retrocessions plays a key role in adhering to the limits.

During the planning phase in September and October every year, the Executive Board decides on the capacities for the following year. The planning process includes an assessment of the utilisation of all risk tolerances. An overutilization would be inconsistent with the risk appetite and an underutilisation would result in under-deployment of allocated capital.

The resulting multilevel protection increases the reinsurance capacity for natural catastrophes and thus provides additional revenues with a defined risk appetite.



Additional retrocession for Marine, Aviation and facultative reinsurance is in place.

C.1.3.2 Description of main types of cover against natural perils

Details on the individual forms of reinsurance covers are described below.

Whole Account Protection 2021

The Whole Account Protections cover all property, motor hull and engineering business of the Hannover Re Group, i.e. business recorded in Hannover and through subsidiaries or branch offices. The protections are placed on a gross claim basis.

Large Loss Aggregate XL 2021

The Large Loss Aggregate XL is an aggregate protection and covers all natural catastrophe perils for the Hannover Re Group on a net basis.

K-quota share 2021

The portfolio covered under the K-quota share consists of the following segments and regions of the Cat XL business of the Hannover Re Group:

- Natural perils in Australia, Japan, Canada and USA (mainly wind and earthquakes)
- Natural perils in northern Europe (mainly wind, earthquakes, hail and floods)
- Natural perils in New Zealand, Chile (mainly earthquakes)
- Aviation (all XL contracts) and Marine & Energy (all XL contracts)

By way of its “K-transactions”, Hannover Re has raised underwriting capacity for catastrophe risks in the capital market. The “K-Cession”, which was placed with investors in North and South America, Europe and Asia, involves a quota share cession on worldwide natural catastrophe business as well as aviation and marine risks. A large part of the total volume of the K-Cession was securitised via structured entities. The transaction has an indefinite term. It can be cancelled annually by investors. Segregated accounts of Kaith Re Ltd. and other structured entities outside the Group are used for transformer purposes for part of this transaction. The structured entities are fully funded by contractually defined investments in the form of cash and equivalent liquid assets and therefore there exists no default risk for Hannover Re.

E+S Cat XL protection 2021

In addition to the Hannover Re retrocessions, there is a specific cover for the subsidiary E+S Rück. The so-called E+S Cat XL covers all natural perils: wind, hail, flood and earthquake. The covered area is worldwide.

C.1.4 Underwriting risk Life and Health

All risks directly connected with the life of an insured person are referred to as biometric risks. They include in particular the miscalculation of mortality, life expectancy, morbidity and occupational disability. Biometric risks are the material risks for our company in the area of life and health reinsurance. Our goal is to strike a balance between biometric risks. Furthermore, we are exposed to lapse risks because the cash flows resulting from our reinsurance treaties are in part dependent on lapse rates among policyholders. Counterparty default risks are also material since we partly prefinance our cedants’ new business acquisition costs. Furthermore, we are exposed to

catastrophe risks, especially events involving a high number of fatalities in our insured portfolio such as the Covid-19 pandemic in 2021.

The reserves are determined on the basis of secure biometric actuarial bases in light of the information provided by our clients. The biometric actuarial bases used and the lapse assumptions are continuously reviewed with an eye to their adequacy and if necessary adjusted. This is done using the company's own empirical data as well as market-specific insights. Our current risk profile in life and health reinsurance is dominated by mortality and longevity risks. This is due to the fact that under some of our contracts we pay death benefits, while under others we pay survival benefits. The volume of our annuity portfolio contributes to diversification within life and health reinsurance. We calculate the diversification effect between mortality and longevity risks prudently in view of the fact that the contracts are normally taken out for different regions, age groups and individuals. Morbidity risks are also playing an increasingly significant role. The required risk capital with a confidence level of 99.5 % for underwriting risks in life and health reinsurance breaks down as follows:

Required risk capital for underwriting risks life and health reinsurance

Required risk capital at a confidence level of 99.5 %

in TEUR	2021	2020
Mortality risk (incl. catastrophe risk)	2,116,268	2,176,270
Longevity risk	2,505,878	2,302,455
Morbidity and disability risk	1,671,649	1,488,274
Lapse risk	353,659	396,786
Expense risk	163,211	222,850
Diversification	-3,480,932	-3,441,735
Underwriting risk life and health	3,329,734	3,144,899

Diversification is a central management tool for our company. We seek to spread risks as far as possible across different risk classes and different regions. In our pricing of reinsurance treaties, we provide incentives to further increase diversification.

The underwriting risks in life and health reinsurance increased primarily due to the business expansion in the areas of longevity and morbidity risks as well as the appreciation of foreign currencies.

A risk concentration in life and health reinsurance business arises from longevity and mortality risks, followed by morbidity risks. Concerning mortality risks, the risk of a pandemic event represents a main driver for our solvency capital requirement for life and health business with regard to concentration risks. To govern our risks we regularly monitor our exposure regarding potential pandemic events in the context of internal model runs. A systematic validation of the internal model with regard to the findings from the Covid-19 pandemic was carried out in 2021 and will be followed-up in 2022. More information is available in Section D.2.2.2.

Through our quality assurance measures we ensure that the reserves established by ceding companies in accordance with local accounting principles satisfy all requirements with respect to the calculation methods used and assumptions made (e.g. use of mortality and morbidity tables, assumptions regarding the lapse rate). In addition, the assumptions are continuously reviewed on the basis of empirical data and modified if necessary. New business is written in all regions in compliance with underwriting guidelines applicable worldwide, which set out detailed rules governing the type, quality, level and origin of risks and how these considerations are factored into

the pricing. These global guidelines are revised annually and approved by the Executive Board. Special underwriting guidelines give due consideration to the particular features of individual markets. By monitoring compliance with these underwriting guidelines we minimise the risk of an inability to pay or of deterioration in the financial status of cedants. Regular reviews and holistic analyses (e. g. with an eye to lapse risks) are carried out with respect to new business activities and the assumption of international portfolios. Large transactions are also examined by our risk management department. Individual actuarial reports and documentation ensure that regular scrutiny also takes place at the subsidiary level. The interest rate risk, which in the primary sector is important in life business owing to the guarantees that are given, is of only minimal relevance to our company thanks to the design of our reinsurance treaties. We have confidence in the entrepreneurial abilities of our underwriters and grant them the most extensive possible powers. In our decentralised organisation we manage risks where they arise using a consistent Group-wide approach in order to obtain an overall view of the risks in life and health reinsurance. Our global underwriting guidelines provide underwriters with an appropriate framework for this purpose.

C.1.4.1 Risk mitigation techniques Life & Health Reinsurance

In the Life & Health business group, retrocessions for the purpose of risk reduction are only used on a limited basis.

An index-based pandemic cover was structured in 2013 as a swap and, since then, has been placed with different investors in various tranches. The overall capacity placed is flexibly collateralised, such that the level of collateralisation can be increased depending on the current WHO pandemic alert phases. Life & Health business group did not receive any payment for this cover in 2021.

Some large longevity deals are retroceded proportionally and on a regular premium basis in order to reduce the volatility of the longevity portfolio with regards to particular large contracts. Two sided collateral provisions ensure that future liabilities will be collateralised if receivables from or to the retrocessionaires resulting from expected business development are projected to exceed an agreed threshold.

The existing pool retrocessions for high sum assured individual policies mainly originate from times when a lower per life retention applied for the Hannover Re Group. For risk reduction reasons, they are no longer necessary and have been placed in run-off.

All other existing retrocessions are not placed for reasons of active risk reduction, but rather to maintain existing customer relationships and gain access to attractive inward business or are placed with affiliates and non-affiliates in order to reduce the HGB strains from large financing transactions.

The effectiveness of the retrocessions is closely linked to the default risk of the retrocessionaires. The monitoring of the default risk of retrocessionaires is performed across all business segments of Hannover Re in a standardized way, using standard systems and methods which are described in Section C.3.

C.2 Market risk

Faced with a challenging capital market climate, particularly high importance attaches to preserving the value of assets under own management and the stability of the return. Hannover Re's portfolio

is therefore guided by the principles of a balanced risk / return profile and broad diversification. Based on a risk-averse asset mix, the investments reflect both the currencies and durations of our liabilities. Market price risks include equity risks, interest rate risks, foreign exchange risks, real estate risks, spread and default risks. Our portfolio currently consists in large part of fixed-income securities, and hence default and spread risks account for the bulk of the market risk. We minimise interest rate and foreign exchange risks through the greatest possible matching of payments from fixed-income securities with the projected future payment obligations from our insurance contracts. Market risks derive from the investments managed by Hannover Re itself and from investment risks of ceding companies that we assume in connection with insurance contracts. The following table shows the risk capital with a confidence level of 99.5 % for the market risks from investments under own and third-party management.

Required risk capital for market risks

Including private equity

in TEUR	2021	2020
Credit and spread risk	2,818,933	2,901,988
Interest rate risk	1,082,203	767,700
Foreign exchange risk	1,593,361	1,024,105
Equity risk	2,048,298	1,618,857
Real estate risk	755,371	646,468
Diversification	-3,423,411	-2,563,430
Market risk	4,874,756	4,395,687

The increase in the market risk reflects first and foremost the larger volume due to higher market values and new investments in the areas of private equity and real estate. The increased volumes of fixed-income securities as a result of business growth are a further factor here.

With a view to preserving the value of our assets under own management, we constantly monitor adherence to a trigger mechanism based on a clearly defined traffic light system that is applied across all portfolios. This system defines clear thresholds and escalation channels for the cumulative fluctuations in fair value and realised gains / losses on investments since the beginning of the year. They are unambiguously defined in conformity with our risk appetite and trigger specified information and escalation channels if a corresponding fair value development is overstepped.

Interest rate markets were again highly volatile over the course of the year under review. In contrast to the previous years, which had seen continued declines in the rate level, rates moved higher in the year under review across virtually all maturities in our main currency areas. While the increases in euro rates were on the modest side, they were in some instances appreciable on the US dollar and pound sterling markets. After the very sharp rises and highest-ever level of volatility recorded in the previous year, risk premiums on corporate bonds remained relatively stable throughout the entire period under review on the low level seen prior to the coronavirus. Overall, a substantial decrease in the hidden reserves for fixed-income securities was booked over the year as a whole.

The predefined discussion and analysis mechanisms upon triggering of the escalation levels of the early-warning system were activated in the course of the year under review on account of interest rate volatility as well as possible central bank moves in response to inflationary tendencies. In accordance with our guidelines, the Investment Committee therefore regularly discussed the potential implications for our invested asset classes and the current portfolio composition in each case. Thanks to the broad diversification and conservative posture of our investments, there was

no need to modify the strategic orientation of our portfolios towards a more defensive investment strategy during the reporting period.

The short-term loss probability measured as the Value at Risk (VaR) is another vital tool used for operational monitoring and management of the market price risks associated with our securities positions. It is calculated on the basis of historical data, e. g. the volatility of the securities positions under own management and the correlation between these risks. As part of these calculations the decline in the fair value of our securities portfolio is simulated with a certain probability and within a certain period. The VaR of the Hannover Re Group determined in accordance with these principles specifies the decrease in the fair value of our securities portfolio under own management that with a probability of 95% will not be exceeded within ten trading days. A standard market model is used to calculate the VaR indicators for the Hannover Re Group. It is based on historical time series of relevant market parameters (equity prices, yield curves, spread curves and exchange rates). Against the backdrop of a very turbulent capital market and interest rate environment, volatilities – especially of fixed-income assets – again reached a high level at times in the year under review. Based on continued broad risk diversification and the orientation of our investment portfolio, our VaR was nevertheless clearly below the VaR upper limit defined in our investment guidelines. It amounted to 0.8 % (previous year: 0.8 %) as at the end of the reporting period.

Stress tests are conducted in order to be able to map extreme scenarios as well as normal market scenarios for the purpose of calculating the Value at Risk. In this context, the loss potentials for fair values and shareholders' equity (before tax) are simulated on the basis of already occurred or notional extreme events.

Scenarios for changes in the fair value of material asset classes

in TEUR	Scenario	Portfolio change on a fair value basis	
		2021	2020
Equity securities and private equity	Share prices -10%	-206,169	-167,917
	Share prices -20%	-412,338	-335,834
	Share prices +10%	+206,169	+167,917
	Share prices +20%	+412,338	+335,834
Fixed-income securities	Yield increase +50 basis points	-1,422,231	-1,247,205
	Yield increase +100 basis points	-2,766,819	-2,420,903
	Yield decrease -50 basis points	+1,508,547	+1,323,730
	Yield decrease -100 basis points	+3,113,345	+2,730,927
Real Estate	Real estate market values -10%	-310,594	-251,093
	Real estate market values +10%	+310,594	+251,093

Further significant risk management tools – along with the various stress tests used to estimate the loss potential under extreme market conditions – include sensitivity and duration analyses and our asset / liability management (ALM). The internal capital model provides us with quantitative support for the investment strategy as well as a broad diversity of VaR calculations. In addition, tactical duration ranges are in place, within which the portfolio can be positioned opportunistically according to market expectations. The parameters for these ranges are directly linked to our calculated risk-bearing capacity. It should be borne in mind that the issued subordinated bonds and resulting induced interest rate exposure are actively factored into our ALM. Please note, that also the subordinated liabilities and the resulting interest rate risk are actively managed in the ALM process.

Equity risks derive from the possibility of unfavourable changes in the value of equities, equity derivatives or equity index derivatives in our portfolio. Their relevance to our investments was, however, very slight because we acted on market opportunities to dispose of equity funds in what was already our minimal portfolio of equities and equity funds going into the year under review. Our equity allocation thus stands at just 0.5 %. Our exposure to the private equity market remains unchanged. Changes in fair value here tend to be prompted less by general market conditions and more by entity-specific assessments. The risks are associated principally with the business model and profitability and less so with the interest rate component in the consideration of cash flow forecasts.

By far the largest part of our assets under own management is invested in fixed-income securities. They are exposed to the interest rate risk. Declining market yields lead to increases and rising market yields to decreases in the fair value of the fixed-income securities portfolio. The credit spread risk should also be mentioned. The credit spread refers to the interest rate differential between a risk-entailing bond and risk-free bond with the same maturity. Changes in these risk premiums, which are observable on the market, result – analogously to changes in pure market yields – in changes in the fair values of the corresponding securities. We minimise interest rate risks by matching the durations of payments from fixed-income securities as closely as possible with the projected future payment obligations under our insurance contracts.

Foreign exchange risks are especially relevant if there is a currency imbalance between the technical liabilities and the assets. Through extensive matching of currency distributions on the assets and liabilities side, we reduce this risk on the basis of the individual balance sheets within the Group. The short-term Value at Risk therefore does not include quantification of the foreign exchange risks. We regularly compare the liabilities per currency with the covering assets and optimize the currency coverage by regrouping assets. In so doing, we make allowance for collateral conditions such as different accounting requirements. Remaining currency surpluses are systematically quantified and monitored within the scope of economic modelling.

Real estate risks result from the possibility of unfavourable changes in the value of real estate held either directly or through fund units. They may be caused by a deterioration in particular qualities of a property or by a general downside in market values. Real estate risks continued to grow in importance for our portfolio owing to our ongoing involvement in this sector. We spread these risks through broadly diversified investments in high-quality markets worldwide; each investment is preceded by detailed analyses of the property, manager and market concerned.

The Covid-19 pandemic also has implications for real estate markets. Against a backdrop of travel restrictions and business closures, the hardest hit areas have been the restaurant, hotel and retail industries, and to some extent the office sector. In our real estate portfolio, we are seeing concrete impacts on directly held properties, above all in the retail sector and especially in relation to lessees in the restaurant industry. Overall, though, an increase in the vacancy rate was not observed in this connection. Hannover Re is not directly invested in the hotel sector. Exposures are solely through diversified funds and account for a very small share of the total real estate portfolio only.

The realities and dynamics of real estate markets are indirectly subject to another influencing factor as a consequence of the pandemic. If the economic softness (temporarily) reduces demand for space, this could result in flat or even declining rental price trends or indeed a rising vacancy rate. In combination with modified expectations as regards contract conditions and the likelihood of lease extensions or new leases, these changes in parameters will be reflected in adjusted fair values of the properties. Pandemic-related developments have therefore been factored into the real estate valuations. This applies to both the directly held portfolio and – with the usual slight time delay – the portfolio of real estate funds.

We use derivative financial instruments only to the extent needed to hedge risks. The primary purpose of such financial instruments is to hedge against potentially adverse developments on capital markets. A portion of our cash flows from the insurance business as well as foreign exchange risks arising because currency matching cannot be efficiently achieved are hedged to some extent using forward exchange transactions. Hannover Re holds further derivative financial instruments to hedge interest rate risks from loans taken out to finance real estate. In addition, Hannover Re holds hedges in the form of equity swaps to hedge price risks in connection with the stock appreciation rights granted under the Share Award Plan. These are intended to neutralise changes in the fair values of the awarded stock appreciation rights. Contracts are concluded with reliable counterparties and for the most part collateralised on a daily basis so as to avoid credit risks associated with the use of such transactions. The remaining exposures are controlled according to the restrictive parameters set out in our investment guidelines.

Since 2019 we have entered into term repurchase agreements as a supplementary liquidity management tool. The holdings exchanged in this context are fully collateralised.

Insurance derivatives connected with the technical account do not play any decisive role in our investment portfolio as for the most part they are directly included in the underlying technical positions.

Our investments entail credit risks that arise out of the risk of a failure to pay (interest and / or capital repayment) or a change in the credit status (rating downgrade) of issuers of securities. We attach equally vital importance to exceptionally broad diversification as we do to credit assessment conducted on the basis of the quality criteria set out in the investment guidelines. We measure credit risks in the first place using the standard market credit risk components, especially the probability of default and the potential amount of loss – making allowance for any collateral and the ranking of the individual instruments depending on their effect in each case.

We then assess the credit risk first on the level of individual securities (issues) and in subsequent steps on a combined basis on the issuer level. In order to limit the risk of counterparty default we set various limits on the issuer and issue level as well as in the form of dedicated rating quotas. A comprehensive system of risk reporting ensures timely reporting to the functions entrusted with risk management.

In general terms, Hannover Re gears its investment portfolio to the principles of a balanced risk / return ratio coupled with broad diversification. Accordingly, we counter the risk concentrations that nevertheless arise in individual asset classes with the broadest possible spread of different issuers per asset class. This is just as much a key component of our investment policy as credit rating assessment and management based on the quality criteria defined in the investment guidelines.

C.3 Credit risk

The counterparty default risk consists primarily of the risk of complete or partial failure of the counterparty and the associated default on payment. The following table shows the required risk capital for counterparty defaults as at 31 December. This includes counterparty risk from retrocessionaires, cedants and short-term money held at banks but not credit risk from investments. The latter is covered under market risk, see previous section.

Required risk capital (confidence level 99.5 %)

in TEUR	2021	2020
Counterparty default risk	468,041	449,028

The increase in counterparty default risks can be attributed principally to a higher volume of recoverables from retrocessionaires.

Our retrocession partners are carefully selected and monitored in light of credit considerations in order to keep the risk as small as possible. This is also true of our broker relationships, which entail, inter alia, a risk through the potential loss of the premium paid by the cedant to the broker. We minimise these risks, among other measures, by reviewing broker relationships with an eye to criteria such as the existence of professional indemnity insurance, payment performance and proper contract implementation. The credit status of retrocessionaires is continuously monitored. The Security Committee decides where necessary on measures to secure receivables that appear to be at risk of default. This process is supported by a risk management application, which specifies cession limits for the individual retrocessionaires participating in protection cover programmes and determines the capacities still available for short-, medium- and long-term business. Depending on the type and expected run-off duration of the reinsured business, the selection of reinsurers takes into account not only the minimum ratings of the external rating agencies but also internal and external expert assessments (e.g. market information from brokers). Overall, retrocessions conserve our capital, stabilise and optimise our results and enable us to act on opportunities across a broader front, e. g. following a major loss event. Regular visits to our retrocessionaires give us a reliable overview of the market and put us in a position to respond quickly to capacity changes. The following table shows how the proportion of assumed risks that we do not retrocede (i.e. that we run in our retention) has changed in recent years:

Gross written premium retained

in %	2021	2020
Total	89.5	90.1
Property and casualty reinsurance	90.1	90.3
Life and health reinsurance	88.2	89.8

Alongside traditional retrocessions in property and casualty reinsurance we also transfer risks to the capital market. Please refer also to Section C.1.3.

Counterparty default risks, among other risks, are also relevant to our investments and in life and health reinsurance because we prefinance acquisition costs for our ceding companies. Our cedants, retrocessionaires and broker relationships as well as our investments are therefore carefully evaluated and limited in light of credit considerations and are constantly monitored and controlled within the scope of our system of limits and thresholds.

61.4 % of our recoverables from reinsurance business are secured by deposits or letters of credit. For the majority of our retrocessionaires we also function as reinsurer, meaning that in most cases recoverables can potentially be set off against our own liabilities.

The average default rate over the past four years was 0.2 %.

Retrocession gives rise to claims that we hold against our retrocessionaires. These reinsurance recoverables – i.e. the reinsurance recoverables on unpaid claims – amounted to TEUR 2,674,107 (TEUR 1,883,270) at the balance sheet date.

The following table shows our reinsurance recoverables – split by rating quality – due from our retrocessionaires. Offsetting items as letters of credit and reinsurance deposits held as security against reinsurance recoverables on unpaid claims are consolidated in the column “secured”.

Reinsurance recoverables as at the balance sheet date

in TEUR	2021	2020
Secured	1,642,416	1,233,357
AAA		
AA	196,586	244,642
A	753,936	372,532
≤ BBB, NR	81,169	32,739
Total	2,674,107	1,883,270

C.4 Liquidity risk

The liquidity risk refers to the risk of being unable to meet our financial obligations when they become due. The liquidity risk consists of the refinancing risk (necessary cash could not be obtained or could only be obtained at increased costs) and the market liquidity risk (financial market transactions could only be completed at a poorer price than expected due to a lack of market liquidity). Core elements of the liquidity management of our investments are, in the first place, management of the maturity structure of our investments on the basis of the planned payment profiles arising out of our technical liabilities and, secondly, regular liquidity planning as well as the asset structure of the investments. Above and beyond the foreseeable payments, unexpected and exceptionally large payments may pose a threat to liquidity. In reinsurance business, however, significant events (major losses) are normally paid out after a lead time that can be reliably planned. As part of our liquidity management we have nevertheless defined asset holdings that have proven to be highly liquid – even in times of financial stress such as the 2008 financial crisis. Our holdings of unrestricted German, UK and US government bonds as well as cash during the year under review were larger than possible disbursements for assumed extreme events, which means that our liquidity is assured even in the unlikely case of financial crises coinciding with an extreme event that needs to be paid out quickly. In addition, we manage the liquidity of the portfolio by checking on each trading day the liquidity of the instruments contained therein. These measures serve to effectively reduce the liquidity risk.

Regarding the “total amount of the expected profit included in future premiums” required by Art. 295 (5) of the Delegated Regulation 2015/35 please refer to the Quantitative Reporting Template S.23.01.22, item R0790. We do not use this quantity for our liquidity management.

C.5 Operational risk

Operational risks refer to the risk that arises from inadequate or failed internal processes, or from personnel and systems, or from external events. Within the overall framework of operational risks, we pay particularly close attention to business continuity risks, business process and data quality

risks, compliance risks, fraud risks, human resources risks, information security risks and outsourcing risks.

In contrast to underwriting risks (e. g. the reserve risk), which we enter into in a deliberate and controlled manner in the context of our business activities, operational risks are an indivisible part of our business activities. The focus is therefore on risk minimisation. With the aid of half-yearly Group-wide self-assessments, in which all relevant corporate operations are actively involved, we determine the maturity level of our risk management system for operational risks and define action fields for improvements. The assessment is carried out by evaluating the maturity level of the corporate governance, the risk management function and the respective risk identification, analysis, evaluation, steering, monitoring and reporting. The assessment of the maturity level enables us, among other things, to prioritise operational risks. In order to calculate the capital commitment in our internal capital model we perform extensive scenario analyses and take the findings as a basis for specifying the parameters for the stochastic model. In this context, experts across all disciplines establish assumptions for the loss frequency and losses in joint workshops. In addition, internal loss events and near-losses are systematically recorded and examined with an eye to possible measures for improving the control system. The internal data are enhanced with insights gained from external events, which either become known through public channels or were reported through a loss data consortium of which we are a member.

Regular quarterly risk reporting to the Risk Committee and the Executive Board takes place with regard to all operational risks. In the context of the reporting, risks are also evaluated on the basis of risk indicators.

The following table shows the required risk capital for the operational risk as at 31 December.

Required risk capital (confidence level 99.5 %)

in TEUR	2021	2020
Operational risk	626,903	548,416

The increase in operational risk can be attributed to an increase in those scenarios which are driven by the overall business volume and thus increase as business grows.

Unlike market, counterparty default and underwriting risks, operational risks are categorised as non-financial risks. We discuss below the subcategories of operational risks. Risks connected with ESG issues can occur in particular in the subcategories of business continuity, compliance, human resources, information security and outsourcing.

Business continuity risks arise from natural or man-made hazards that threaten or disrupt the business operations. The risk also includes IT service continuity risks. Our Business Continuity Management (BCM) system reduces the risk through preventive measures, such as an emergency power supply, alternative infrastructures and contingency plans that are regularly tested. A special organisational and operational structure has been set up to deal reactively with a crisis event. This has proven itself, inter alia in connection with the current Covid-19 pandemic, and there were no material impacts on our business operations. Overall, our focus in BCM is on the following five scenarios: non-availability / shortage of personnel, e. g. as a consequence of a pandemic, loss of the workplace environment, failure of local / central IT, failure of external infrastructures / service providers, security incidents (life and limb of employees at risk).

Business process risks are associated with the risk of inadequate or failed internal processes, which can arise inter alia as a consequence of an inadequate process organisation. We have defined criteria for managing the risk that result in a high process quality. Data quality is similarly a

very critical success factor, especially in risk management, because for example the validity of the internal model is largely based on the data provided. As part of our data quality management, we have defined extensive automatic routines that continuously determine data quality in central systems.

Compliance risks are associated with the risk of breaches of standards and requirements, non-compliance with which may entail lawsuits or official proceedings with not inconsiderable detrimental implications for the business activities of Hannover Re. Compliance with regulatory standards, the company's Code of Conduct, tax regulations, data privacy requirements as well as the stipulations of anti-trust and competition law have been defined as issues of particular relevance. In conformity with a risk-based approach, sanctions screening software is used on the relevant parts of the Hannover Re's portfolio as well as on loss advices to filter out individuals who are subject to sanctions. Suitable steps are taken if such individuals are identified. Business partners are also screened in this way. Responsibilities within the compliance organisation are regulated and documented and interfaces with risk management have been put in place. The set of tools is rounded off with regular compliance training programmes.

Fraud risks refer to the risk that results from intentional violations of laws or rules from own employees and / or from third parties in order to gain an advantage. This risk is reduced by the internal control system as well as by the audits conducted by Group Auditing on a Group-wide and line-independent basis. Should an instance of fraud nevertheless occur, established escalation processes to involve all relevant functions are in place and a risk-specific analysis (e. g. forensic investigation) is conducted including determination of appropriate measures.

The proper functioning and competitiveness of Hannover Re can be attributed in large measure to the expertise and dedication of our staff. In order to minimise personnel risks, we pay special attention to the skills, experience and motivation of our employees and foster these qualities through outstanding personnel development and leadership activities. These measures are supported by ongoing talent management and regular employee surveys. Hannover Re has at its disposal specific indicators for the early detection and monitoring of material risks. Along with a determination of the weighted level of maturity, this also encompasses continuous succession planning, ensuring the timely (re)staffing of vacant positions and monitoring turnover rates based on industry benchmarks.

Information security risks arise, inter alia, out of the risk of inadequate integrity, confidentiality or availability of information as well as impacts from or on other assets such as systems, processes, buildings / premises or persons. By way of example, losses and damage resulting from the unauthorized passing on of confidential information, the malicious overloading of important IT systems or from computer viruses / ransomware are material to Hannover Re. Given the broad spectrum of such risks, a diverse range of technical steering and monitoring measures and organisational standards, including for example the requirement to conclude confidentiality agreements with service providers, have been put in place. In addition, our employees are made aware of such security risks through practically oriented tools provided online in the intranet, by way of training opportunities and through targeted information. Hannover Re has implemented an Information Security Management System (ISMS) that is closely aligned with international standards – principally ISO 27001 – and harmonised with other management systems such as data protection or outsourcing management. The central document is the "Information Security Policy", which is valid for all locations worldwide. Together with specific guidelines and standards, it regulates all technical and organisational measures including those relating to the confidentiality, integrity and availability of information assets. Consideration is given to all types of digital and physical information assets. The Executive Board bears overall responsibility for information security. It is supported by the Risk Committee. The Information Risk & Security Committee (IRSC)

is a sub-committee of the Risk Committee and is comprised of the Head of Risk Management, the Chief Information Security Officer (CISO) and the Head of IT. The IRSC evaluates and monitors the corresponding risks and steers any conflicts of interest in relation to information and IT security. It acts – in common with the risk management function and the CRO – independently of any instructions. The full Executive Board is provided with information at least annually by way of an information security report and also within the year if necessary. The Risk Committee receives information on a quarterly basis.

Outsourcing risks can result from the outsourcing of functions, services and / or organisational units to third parties. They also include intra-group outsourcings. Mandatory rules have been put in place to limit this risk; among other things, they stipulate that a risk analysis and partner assessment are to be performed prior to outsourcing. In the context of these analyses a check is carried out to determine, inter alia, which specific risks are associated with the outsourcing and what risk management measures need to be taken. The results of the analyses are subject to regular review.

C.6 Other material risks

Of material importance to our company in the category of other risks are primarily emerging risks, strategic risks as well as reputational and sustainability risks.

Furthermore, we monitor the contagion risk between single entities of the Hannover Re Group and in respect of the relation to the HDI Group.

C.6.1 Emerging risks

The hallmark of emerging risks is that the content of such risks cannot as yet be reliably assessed – especially on the underwriting side with respect to our portfolio. Such risks evolve gradually from weak signals to unmistakable tendencies. It is therefore vital to detect these risks at an early stage and then determine their relevance. For the purpose of early detection we have developed an efficient process that spans divisions and lines of business and we have ensured its linkage to risk management. Operational implementation is handled by an expert working group assembled specially for this task. The analyses performed by this working group are used Group-wide in order to pinpoint any necessary measures (e. g. the implementation of contractual exclusions or the development of new reinsurance products). Examples of emerging risks include cyber risks, climate-related disasters, pandemics, supply chain and environmental risks. We monitor the top 20 emerging risks closely with in-depth analyses. The working group creates internal position papers and compact risk briefings, which advise staff on handling analysed emerging risks. These analyses were made up, beside many others, for topics like disruption of critical infrastructure, resource scarcity, urbanization and different health issues as side effect from climate change, drug abuse, pollution, nanotech, resource scarcity and obesity. Emerging risks may entail business opportunities, which are derived from our emerging risk approach.

C.6.2 Strategic risks

Strategic risks derive from a possible imbalance between the corporate strategy of the Hannover Re and the constantly changing general business environment. Such an imbalance might be caused, for example, by incorrect strategic policy decisions, a failure to consistently implement the defined strategies and business plans or an incorrect allocation of resources. We therefore

regularly review our corporate strategy in a multi-step procedure and adjust our processes and the resulting guidelines as and when required. We have defined performance criteria and indicators for operational implementation of the strategic principles and objectives; these are authoritative when it comes to determining fulfilment of the various targets. The process for the management of strategic risks continues to be assessed annually as part of the monitoring of business process risks.

C.6.3 Reputational and sustainability risks

Sustainability risks are all risks involving environmental, social, and governance (ESG) issues. It has become common practice to distinguish the risks a company faces (outside-in view) caused by ESG issues and the impact a company has on people and the environment (inside-outview).

- Sustainability risks corresponding to the outside-in view are financial risks due to the potential financial impacts on Hannover Re of environmental, social or governance (ESG) issues. These financial risks include market, underwriting, counterparty and operational risks, and are integrated in the risk management processes for these risks.
- The inside-out perspective refers to situations where Hannover Re's activities damage the environment, social norms or reflect failures of governance.
- Reputational risks represent the bridge between the outside-in and the inside-out perspective. Due to an inside-out impact – perceived or real – of the company, reputational risk arises for the company as an inside-out risk.

The distinction is very important and we will label activities and processes accordingly. As a principle, we embed sustainability risks (outside-in) in our regular (risk management) processes. While reputational risks from the inside-out perspective are related to violations against environmental and social concerns, we define failures of governance as the failure to comply with internal guidelines, codes of conduct and other internal rules.

C.6.4 Important developments

In this section, we describe external developments in 2021 with particular relevance for risk management.

C.6.4.1 Covid-19 pandemic

The Crisis Management Team set up in 2020 continued to manage operations prudently in 2021. Business travel remained constrained. Working from home – which applied to large parts of the workforce – went smoothly, in part thanks to the use of videoconferencing and extensively digitalised business processes. Consequently, in 2021 we once again did not identify any material impacts of the Covid-19 pandemic on our operations. After an initial, gradual return to the company's business premises in the second half of the year, employees were, once again, urged to work from home in the fourth quarter – depending on their location – due to the accelerating spread of infections around the world. We continue to evaluate our financial strength and profitability on a regular basis using stress tests and sensitivity analyses and will take measures as needed to reduce risks or strengthen our equity resources. In this regard, the largest reserves on the reinsurance side were for coverage of business interruption, excess mortality, credit insurance and

event cancellations. With the pandemic still ongoing, any forecasts are still subject to considerable uncertainty. It remains to be seen how well the vaccines and boosters currently available will work against new variants of the virus. We are also monitoring the long-term post-infection effects. The so-called “post-Covid syndrome” would have negative implications for the coverage of sickness costs and disability. Early study results suggest that these patients suffer not only from fatigue and a general loss of energy, but also increasingly from anxiety disorders and depression. The biometric effects of the pandemic on our reinsurance portfolios are discussed in a separate subsection.

C.6.4.2 Regulatory developments

The recommendations of the European Insurance and Occupational Pensions Authority (EIOPA) for the overhaul of the European prudential regime Solvency II were submitted to the European Commission, which then published its proposals in September 2021. In some instances the Commission diverged from EIOPA’s recommendations. The European Parliament and the member states in the Council will now negotiate the final legislative texts based on the Commission’s proposals. The proposals include, among other things, new macroprudential supervisory powers as well as changes to yield curves and revisions to the calculation of the risk margin. Depending on the final outcome of the ongoing legislative process, these proposals could have considerable implications for the European insurance industry. EIOPA has also proposed extensive changes to reporting rules for insurance undertakings, namely the revision of the Quantitative Reporting Templates (QRTs) and changes to the Implementing Technical Standards (ITS). In the year under review the European Financial Reporting Advisory Group (EFRAG) also endorsed the IFRS 17 standard, with European insurers now making preparations for its implementation.

Numerous regulatory developments relating to sustainability occurred in 2021 on the international, European and national level. In the EU they are linked to the European Green Deal strategy pursued by the European Commission. The European Commission renewed the high-level goals for sustainable finance, which were first set out in the Commission’s 2018 action plan. The Commission also published a delegated act proposing how the disclosure duties under the Taxonomy Regulation are to be fulfilled, and in which the specific requirements for (re)insurance undertakings are elaborated in greater depth. Further new regulation introduced relates to the consideration given to climate change scenarios.

In the course of 2021, EIOPA carried out multiple comparative studies of internal models, in which Hannover Re participated. Aspects such as the diversification, parameters and results of the market risk models as well as those for the nonlife underwriting risk were compared. The studies and their findings are intended to harmonise supervisory approaches in the EU and hence refine the supervision of internal models above and beyond the existing tools. This poses, among other issues, a risk that company-specific approaches may be too heavily restricted as a consequence of the findings.

Turning to new and upcoming regulatory requirements and expectations, compliance risks are taking on ever greater significance at both the national and international level. Especially in the context of IT regulation, more exacting supervisory standards have been adopted on the security and governance of Information and Communication Technology. Furthermore, at the end of 2021 the Federal Financial Supervisory Authority (BaFin) began work on a revision of the Supervisory Requirements for IT in Insurance Undertakings (VAIT) in order to harmonise them with European laws and regulations. Market access risks continue to emerge worldwide. Growing protectionism is a particularly unfortunate trend at a time when, a global, large and persistent gap exists between

the level of economic losses (especially following catastrophic events) and the level of insured losses.

In its work programme for 2022, EIOPA announced its intention to assess harmonization of the rules for EU market access regarding third-country reinsurers as part of its mission to bring about convergence of international supervisory standards. Should Europe decide to impose more exacting restrictions, there is a risk that this may lead to reciprocal actions by international jurisdictions.

C.6.4.3 Corporate taxes

In 2021 the OECD presented its so-called model rules for reform of the international tax system to assist in implementation of a minimum 15 % global corporate income tax rate. The OECD model rules are intended to serve as a template for adoption into national law by the individual member states. The OECD is proposing implementation as early as 2023.

C.6.4.4 Risks from the processing of electronic data

Recent years have seen the increasing emergence of risks relating to electronic data and systems. Hannover Re, in common with other companies, is at risk of outside attacks on its own IT systems and has put in place extensive safeguards. Furthermore, Hannover Re offers reinsurance coverage for risks connected with electronic systems and data (cyber risks). The systems used to manage these cyber risks are continuously refined so that the risks can be appropriately limited. In this context, care is taken to ensure that cyber risks are largely assumed deliberately in reinsurance treaties and not unknowingly included as incidental risks under the cover provided (silent cyber).

C.6.4.5 Natural catastrophe risks and climate change

In 2021 Hannover Re was again impacted by natural catastrophe events in various parts of the world (Europe, the United States, Australia). Particularly noteworthy in the year under review were winter storm Uri, intense rainfall event Bernd, Hurricane Ida and a series of tornados in the US. Natural disasters should be viewed as inextricably linked to climate change. The associated impacts present a major challenge for risk management. We use both external and internal risk models to simulate the impacts of catastrophic events. The monitoring of risks resulting from natural perils is complemented by stress tests as well as scenario and sensitivity analyses.

C.6.4.6 Capital market environment

The persistently low level of interest rates is a major external factor influencing the return that can be generated on our investments. Interest rate increases – which in some instances were very marked – were recorded not only for euro-denominated bonds but also in the US dollar and sterling markets in the first quarter of the year. Despite renewed modest declines subsequently seen in the area of the US dollar and British pound, we benefit from the higher rate level overall when making new investments and in our reinvesting activities. Yields on euro area government bonds were negative well beyond the 10-year maturity point. Credit spreads also retreated from the beginning of the year onwards for bonds issued by developing countries and in the case of lower-quality

issuers, while in other sectors they remained very largely stable or showed at most modest declines over a long period.

Here, too, however, emerging nervousness in financial markets in connection with new variants of the coronavirus was reflected in slightly higher risk premiums by year-end. All in all, the economic repercussions of the Covid-19 pandemic on financial markets continued to be extensively cushioned by fiscal and monetary backstopping. This was reinforced by the vaccination progress made worldwide and a slow easing in the consumption backlog. This impressive development is also reflected in rising raw materials and transport costs. These, in turn, are passed on in the form of generally higher prices. The systematic inflation concerns of other market participants currently still appear fragile when it comes to their potential longevity. It is still too soon to make any definitive judgement on the indications of structural and protracted higher inflation. As growth normalizes and the kinks in the supply chain are ironed out again, it is our expectation that inflation may fade and secondary effects such as wage pressures can be curbed. We are nevertheless keeping close track of the situation with an eye to any opportunities that may arise. The economy continues to enjoy strong support from central banks in our main currency areas, which largely pressed ahead with their expansionary interest rate policy adopted in the prior year. Both the Federal Reserve and the European Central Bank left their key rates on the previous year's low level. The Bank of England, on the other hand, was the first major central bank to modestly increase its key lending rate in December – primarily in response to inflationary tendencies. The ECB – in common with the Fed and the Bank of England – continued its extensive asset purchase programme for bonds issued by governments and corporate entities in order to support them in this time of crisis. Overall, then, the policies pursued by central banks in our main currency areas were essentially consistent – supplemented by significant fiscal interventions –, although they varied in scale and the measures taken. We view these worldwide interventions by governments and central banks with their enormous money supply as a not inconsiderable challenge because in some ways they divorce the financial world from the natural, reciprocal control mechanisms of the financial markets and it is unclear to what extent the current or future valuation levels are supported by fundamentals. The worldwide progress of vaccination campaigns and their effectiveness will be pivotal to economic development going forward. In conjunction with continued catch-up effects and higher inflation, this may still lead to very high – but potentially unstable – valuation levels on credit and equity markets.

We continue to have exposure to the private equity market. Fair value changes here tend to be less influenced by general market conditions and more by company-specific evaluations. The risks are therefore primarily associated with the business model and profitability and to a lesser extent with the interest rate component in a consideration of cash flow forecasts. Thus, for example, we also view the need to take higher write-downs in the previous year on isolated assets in response to the Covid-19 pandemic not as a reflection of a generally elevated risk in the market, but rather in the context of the risk profile specific to this asset class and set of company characteristics. The write-downs taken in the period under review were already back to the average level of previous years.

The significance of real estate risks remains substantial for us owing to our consistent participation in this sector. We spread these risks through broadly diversified investments in high-quality markets around the world, with each investment decision being preceded by extensive analyses of the relevant property, manager and market. The pandemic has proven to be an additional factor directly affecting the conditions and dynamics on real estate markets. If the economic weakness results (temporarily) in reduced demand for space, this could give rise to flat or declining rental income or rising vacancy rates. Taken in combination with modified expectations for contractual conditions as well as probabilities of lease extensions or new leases, these changed market parameters are reflected in adjusted fair values for real estate. Pandemic-related developments are therefore factored into the real estate valuations. This is true not only of the directly held portfolio but also – with the usual slight time delay – of the real estate fund holdings.

As far as our investments are concerned, we anticipate continuing elevated volatility on global capital markets in the immediate future, although we also see this as an opportunity and believe that we are appropriately prepared with our current investment posture.

C.6.4.7 Inflation

The higher rates of inflation worldwide have the potential to affect multiple factors in our business activities, including for example the premium calculation, the loss reserves, the large loss budget, the investments (as described in the previous section) and the management expenses. We have developed measures to deal with inflation in all these respects. It should be borne in mind here that the general rise in inflation (e. g. as measured by the US CPI) needs to be differentiated from the drivers of claims and cost inflation relevant to our company. The Hannover Re-specific claims inflation index is a blend of different regions and currencies and dependent on the line of business. Mention should be made here of wages and salaries for liability business, construction costs for property insurance including natural perils and medical expenses for life and health insurance. Inflation is considered in our reserving process. Essentially, this process is based on average past inflation rates; we work with loadings if there are indications of a future rise in inflation. Adequate reserving processes are especially important in long-tail lines because multiple underwriting years can be affected at the same time. We monitor inflation drivers over the entire course of the business and reduce them by, among other things, making appropriate allowance in the premium calculation and by means of index clauses and sliding-scale commissions.

C.6.4.8 Supply chain risks

It has become clear over the course of the current pandemic that global supply chains – especially in combination with lower inventories – pose risks to the continuity of operations in many sectors. This can result in higher claims expenditures on account of increased procurement costs or business interruptions. Increasingly exacting regulatory requirements governing corporate responsibility for human rights and other sustainability concerns, especially as they relate to supply chains, will continue to grow in importance for the international business community over the coming years.

C.6.4.9 Biometric risks

We continuously monitor the development of our mortality business (especially in the United States) as well as of our worldwide morbidity business, particularly with an eye to the impacts of the Covid-19 pandemic. It is to be anticipated that the Covid-19 pandemic will lead to further strains in 2022. Mention should be made here of not only the US portfolio but also, most notably, the book of South African and South American mortality business.

C.6.4.10 War in Ukraine

In line with regulatory requirements, this report has a focus on the financial year 2021. Developments since year-end 2021 include the Russian invasion on the territory of Ukraine starting in February 2022. The impact of this war and its consequences cannot be assessed at the present in full detail. Major geopolitical shifts are to be expected. Substantial volatilities at the financial

markets including high commodity prices have been observed. Most reinsurance treaties have some form of coverage exclusion for losses from war. However, specialty lines provide these covers under certain circumstance. Apart from risk of losses from these lines, increasing inflation and cyber activities pose additional risks. Investments are affected by the developments at the financial markets. The full scope of implications is currently not known. Hannover Re has set up a continuous monitoring of the situation and has implemented the imposed sanctions.

C.6.5 Contagion risks

Contagion risk refers to the risks originated by interactions between individual entities of Hannover Re Group. More precisely, contagion risk is the propagation of the effect of a failure or financial distress of an organisation in a sequential manner to other organisations, markets or systems, or to other parts of a financial group or financial conglomerate.

Hannover Re manages this risk by a strict look-through approach in its management systems.

D. Valuation for Solvency purposes

A valuation principle assigns monetary values to sets of rights and obligations in a structured way. The decision on what rights and obligations need to be considered is one of the distinguishing features of the valuation principles.

Hannover Re's internal valuation approaches are based on economic valuation principles. In principle economic valuation assigns to each right or obligation the price at which this right or obligation would be traded in an arms-length transaction between willing and knowledgeable parties. This principle has the advantages of being:

- Objective, since transaction prices can (in theory) be simply observed and do not require any further input,
- Comprehensive, since a transaction would incorporate all potential cash flows arising from those rights or obligations. In particular there can be no off-balance sheet items within an economic valuation framework,
- Risk-adjusted, since trades between risk-averse parties will always incorporate the price of risk.

Depending on the specific position being valued and the state of the market at the time of valuation, two different and mutually exclusive levels of valuation can be distinguished:

Mark-to-market: This is the prototypical and simplest level of economic valuation. It is applicable if the positions to be valued are quoted in an active market. In that case, the value of the position is just the market price. Examples for positions, which can be valued on a mark-to-market basis are US treasuries, blue chips or futures with standard maturities on broad indices, such as the S&P 500. In general, everything traded in a deep and liquid market can be valued on a mark-to-market basis.

Market-consistent valuation (mark-to-model): This principle applies if neither prices themselves nor all inputs required for generally accepted pricing models can be observed in active markets. Accordingly, at least some parameters and inputs will be based on judgmental, and thus subjective, decisions. The valuation of many investments and most insurance contracts falls within this category, which is why this level of valuation is the most important one within the internal model. For consistency of the valuation with mark-to-market principles, it is required that

1. Observable prices and model parameters derived from them are used wherever available,
2. Parameter estimates are unbiased and derived according to sound techniques based on statistics or expert judgment,
3. Unavoidable risk must be allowed for in the valuation, consistent with the prevailing market price of risk. For this, it does not matter whether the risk is caused by the cash flows themselves or due to uncertainties in models or parameter estimates. This allowance for risk is called the risk margin.

Unavoidable risk is defined as the risk, which cannot be replicated completely by instruments with mark-to-market or mark-to-model valuation. If it can be replicated by such instruments, the risk can be avoided by investing in the replicating portfolio and the price of the position will be identical to the price of the replicating portfolio. This follows from the law of one price which is valid under

certain assumptions on the markets. Of course, the liquidity of the replicating portfolio is crucial for this argument to hold.

Many risks are hedgeable in principle but some positions in the resulting hedge portfolios might not be quoted in active markets. One example is credit risk of smaller or non-listed obligors, where in theory OTC CDS are available from certain counterparties but observable market prices are not. In addition, if the position cannot be replicated perfectly, i.e. if basis risk remains, this residual risk is still considered unavoidable and requires a risk margin.

On the other hand, a position might be valued on a mark-to-market basis although it is not hedgeable, examples being long positions in small caps or mutual funds. These can neither be shorted nor are derivatives on the underlying available. The terms unavoidable and non-hedgeable will be used synonymously below.

Non-hedgeable risk is allowed for in Hannover Re's economic valuation framework by decreasing assets and / or increasing liabilities with a risk margin. Hannover Re defines the risk margin for non-hedgeable risk as the market cost of capital required for the orderly run-off of all its rights and obligations.

Fair value hierarchy according to IFRS

The fair value hierarchy according to IFRS, which reflects characteristics of the price data and inputs used for measurement purposes, is similar to Solvency II valuation methods and structured as follows:

- Level 1: Assets or liabilities measured at (unadjusted) prices quoted directly in active and liquid markets.
- Level 2: Assets or liabilities which are measured using observable market data and are not allocable to level 1. Measurement is based, in particular, on prices for comparable assets and liabilities that are traded on active markets, prices on markets that are not considered active as well as inputs derived from such prices or market data.
- Level 3: Assets or liabilities that cannot be measured or can only be partially measured using observable market inputs. The measurement of such instruments draws principally on valuation models and methods.

If input factors from different levels are used to measure a financial instrument, the level of the lowest input factor material to measurement is determinative. The operational units responsible for coordinating and documenting measurement are organisationally separate from the operational units that enter into investment risks. All relevant valuation processes and valuation methods are documented. Decisions on fundamental valuation issues are taken by a valuation committee that meets monthly.

General valuation principles

The primary objective is an economic, market-consistent approach to the valuation of assets and liabilities. According to the risk-based approach in the internal steering processes as well as under Solvency II, when valuing balance sheet items on an economic basis, the risks that arise from a particular balance sheet item need to be considered, using assumptions that market participants would use in valuing the asset or the liability.

According to this approach, assets and liabilities should be valued as follows:

- Assets should be valued at the amount for which they could be exchanged between knowledgeable willing parties in an arm's length transaction.
- Liabilities should be valued at the amount for which they could be transferred, or settled, between knowledgeable willing parties in an arm's length transaction.
- The time value of money should be reflected, i.e. all cash flows are discounted. The discount rate should take the long-term asset management strategy into account, i.e. whether the company acts as held-to-maturity investor or not.
- When valuing liabilities no adjustment to take account of the own credit standing of the insurance or reinsurance undertaking shall be made.
- Assets and liabilities shall be valued based on the assumption that the undertaking will pursue its business as a going concern.
- Individual assets and liabilities are valued separately.
- The application of materiality, whereby the omissions or misstatements of items are material if they could, individually or collectively, influence the economic decisions that users make on the basis of the Solvency II balance sheet. Materiality depends on the size and nature of the omission or misstatement judged in the surrounding circumstances. The size or nature of the item, or a combination of both, could be the determining factor.
- The application of simplifications is feasible when the method is proportionate to the nature, scale and complexity of the risks inherent.

Unless otherwise stated, assets and liabilities other than technical provisions shall be recognised in conformity with the international accounting standards, as endorsed by the Commission in accordance with Regulation (EC) No 1606/2002.

- Valuation of assets and liabilities other than technical provisions shall be carried out, unless otherwise stated, in conformity with international accounting standards, as endorsed by the Commission in accordance with Regulation (EC) No 1606/2002 provided that those standards include valuation methods that are consistent with the valuation approach set out in Article 75 of Directive 2009/138/EC. If those standards allow for more than one valuation method, only valuation methods that are consistent with Article 75 of Directive 2009/138/EC can be used.
- Where the valuation methods included in international accounting standards, as endorsed by the Commission in accordance with Regulation (EC) No 1606/2002 are either temporarily or permanently not consistent with the valuation approach set out in Article 75 of Directive 2009/138/EC, insurance and reinsurance undertakings shall use the other valuation methods that have been deemed to be consistent with Article 75 of Directive 2009/138/EC.
- When valuing liabilities using fair value, the adjustment to take account of the own credit standing as required by IFRS 13 Fair Value Measurement has to be eliminated. When valuing financial liabilities this only applies to the subsequent adjustment after initial recognition.
- As a Guidance for marking-to-market and marking-to-model the guidance on fair value measurement within IFRS 13 may be used, for example the characteristics of inactive markets described in IFRS 13.

IFRS do not always require an economic valuation as envisaged by Article 75 of Directive 2009/138/EC.

Hannover Re made use of the volatility adjustment for the first time. The impact of the application of the volatility adjustment is displayed in Section D.2.

D.1 Solvency II balance sheet

Difference in valuation

in TEUR	Item	Solvency II	IFRS
Assets			
Goodwill	R0010		83,933
Deferred acquisition costs	R0020		3,350,633
Intangible assets	R0030		164,187
Deferred tax assets	R0040	368,823	676,344
Property, plant & equipment held for own use	R0060	178,975	166,590
Investments (other than assets held for index-linked and unit-linked contracts)	R0070	54,608,532	54,552,481
Property (other than for own use)	R0080	2,308,643	1,818,754
Holdings in related undertakings, including participations	R0090	573,240	574,488
Equities	R0100	175	0
Equities - listed	R0110		0
Equities - unlisted	R0120	175	
Bonds	R0130	45,492,915	47,882,356
Government Bonds	R0140	24,096,610	26,998,739
Corporate Bonds	R0150	19,928,724	19,492,899
Structured notes	R0160	77,518	0
Collateralised securities	R0170	1,390,064	1,390,719
Collective Investments Undertakings	R0180	4,970,074	3,535,593
Derivatives	R0190	18,537	250,245
Deposits other than cash equivalents	R0200	1,176,304	415,709
Other investments	R0210	68,643	75,335
Loans and mortgages	R0230	360,660	307,665
Loans and mortgages to individuals	R0250	2,619	
Other loans and mortgages	R0260	358,041	307,665
Reinsurance recoverables from:	R0270	1,838,510	3,073,446
Non-life and health similar to non-life	R0280	1,881,853	2,733,818
Non-life excluding health	R0290	1,864,475	2,733,328
Health similar to non-life	R0300	17,379	490
Life and health similar to life, excluding health and index-linked and unit-linked	R0310	-77,673	339,628
Health similar to life	R0320	248,696	30,966
Life excluding health and index-linked and unit-linked	R0330	-326,370	308,662
Life index-linked and unit-linked	R0340	34,330	
Deposits to cedants	R0350	11,337,121	11,306,483
Insurance and intermediaries receivables	R0360	1,358,360	7,128,716
Reinsurance receivables	R0370	259,645	79,034
Receivables (trade, not insurance)	R0380	482,781	479,188
Cash and cash equivalents	R0410	1,355,071	1,355,114
Any other assets, not elsewhere shown	R0420	171,898	178,438
Total assets	R0500	72,320,375	82,902,252

in TEUR	Item	Solvency II	IFRS
Liabilities			
Technical provisions – non-life	R0510	33,958,469	41,398,552
Technical provisions – non-life (excluding health)	R0520	31,696,120	38,728,685
TP calculated as a whole	R0530		
Best Estimate	R0540	30,968,148	
Risk margin	R0550	727,972	
Technical provisions - health (similar to non-life)	R0560	2,262,349	2,669,867
TP calculated as a whole	R0570		
Best Estimate	R0580	2,153,929	
Risk margin	R0590	108,420	
Technical provisions - life (excluding index-linked and unit-linked)	R0600	11,139,989	13,958,583
Technical provisions - health (similar to life)	R0610	3,978,950	3,872,221
TP calculated as a whole	R0620		
Best Estimate	R0630	3,362,661	
Risk margin	R0640	616,289	
Technical provisions – life (excluding health and index-linked and unit-linked)	R0650	7,161,040	10,086,362
TP calculated as a whole	R0660		
Best Estimate	R0670	4,544,196	
Risk margin	R0680	2,616,844	
Technical provisions – index-linked and unit-linked	R0690	1,152,908	
TP calculated as a whole	R0700		
Best Estimate	R0710	1,140,470	
Risk margin	R0720	12,438	
Contingent liabilities	R0740		
Provisions other than technical provisions	R0750	182,623	182,623
Pension benefit obligations	R0760	208,750	208,750
Deposits from reinsurers	R0770	595,968	4,218,935
Deferred tax liabilities	R0780	3,808,053	2,836,374
Derivatives	R0790	52,438	75,084
Debts owed to credit institutions	R0800	540,940	536,439
Financial liabilities other than debts owed to credit institutions	R0810	966,178	913,283
Insurance & intermediaries payables	R0820	927,282	1,699,763
Reinsurance payables	R0830	141,727	680,918
Payables (trade, not insurance)	R0840	233,562	233,592
Subordinated liabilities	R0850	3,029,745	2,977,402
Subordinated liabilities not in BOF	R0860		
Subordinated liabilities in BOF	R0870	3,029,745	2,977,402
Any other liabilities, not elsewhere shown	R0880	225,753	225,722
Total liabilities	R0900	57,164,387	70,146,020
Excess of assets over liabilities	R1000	15,155,988	12,756,231

For general differences in valuation between Solvency II and IFRS please refer to Section D.

Comparison to prior year

in TEUR	Item	Solvency II 2021	Solvency II 2020
Assets			
Intangible assets	R0030		
Deferred tax assets	R0040	368,823	351,230
Pension benefit surplus	R0050		
Property, plant & equipment held for own use	R0060	178,975	148,455
Investments (other than assets held for index-linked and unit-linked contracts)	R0070	54,608,532	47,787,085
Property (other than for own use)	R0080	2,308,643	1,967,999
Holdings in related undertakings, including participations	R0090	573,240	787,755
Equities	R0100	175	623
Equities - listed	R0110		623
Equities - unlisted	R0120	175	0
Bonds	R0130	45,492,915	39,743,752
Government Bonds	R0140	24,096,610	21,593,451
Corporate Bonds	R0150	19,928,724	17,018,444
Structured notes	R0160	77,518	100,488
Collateralised securities	R0170	1,390,064	1,031,369
Collective Investments Undertakings	R0180	4,970,074	4,452,509
Derivatives	R0190	18,537	7,159
Deposits other than cash equivalents	R0200	1,176,304	712,416
Other investments	R0210	68,643	114,871
Assets held for index-linked and unit-linked contracts	R0220		
Loans and mortgages	R0230	360,660	3,557
Loans and mortgages to individuals	R0250	2,619	2,947
Other loans and mortgages	R0260	358,041	610
Reinsurance recoverables from:	R0270	1,838,510	1,247,162
Non-life and health similar to non-life	R0280	1,881,853	1,231,065
Non-life excluding health	R0290	1,864,475	1,214,269
Health similar to non-life	R0300	17,379	16,796
Life and health similar to life, excluding health and index-linked and unit-linked	R0310	-77,673	-13,174
Health similar to life	R0320	248,696	328,165
Life excluding health and index-linked and unit-linked	R0330	-326,370	-341,339
Life index-linked and unit-linked	R0340	34,330	29,271
Deposits to cedants	R0350	11,337,121	10,706,051
Insurance and intermediaries receivables	R0360	1,358,360	1,039,766
Reinsurance receivables	R0370	259,645	271,637
Receivables (trade, not insurance)	R0380	482,781	425,682
Cash and cash equivalents	R0410	1,355,071	1,278,038
Any other assets, not elsewhere shown	R0420	171,898	155,347
Total assets	R0500	72,320,375	63,414,008

in TEUR	Item	Solvency II 2021	Solvency II 2020
Liabilities			
Technical provisions – non-life	R0510	33,958,469	29,219,495
Technical provisions – non-life (excluding health)	R0520	31,696,120	27,174,445
TP calculated as a whole	R0530		
Best Estimate	R0540	30,968,148	26,452,824
Risk margin	R0550	727,972	721,621
Technical provisions - health (similar to non-life)	R0560	2,262,349	2,045,050
TP calculated as a whole	R0570		
Best Estimate	R0580	2,153,929	1,987,913
Risk margin	R0590	108,420	57,138
Technical provisions - life (excluding index-linked and unit-linked)	R0600	11,139,989	10,254,593
Technical provisions - health (similar to life)	R0610	3,978,950	3,275,301
TP calculated as a whole	R0620		
Best Estimate	R0630	3,362,661	2,824,618
Risk margin	R0640	616,289	450,683
Technical provisions – life (excluding health and index-linked and unit-linked)	R0650	7,161,040	6,979,292
TP calculated as a whole	R0660		
Best Estimate	R0670	4,544,196	4,435,028
Risk margin	R0680	2,616,844	2,544,264
Technical provisions – index-linked and unit-linked	R0690	1,152,908	977,056
TP calculated as a whole	R0700		
Best Estimate	R0710	1,140,470	959,501
Risk margin	R0720	12,438	17,555
Contingent liabilities	R0740		3,554
Provisions other than technical provisions	R0750	182,623	175,892
Pension benefit obligations	R0760	208,750	229,252
Deposits from reinsurers	R0770	595,968	554,043
Deferred tax liabilities	R0780	3,808,053	3,439,423
Derivatives	R0790	52,438	51,619
Debts owed to credit institutions	R0800	540,940	381,262
Financial liabilities other than debts owed to credit institutions	R0810	966,178	952,347
Insurance & intermediaries payables	R0820	927,282	892,488
Reinsurance payables	R0830	141,727	113,563
Payables (trade, not insurance)	R0840	233,562	221,337
Subordinated liabilities	R0850	3,029,745	2,363,490
Subordinated liabilities in BOF	R0870	3,029,745	2,363,490
Any other liabilities, not elsewhere shown	R0880	225,753	150,518
Total liabilities	R0900	57,164,387	49,979,933
Excess of assets over liabilities	R1000	15,155,988	13,434,076

Solvency II recognition, valuation and presentation of balance sheet items follows regulatory requirements. The IFRS balance sheet is taken from Hannover Re Group's annual financial statements and shown in the column "IFRS" on the right hand side.

Note that for allocation of investments under own management to Solvency II balance sheet items, detailed EIOPA regulations on classification as well as BaFin regulations (e.g. regarding collective investment undertakings) have to be followed and are not utilised for the IFRS balance sheet items.

Comparing Solvency II and IFRS balance sheets, Hannover Re Group classifies differences in recognition, valuation and presentation into the following categories:

- Adjustments of self-managed investments, which comprise market valuation vs. valuation at amortised cost for several, but not all self-managed investments under IFRS,
- Adjustments of technical items (incl. risk margin), where technical items are revaluated for Solvency II purposes as described in Section D.2,
- Adjustments of other balance sheet items (without deferred taxes), which mostly consist of differences in recognition of balance sheet items for Solvency II vs. IFRS (e.g. intangible assets) as well as reclassifications, together with market valuation (e.g. of subordinated liabilities),
- Deferred tax, which comprises the effects on deferred tax assets and deferred tax liabilities when moving from IFRS to Solvency II valuation.

Those adjustments amounted to a difference in excess of assets over liabilities (including minorities) for Solvency II compared to IFRS of TEUR 2,399,757 as at the balance sheet date.

For the Solvency II balance sheet as at the balance sheet date, the principles of recognition, valuation and presentation remained unchanged compared to the previous period.

D.2 Technical provisions

The technical provision (TP) under Solvency II is determined as the sum of the best estimate liability (BEL) and the risk margin (RM).

Cash flows are discounted with risk-free rates in line with EIOPA requirements. A matching adjustment is not applied. Furthermore, the risk-free yield curves are not adjusted as set out in Art. 308c of the directives 2009/138/EC.

A temporary deduction according to Art. 308d of the directives 2009/138/EC is not applied. Furthermore, the concept of calculating the "TP as a whole" is currently not applied.

Hannover Re applies the static volatility adjustment according to Article 77d of the Directive 2009/138/EC. This is intended to mitigate the effect of temporary value fluctuations due to credit spread movements on the bond market. In order to capture this effect adequately for the calculation of the required capital Hannover Re uses the dynamic volatility in its internal model. The following table shows the impact of a non-application of a volatility adjustment on the TP, the Solvency Capital Requirement (SCR) and the basic own funds and the amounts of own funds eligible to meet the SCR.

Even under a non-application of a volatility adjustment, the solvency ratio is still comfortable.

Impact of non-application of a volatility adjustment

in TEUR	Amount with Long Term Guarantee measures and transitionals	Impact of volatility adjustment set to zero
Technical provisions	46,251,366	316,945
Basic own funds	16,783,730	-169,984
Eligible own funds to meet Solvency Capital Requirement	16,783,730	-169,984
Solvency Capital Requirement	6,904,154	232,530

For Solvency II purposes, all contracts have to be evaluated over the whole lifetime within the individual contract boundaries (ultimate view). The contract boundary is defined as the future date on which at least one of the following criteria is met:

- The (re)insurance undertaking has an unilateral right to terminate the contract.
- The (re)insurance undertaking has an unilateral right to reject premiums payable under the contract.
- The (re)insurance undertaking has an unilateral right to amend the premiums or benefits payable under the contract in such a way that the premiums fully reflect the risks.

In case no such condition is met, the policies are projected until their natural expiry.

The BEL is shown on a gross basis in the following, i.e. before the reduction of reinsurance recoverables, if not stated otherwise. The RM is shown on a net basis, i.e. reflecting the risk mitigating effect of retrocessions. This is consistent with the methodology used in the Solvency II balance sheet.

Best Estimate Liability (BEL)

The calculation of the BEL is based on the projection of future cash in- and outflows including premiums, claims, and expenses. Best estimate assumptions are used in the calculation of the BEL. The expenses consist of direct administration expenses and costs of on-going operations.

Cash flows in connection with funds withheld (FWH) – increase, decrease or interest on FWH – of the underlying business are usually not netted against the liability cash flows. Any FWH shown as such in the IFRS balance sheet will need to be shown as a FWH in the Solvency II balance sheet. For very risk remote transactions a netted presentation is still proceeded in line with the IFRS presentation. For all other transactions the FWH are grossed up.

The not due balances of accounts payables and receivables were allocated to the best estimates of technical provisions (for assumed business) or reinsurance recoverables (for retroceded business).

According to Solvency II there is a differentiation between business accepted – shown on the liability side – and business ceded – shown on the asset side. According to IFRS, the assignment to the asset and liability side, respectively, partially depends on the sign of the accounting figures.

For the Property & Casualty business, the TP does not include any financial options and guarantees (FOGs). For the Life & Health business, there is an immaterial amount of FOGs for US business. The latter is included in the BEL.

The projections are done separately for assumed and retroceded business using the same bases, methods and assumptions.

Risk Margin (RM)

According to Art. 37 (1) of the delegated acts (EU) 2015/35, a uniform Cost of Capital (CoC) approach is used for calculating the risk margin.

The CoC factor is 6%. The required capital is the SCR under Solvency II according to Hannover Re's internal model. The allocation of the SCR to the lines of business reflects the contribution to the SCR (Art. 37). The allocated SCR contributions are projected to future periods using appropriate risk drivers for each line of business.

According to Solvency II principles, the risk margin of all legal entities is calculated on a standalone basis, thus there is no allowance for diversification effects between legal entities. Diversification is taken into account within a legal entity including diversification effects between Property & Casualty and Life & Health.

Covid-19 pandemic

The Crisis Management Team set up in 2020 continued to manage operations prudently in 2021. Business travel remained constrained. Working from home – which applied to large parts of the workforce – went smoothly, in part thanks to the use of videoconferencing and extensively digitalised business processes. Consequently, in 2021 we once again did not identify any material impacts of the Covid-19 pandemic on our operations. After an initial, gradual return to the company's business premises in the second half of the year, employees were, once again, urged to work from home in the fourth quarter – depending on their location – due to the accelerating spread of infections around the world.

We continue to evaluate our financial strength and profitability on a regular basis using stress tests and sensitivity analyses and will take measures as needed to reduce risks or strengthen our equity resources. In this regard, the largest reserves on the reinsurance side were for coverage of business interruption, excess mortality, credit insurance and event cancellations. With the pandemic still ongoing, any forecasts are still subject to considerable uncertainty. It remains to be seen how well the vaccines and boosters currently available will work against new variants of the virus.

We are also monitoring the long-term post-infection effects. The so-called “post-Covid syndrome” would have negative implications for the coverage of sickness costs and disability. Early study results suggest that these patients suffer not only from fatigue and a general loss of energy, but also increasingly from anxiety disorders and depression.

We continuously monitor the development of our mortality business (especially in the United States) as well as of our worldwide morbidity business, particularly with an eye to the impacts of the Covid-19 pandemic. It is to be anticipated that the Covid-19 pandemic will lead to further strains in 2022. Mention should be made here of not only the US portfolio but also, most notably, the book of South African and South American mortality business.

D.2.1 Technical provisions of Property and Casualty Reinsurance

This section provides information on the technical provisions held for property and casualty reinsurance and insurance. The next sections shows BEL and RM per line of business and the following section provides further detail on the valuation methods.

D.2.1.1 Value of technical provisions

Gross technical provisions property & casualty by lines of business

in TEUR

Line of business	BEL	RM	TP	TP IFRS	Difference SII and IFRS
General liability insurance	4,191,662	116,027	4,307,689	5,011,392	-703,703
Workers' compensation insurance	194,514	16,577	211,091	131,711	79,379
Income protection insurance	433,737	20,192	453,929	514,111	-60,182
Fire and other damage to property insurance	5,809,358	135,924	5,945,282	6,346,534	-401,252
Motor vehicle liability insurance	2,496,019	32,794	2,528,814	2,842,435	-313,621
Credit and suretyship insurance	1,471,250	41,636	1,512,886	1,883,521	-370,635
Marine, aviation, transport	950,115	22,062	972,177	1,321,287	-349,110
Other motor insurance	1,087,725	26,058	1,113,783	1,237,642	-123,859
Other insurance	406,045	8,213	414,258	497,467	-83,209
Non-proportional health reinsurance	1,478,099	70,096	1,548,195	2,277,782	-729,587
Non-proportional property reinsurance	5,274,093	79,297	5,353,390	6,925,564	-1,572,174
Non-proportional marine, aviation and transport	885,903	19,238	905,142	1,291,615	-386,473
Non-proportional casualty reinsurance	8,443,557	248,277	8,691,834	11,117,492	-2,425,658
Total Non-Life Obligation	33,122,077	836,392	33,958,469	41,398,552	-7,440,083

The line of business "Other insurance" comprises assistance, legal expenses insurance, medical expense insurance and miscellaneous financial loss.

D.2.1.2 Valuation of technical provisions

For the calculation of the BEL under Solvency II the business of the company is split into homogeneous risk groups such that the nature, scale and complexity of the business is adequately taken into account.

In general, there are no deviations regarding the valuation methods between the different lines of business, therefore the valuation methods described in the following paragraphs are valid for all segments of property and casualty reinsurance.

The evaluation of the BEL is based on the estimation of future cash flows, including all expected (future) cash in- and outflows related to existing obligations taking into account the time value of money. The BEL is calculated separately with respect to the best estimate premium provisions and the best estimate claims provisions.

The Solvency II calculations to determine all relevant cash flows for premium and claims provision reflect a best estimate projection. The calculation of the BEL is based on gross data. Cash flows for premiums, claims and costs are modelled separately.

For the calculation, a whole-contract-view (with respect to the contractual agreements) is taken into account, i.e. all cash in- and outflows are projected to the economic ultimate within the contract boundaries.

The BEL comprises the sum of the discounted cash flows and is aggregated to the minimum lines of business according to Solvency II requirements.

For the calculation of the BEL, development pattern and estimated ultimates are applied on the homogeneous risk groups. The pattern and the ultimates are determined on run-off triangles using standard actuarial methods, in particular, variations of the Chain-Ladder-Method. The triangles are generated using up-to-date and trustworthy data.

The cash flows are discounted using the risk-free interest rates provided by EIOPA and converted to the reporting currency EUR using the exchange rate on the valuation date.

Overall, the described valuation bases, methods and assumptions ensure that the calculation of the BEL is proportionate to the nature, scale and complexity of the underlying risks.

Reinsurance Recoverables

In general, the projection of the reinsurance recoverables is undertaken analogously to the principles applied for the calculation of technical (gross) provisions of property and casualty reinsurance.

The reinsurance recoverables are adjusted with regard to the expected loss upon default of the counterparty. This adjustment is determined separately and is based on the valuation of the probability of a default per counterparty over the whole lifetime – whether be it through insolvency or legal dispute – as well as the resulting change in cash flows due to loss per default at the respective time under consideration.

D.2.1.3 Comparison with other provisions

Comparison to IFRS provisions

This section outlines the reconciliation of the net technical provisions from IFRS to the Solvency II.

Reconciliation Solvency II vs. IFRS

in TEUR

Description	2021
IFRS "net technical provisions" property and casualty (incl. unearned premium reserve)	38,664,735
Discounting of cash flows	-1,807,852
Risk margin	836,392
Differences in actuarial estimates and business volume differences	-2,279,164
Total revaluation effect from IFRS to Solvency II	-3,250,623
Netting of accounts payables and receivables	-3,337,496
Solvency II net technical provisions property and casualty	32,076,616

The individual items of the reconciliation refer to the following aspects:

- Solvency II technical provisions are present values of future cash flows discounted at the risk-free interest rate, whereas under IFRS generally annuity reserves are discounted, only.
- The risk margin under Solvency II covers the costs of providing an amount of eligible own funds equal to the Solvency Capital Requirement necessary to support the insurance and reinsurance obligations over their lifetime.
- Solvency II technical provisions are calculated as a probability weighted average, whereas under IFRS the technical provisions represent a more prudent best estimate. In addition, Solvency II takes a homogenous ultimate view while IFRS distinguishes earned and unearned loss and premium reserves. Both effects are presented as item "Differences in actuarial estimates and business volume differences".
- The accounts payables receivables are netted against the Solvency II cash flows.

Comparison to BEL of last year

Comparison to prior year

in TEUR	2021	2020
BEL gross	33,122,077	28,440,737
BEL net	31,240,223	27,209,672
RM	836,392	778,759

The BEL increases due to increased business volumes as well due to provisions for large losses.

D.2.2 Technical provisions Life & Health

In the section, we provide quantitative information with respect to the Life & Health BEL, RM and TP as well as a comparison to the IFRS liability.

Details with respect to the basis of valuation, the valuation methods, and the main assumptions underlying the calculation of the TP are given in Section „D.2.2.2 Valuation of technical provisions“.

Material differences between the TP and the IFRS liability are explained in Section D.2.2.4.

D.2.2.1 Quantitative Information on technical provisions Life & Health

The following table provides an overview of the liabilities of the segments. The index-linked and unit-linked business is contained in the life segment.

Technical provisions Life & Health per line of business in TEUR

Line of Business	BEL	RM	TP	IFRS liability	Comparison IFRS/ Solvency II
Life	5,684,666	2,629,282	8,313,948	10,086,362	-1,772,414
Health	3,362,661	616,289	3,978,950	3,872,221	106,729
Total	9,047,327	3,245,571	12,292,898	13,958,583	-1,665,685

Details regarding the treatment of funds withheld (FWH) as well as payables and receivables are provided in Section D.2. The segmentation into the Life and Health lines of business is slightly different under Solvency II and IFRS. A reconciliation from the IFRS liability net of reinsurance to the Solvency II TP net of reinsurance is provided in Section D.2.2.3.

D.2.2.2 Valuation of the technical provisions Life & Health

Valuation basis

All business is valued employing current best estimate assumptions. The general methodology used for calculating the BEL, RM and TP is described in Section D.2.

With only a few exceptions, the BEL is calculated individually per treaty. The calculation is based on weighted model points or – if available and material – based on individual policy data. The portfolio development is modelled using appropriate mortality and morbidity tables, respectively, as well as lapse rates. A certain part of the risk premium basis business is modelled based on a loss-ratio based approach.

Valuation methods

Based on weighted model points (e.g. tariff, gender mix, entry age, policy term, reinsurance conditions) and policy data, respectively, as well as assumptions for mortality, morbidity, lapse and relevant interest rate curves, the portfolio development and all resulting reinsurance profit items (i.e. premium, commission, benefits, reserve changes, and interest) are projected into the future.

Assumed and retroceded business is projected separately. Management expenses are allocated and projected into the future. The BEL is calculated in the respective treaty main currency and using currency specific interest rate curves.

Simplified methods are not used for calculating the BEL and RM, respectively.

Material assumptions for the Life & Health business (excluding longevity business)

Business is written all over the world with a wide range of different policy types, tariffs and mortality / morbidity tables.

For treaties projected individually, the calculation of the BEL is initially based on weighted model points (or detailed policy data). The assumptions are monitored when the accounts from the cedants are booked and are in turn adjusted, if necessary. The base mortality / morbidity table is usually the table used in pricing. Also here, adjustments are made in case that the actual figures materially differ from expectation, or if other relevant information becomes available. The reinsurance conditions of the treaty are reflected in the calculation of the BEL.

For the majority of the business in the US and UK market, specific mortality and morbidity assumptions are derived from Hannover Re's base standard tables and updated regularly. For financial solution and morbidity risk solution business in the US market, mortality / morbidity assumptions are set using best estimate pricing assumptions. Also they are validated regularly. The projection of structured financial transactions in the US market allows for counterparty recapture assumptions. Rates can be increased for certain health business in the US market. This circumstance is reflected in the projections since this is market practice of managing the business.

In addition, there is a provision for the short-term impact of the Covid-19 pandemic on future claims and for the UK market a provision for the impact of delays in the diagnosis of Critical Illness claims due to Covid-19.

Lapse rates are set from the original pricing basis of the treaty and adjusted for actual experience where credible data exists and for changes of the internal view of long-term lapse rates.

With exception of mortality or morbidity business in the North American, UK and Irish market, no allowance for future trends is made.

A few smaller treaties modelled are in an aggregate manner using more general assumptions. Base mortality / morbidity tables are chosen in order to be appropriate for the market of the respective treaties. The assumptions are monitored based on the booked results from the past and adjusted if necessary.

For a portion of the business expected claims are based on claims ratios. I.e. instead of using explicit mortality / morbidity and lapse rates, the claims are estimated via a certain proportion of the premium.

Generally, future management actions are only taken into account for the SCR calculations of certain American and Australian business. Therefore they affect only the RM via the SCR (determined with the internal model), but not the best estimate projections. There are some exceptions for our US business, most importantly, the US mortality business. A detailed future management action plan ("FMA Plan") has been implemented to address issues with parts of the US mortality portfolio. The expected cash flows from in-force management are reflected in the TP.

Material assumptions for the longevity business

The calculation of the BEL is based on policy data. Best estimate base mortality assumptions are set on a treaty level. Best estimate mortality improvement assumptions are set either by treaty or by country. The assumptions are monitored when the accounts from the cedants are booked and are in turn adjusted, if necessary, or if other relevant insight emerges. Furthermore, detailed mortality studies are carried out to allow for a comparison between expectation and experience and to adjust if necessary.

Assumptions changes in comparison to the previous reporting period

Regarding the Covid-19 pandemic, an updated provision was established for expected future claims, most importantly for the US and South African market.

Adjustments to the morbidity assumptions for Critical Illness business of the Shanghai branch in the course of an assumption review and the introduction of a new model, for Critical Illness business of the UK branch as well as for Taiwan disability business led to an increase in BEL. The mortality assumptions for a material life reinsurance treaty of both the Australian subsidiary and the Hong Kong branch were revised causing a further increase in BEL.

The following effects resulted in a decrease in BEL. An updated valuation of the stop loss treaty for US mortality business provided to the Hannover Life Reassurance Company of America (Bermuda) Ltd. resulted in a decrease in BEL. The morbidity assumptions for certain combined long-term care and mortality covers (“LTC Hybrid”) in the US market were adjusted as well.

Reinsurance recoverables

For all retrocessions to third party reinsurers where the recoverable represents an asset to Hannover Re, a default adjustment according to their rating was included.

In total the reinsurance recoverables under Solvency II are negative (TEUR -43,344), i.e. this position is to be seen as a liability for Hannover Re and increases the net Solvency II reserves.

The respective IFRS reinsurance recoverables amount to TEUR 339,628. Some revaluation steps between IFRS and Solvency II are provided in Section D.2.2.4.

Risk assessment

The main area of uncertainty around the level of the TP relates to a potential deviation of actual experience from the underlying assumptions and the sensitivity of cash flows to changes in those assumptions. The Risk Margin can serve as an indicator of such uncertainty.

The key driver to the overall level of uncertainty comes in the form of the mortality, longevity and morbidity business. This also becomes evident from the capital requirements under Solvency II presented in Section E.

For the mortality business, small changes in the mortality rates can have significant effects on the claims payments. However, for a significant share of the portfolio, this risk is largely mitigated by profit commission arrangements or by limits regarding the retention of the cedant such that changes in mortality rates would change the underlying cash flow pattern but would have a limited impact on the associated BEL. The mortality rates are well grounded in available data. For longer tailed products, in particular in the US and UK market, mortality improvement and expert settings can also play an important role. The valuation of the US mortality business reflects the expected cash flows from inforce management activity, most notably rate increases pursuant to the contractual rights.

Significant mortality risk is stemming from US mortality business. The actual mortality experience for the portfolio in question was worse than expected due to the Covid-19 pandemic. Experience continues to be monitored on an ongoing basis.

The valuation of this business reflects the expected cash flows from inforce management activity, most notably rate increases initiated in 2018 pursuant to our contractual rights. Uncertainty results since it is expected that some cedants will seek arbitration proceedings with respect to the

implemented rate increases. Based on information currently available to us, we take a favorable view of our legal position.

The longevity business is very dependent on the appropriateness of the underlying mortality tables and mortality improvement assumptions, in particular due to its long-term nature. While the premiums are known, the expected claim payments are sensitive to the underlying mortality table, and more importantly in the later years, the mortality improvement that is applied to the underlying table. The underlying mortality assumptions are based on copious amounts of data and experience studies, both internally held and industry accepted. However, a certain level of judgment is involved in assessing the applicability of historical mortality improvement observations for forward-looking purposes. In general, changes in the interest rates have little impact as to the cash flows; however, they can have a material impact on the discounting of the cash flows.

Morbidity risks are another driver of uncertainty in the modelling of business. Relevant morbidity risks are stemming from potential changes of incidence rates for Asian critical illness business as well as from Australian and Taiwanese disability business.

Changes in lapse rates are material for certain products as well, with a varying level of confidence based on product design and the experience available. The direction of the lapse effect is dependent on the treaty and type of reinsurance used. In aggregate, an increase in lapse rates would be more adverse in that Hannover Re Group would forgo positive expected future cash flows.

Pandemic risk is a tail risk, i.e. a risk with a low probability of occurrence but a potential high impact. It is one of the key drivers of capital requirements and is therefore allowed for in the Risk Margin.

The TP include adjustments for already incurred as well as expected future claims of the Covid-19 pandemic, especially from the North American market. Nevertheless, there is a certain risk of higher claims in the near future and an adverse development in mortality and morbidity rates from long-term consequences for people suffering from the Covid-19 pandemic.

Financing business is generally not or only moderately exposed to mortality or morbidity risks and thus experiences a low level of uncertainty. Repayment of the outstanding financing amount can diminish on a combination of adverse biometric experience and lapses, but this is accounted for in the Risk Margin. Cedant default risk is also accounted for in the Risk Margin.

D.2.2.3 Comparison of the technical provision with the IFRS liability

In the following, a reconciliation between IFRS and Solvency II liabilities is provided. The reconciliation steps are explained below. The figures are net of reinsurance recoverables.

Reconciliation from IFRS to Solvency II
in TEUR

Reconciliation Step	Explanation	2021
(1)	IFRS liability net of reinsurance	13,618,955
(2)	Deferred Acquisition Costs (DAC) and Contract Deposit (CD)	1,182,206
(3)=(1)+(2)	Technical IFRS liability net of reinsurance	14,801,161
(4)	Risk Margin	3,245,571
(5)	Further differences in methods/ assumptions	-4,697,653
(6)	Netting of accounts payables and receivables	-1,012,837
(7)=(3)+...+(6)	Solvency II TP net of reinsurance	12,336,241

Note that DAC and CD are not applicable under Solvency II.

The sources of the differences in methods and assumptions are:

(5a) The calculation of the BEL includes all future cash flows. For certain business, this means negative liabilities. In contrast, IFRS does not allow for negative liabilities.

(5b) The IFRS liability includes for certain treaties a provision for the risk of adverse deviation (PAD) in the form of buffers in the assumptions, but no further explicit risk margin like in the Solvency II methodology. The TP includes a risk margin but no buffers.

(5c) The BEL reflects current best estimate assumptions (e.g., regarding mortality, mortality improvements and lapse), whereas the IFRS assumptions are locked-in for certain business (depending on the IFRS / US GAAP FAS type).

(5d) The BEL is discounted with current risk free interest rates (including a volatility adjustment), whereas the IFRS liabilities are calculated using locked-in interest rates. The average valuation interest rate is higher than the current Solvency II rates.

(5e) For some treaties the Solvency II contract boundaries differ from the contract boundaries under IFRS.

(5f) Due to different reporting deadlines under IFRS and Solvency II there may appear differences.

(5g) Reclassification from non-technical positions to technical items may cause further differences.

E. Capital Management

This section presents the main elements of Hannover Re's capital management.

E.1 Own Funds

E.1.1 Management of own funds

Hannover Re aims to maintain a capitalisation of at least 180% under Solvency II. In addition, a threshold of 200% is defined. Own funds are managed in such a way that the minimum capitalisation is not undercut in the planning. This is achieved through coordinated planning and management of all own funds components, dividend payments and the risk profile.

The capital management process comprises a classification of all own funds components with regard to the Solvency II tiering specifications, with regard to basic and ancillary own funds and an assessment of the availability of the different own funds components.

In general, it is our objective for our hybrid capital instruments to correspond with the tier 2 category requirements. The timing of each issue takes into account the current market conditions and our medium-term growth objectives. In case of a required replacement of a subordinated bond, the detailed replacement planning process normally begins a year before the regular call date.

Hannover Re Group's economic capital model is used for the evaluation of both the quantitatively measurable individual risks and also the overall risk position. The assumptions and calculation methods for the determination of the risk-bearing capacity of the company are recorded in the documentation of the risk model and in regular reports.

E.1.2 Tiering

The classification of own funds with regard to their ability to cover losses represents a central component of regulatory capital requirements pursuant to Solvency II. The individual components of the own funds will be classified into one of three quality classes ("tiers").

Own fund items classified under tier 1 possess the highest degree of quality, due to the fact that they are permanently available. They equalise verifiably unexpected losses, both during ongoing business operations and in the event of a company liquidation. Tier 2 refers to basic own funds and ancillary own funds which possess the ability to equalise losses incurred in the event of a company liquidation. Own fund items, which are not categorised under tier 1 or tier 2, are categorised under tier 3.

E.1.3 Basic own funds

The following table displays the composition of basic own funds held by Hannover Re Group as of 31 December 2021.

Basic own funds

in TEUR	2021	2020
Tier 1 unrestricted	13,615,484	12,124,227
Ordinary Share capital	120,597	120,597
Share premium account related to ordinary share capital	880,608	880,608
Reconciliation reserve	13,294,683	11,776,344
Non available minority interests at Group level	-680,403	-653,322
Tier 1 restricted	533,225	548,243
Subordinated liabilities	533,225	548,243
Tier 2	2,496,520	1,815,247
Subordinated liabilities	2,496,520	1,815,247
Tier 3	138,500	69,829
Net deferred tax assets	138,500	69,829
Total	16,783,730	14,557,545

The change in basic own funds is a result of the increasing reconciliation reserve, the issue of a subordinated bond in the period under review, the change in the value of existing subordinated capital as well as an increase of the net deferred tax assets position.

The reconciliation reserve change results from a change in excess of assets over liabilities and – compared to the previous year – change in foreseeable dividend.

Solvency II imposes restrictions on the availability of own funds to cover SCR. For Hannover Re restrictions arise from non-available minority interests at Group level which relate primarily to the minority interests in E+S Rück.

Tier 3 capital arises as a consequence of net deferred tax assets in branches and subsidiaries of the Hannover Re Group.

Restrictions may arise from limitations to use tier 2 and tier 3 capital to meet SCR and MCR. Such restrictions do not arise for Hannover Re with respect to SCR coverage but with respect to the availability of tier 2 and tier 3 capital to cover MCR.

Funds are denoted as eligible if they can effectively be used to cover the SCR or MCR.

Available and eligible own funds

in TEUR	2021	2020
Available own funds	16,783,730	14,557,545
Eligible own funds to meet SCR	16,783,730	14,557,545
Eligible own funds to meet MCR	15,052,618	13,486,158

E.1.3.1 Movement analysis of eligible own funds and solvency capital requirements

The movement analysis of Solvency II eligible own funds and SCR in the year under consideration is presented in the table below.

Eligible own funds and SCR movement analysis

in TEUR	Eligible own funds	SCR
Year end 2020	14,557,545	6,190,424
Model changes	70,766	-49,504
Operating Impact	856,368	693,524
Market variances	1,511,111	385,269
Taxes	-335,233	-315,559
Capital management	123,173	-
Year end 2021	16,783,730	6,904,154

Model changes include internal model changes approved by the regulator in the course of the model governance process. In addition, it includes model updates for the calculation of technical provisions or other items. The main impact for eligible own funds during the reporting period relates to the calculation of technical provisions for life and health business. A number of minor model changes, with each of them having a rather small impact, affected the SCR.

Operating impacts mainly comprise the investment result, unwind, new business value and the property and casualty run-off result as well as assumption changes. During the reporting period, the main drivers are the positive contribution from new business in life and health reinsurance, a favourable effect from actuarial assumption changes in property and casualty reinsurance as well as the investment income. For the SCR the effect from operating experiences mainly stems from an increased business volume.

Market variances comprise changes in eligible own funds and SCR due to changes of foreign exchange rates, interest rates, credit spreads and other financial market indicators. Exchange rate movements, especially the appreciation of the US dollar, and changes in credit spreads lead to an increase in eligible own funds with offsetting effects from unfavourable changes in interest rates. Furthermore, the increase includes the investment performance above target, in particular for private equity, inflation linked securities and real estate. The appreciation of foreign exchange rates as well as volume increases in private equity due to market variances are also the main drivers for the increase in SCR due to market variances.

All items are shown on a pre-tax basis, tax effects including tax payments and changes in deferred taxes are shown separately. The large SCR impact is mainly due to an increase in pre-tax SCR, which is driven by an increase in business volume.

Capital management comprises dividend payments and changes in foreseeable dividends. Moreover, the issuance of a new hybrid bond during the reporting period is included here.

E.1.3.2 Reconciliation IFRS to Solvency II basic own funds

Finally, we present the transition from IFRS shareholders' equity to Solvency II basic own funds.

Reconciliation of IFRS shareholders' equity to Solvency II own funds

in TEUR	2021	2020
Shareholders' equity IFRS incl. minority interests	12,756,231	11,839,420
Adjustments Solvency II to IFRS		
Adjustments of investments under own management	626,565	585,315
Adjustments of technical items (incl. risk margin)	3,364,692	2,398,422
Adjustments of other balance sheet items	-312,300	-434,552
Deferred tax	-1,279,200	-954,529
Economic shareholders' equity incl. minority interests	15,155,988	13,434,076
Foreseeable dividends	-721,600	-586,698
Subordinated liabilities	3,029,745	2,363,490
Available economic shareholders' equity incl. minority interests	17,464,133	15,210,868
Non available minority interests at Group level	-680,403	-653,322
Total amount of basic own funds after deductions	16,783,730	14,557,545

E.1.3.3 Ordinary share capital

The ordinary share capital (capital stock of Hannover Rück SE) stands at TEUR 120,597 as of the balance sheet date. The shares have been paid up in full. The capital stock is divided into 120,597,134 no-par value registered shares which carry both voting and dividend rights. Every share grants the same right to vote and same dividend entitlement. As at the balance sheet date no treasury shares were held by the company.

No new shares were issued in the reporting period.

The capital stock paid in and the corresponding issue premium in the capital reserve form the own funds bearing the highest degree of quality, which can be relied upon to equalise losses in the course of business operations.

E.1.3.4 Share premium account related to ordinary share capital

The issue premium in relation to the capital stock of Hannover Re Group stands at TEUR 880,608 as of the balance sheet date.

The share premium account is a separate item to which premiums, the amount between the value attained at the point in time of issuance and the value recorded in the capital stock, are transferred in accordance with national statutory provisions.

E.1.3.5 Reconciliation reserve

The reconciliation reserve pursuant to Solvency II represents an item of basic own funds attributable (in unlimited capacity) to category tier 1. It primarily comprises the excess of assets

over liabilities, adjusted by the subscribed capital, the capital reserve and shareholder dividend payouts.

At the balance sheet date, the reconciliation reserve was TEUR 13,294,683.

The reconciliation reserve represents reserves (in particular retained earnings) less value adjustments (e.g. ring-fenced funds); it does, moreover, contain the differences between the accounting valuation pursuant to IFRS and the valuation pursuant to the Directive 2009/138/EC.

E.1.3.6 Subordinated own funds

Hannover Re Group holds four subordinated bonds and one subordinated loan in its portfolio at the balance sheet date, which fulfil the criteria stipulated under Solvency II pertaining to subordinated liabilities, and which thus can be categorised under basic own funds.

Subordinated own funds

in TEUR	2021	2020
Subordinated debts (Tier 1 – restricted)	533,225	548,243
Subordinated debts (Tier 2)	2,496,520	1,815,247
Total	3,029,745	2,363,490

In the reporting period, a new subordinated bond was issued. The issue took place on 22 March 2021. The nominal value is TEUR 750,000 and the bond is classified as tier 2.

In addition, further subordinated liabilities with equity character exist as of the reporting date:

On 8 July 2020 raised a subordinated bond with a nominal value of TEUR 500,000 from capital markets. The bond issued is classified as tier 2.

On 9 October 2019 Hannover Rück raised a subordinated bond with a nominal value of TEUR 750,000 from capital markets. The bond issued is classified as tier 2.

On 15 September 2014 Hannover Rück raised a subordinated bond with a nominal value of TEUR 500,000 from capital markets. This debt is classified under Solvency II as “Grandfathered restricted tier 1” own funds for a transitional period of a maximum of 10 years.

Hannover Finance (Luxembourg) S.A. raised a subordinated loan with a nominal value of TEUR 500,000 from capital markets in 2012 and subsequently granted a loan to Hannover Rück. The loan is classified under Solvency II as (grandfathered) tier 2 own funds of Hannover Rück.

On the basis of their tiering classes, the value of the subordinated debt can be fully used to cover the Solvency Capital Requirement when applying the limit on eligible own funds in accordance with Article 82 Delegated Regulation 2015/35.

E.1.4 Transferability

Hannover Re Group actively manages its capital resources. Restraints in transferability arise due to minority interests in E+S Rück of TEUR 680,403. In the period under consideration, no further

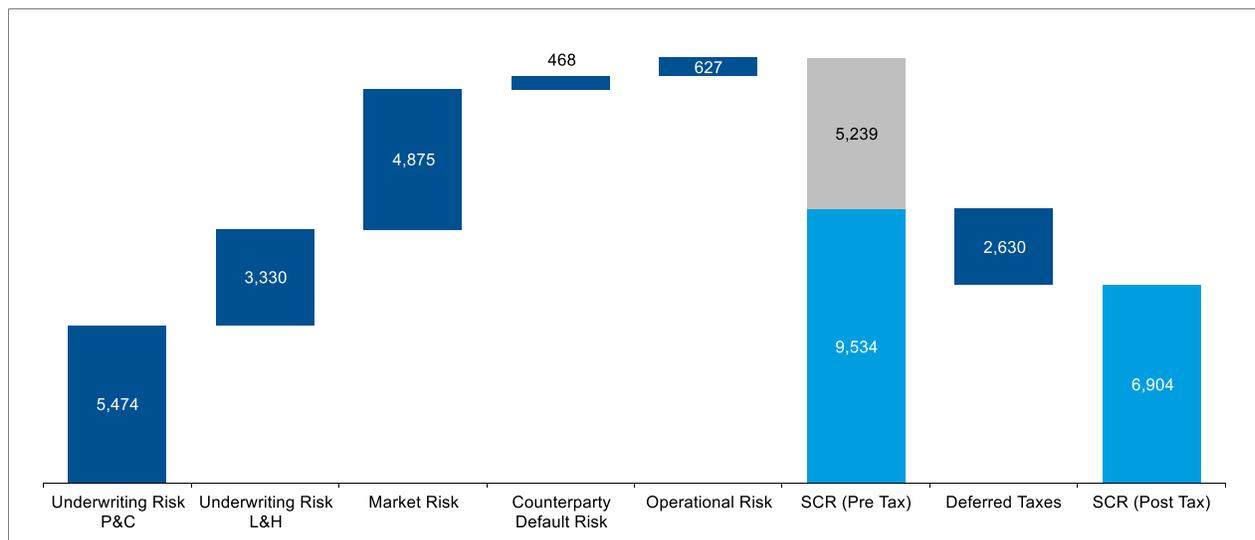
issues were identified that restrict the transferability of the capital for the covering of the solvency capital requirements.

E.2 Solvency Capital Requirement and Minimum Capital Requirement

E.2.1 Solvency Capital Requirement per Risk Category

This section deals with the Solvency Capital Requirement and its sources. The risk categories of the internal model of Hannover Re are defined in Section E.4.1.4. Capital requirements per risk category are shown in the following.

Solvency Capital Requirement – per risk category in EUR million



Solvency Capital Requirement (SCR) in TEUR

Solvency Capital Requirement	2021	2020
Underwriting risk - Property & Casualty	5,473,543	4,591,368
Underwriting risk - Life & Health	3,329,734	3,144,899
Market risk	4,874,756	4,395,687
Counterparty default risk	468,041	449,028
Operational risk	626,903	548,416
Diversification	-5,238,598	-4,624,308
Total risk (pre-tax)	9,534,379	8,505,090
Deferred tax	2,630,225	2,314,666
Total risk (post-tax)	6,904,154	6,190,424

The required capital has been calculated based on the approved internal model. Hannover Re applies the static volatility adjustment according to §82 of the Insurance Supervision Law VAG. This

is intended to mitigate the effect of temporary value fluctuations due to credit spread movements on the bond market. In order to capture this effect adequately for the calculation of the required capital Hannover Re uses the dynamic volatility in its internal model.

The model is subject to strict internal quality checks and extensive validation. Moreover, the continuous model supervision has not revealed any material limitations in the determination of capital requirements so far. In particular, there are no capital add-ons imposed by the regulator.

Overall, the required capital at the confidence level of 99.5% increased in the course of the year. This was principally driven by the larger business volumes, which have led to an increase in underwriting risks and market risks. The weaker euro against foreign currencies also contributed to this increase.

The underwriting risks in property and casualty reinsurance increased primarily as a consequence of higher premium and reserves. The enlarged volumes are driven by the business growth, the large loss expenditure and associated higher reserves as well as stronger foreign currencies.

The business expansion in the areas of longevity and morbidity risks as well as the appreciation of foreign currencies lead to an increase in underwriting risks in life and health reinsurance.

The increase in the market risk reflects first and foremost the larger volume due to higher market values and new investments in the areas of private equity and real estate. The increased volumes of fixed-income securities as a result of business growth are a further factor here.

A higher volume of receivables due from retrocessionaires was the main driver for the increase in counterparty default risks.

The changes in operational risk can be attributed to an increase in those scenarios which are driven by the overall business volume and thus increase as business grows.

The loss-absorbing effect of taxes and the diversification effect remained relatively stable.

For the calculation of the loss-absorbing capacity of deferred taxes, the build-up of deferred tax assets is restricted by the amount of net deferred tax liabilities according to the IFRS balance sheet as well as future tax liabilities stemming from future profits. The net deferred tax liabilities under IFRS basically stem from temporary valuation differences between the tax balance sheet and the IFRS balance sheet. Taxable future profits are derived from the planned IFRS net income for the next financial year and projected to a time horizon, which correspond to the average duration of liabilities.

The following table displays the Solvency Capital Requirement and the ratio of eligible own funds to SCR taking into account tiering restrictions.

Ratio of eligible own funds to Solvency Capital Requirement

in TEUR	2021	2020
Eligible own funds	16,783,730	14,557,545
SCR	6,904,154	6,190,424
Ratio of eligible own funds to SCR	243%	235%

E.2.2 Minimum Capital Requirement (MCR)

The following table displays the Minimum Capital Requirement and the ratio of eligible own funds to MCR taking into account tiering restrictions.

Ratio of eligible own funds to Minimum Capital Requirement

The group MCR is the result of the sum of the MCRs of the different legal entities.

in TEUR	2021	2020
Eligible own funds	15,052,618	13,487,957
MCR	4,519,540	4,081,776
Ratio of eligible own funds to MCR	333%	330%

E.3 Use of the duration-based equity risk sub-module in the calculation of the Solvency Capital Requirement

Germany did not make use of the option to allow the use of a duration-based equity risk sub-module.

Consequently, Hannover Re does not use a duration-based equity risk sub-module in the calculation of the Solvency Capital Requirement.

E.4 Differences between the standard formula and any internal model used

E.4.1 The internal model

Hannover Re received approval from the regulatory authorities to calculate its solvency requirements using a full internal capital model. This section provides information regarding the internal capital model.

E.4.1.1 Introduction

The quantitative risk management of Hannover Re provides a standardised framework for the assessment and management of all risks the undertaking is exposed to and of our capital position. In this context, the internal model is our key instrument. It is a stochastic enterprise model, covering all subsidiaries and business areas of Hannover Re.

The central key figure in risk and company management is the economic capital, which is evaluated according to market-consistent valuation principles and forms the basis for the calculation of the Solvency II capital.

The internal model of Hannover Re reflects all risks influencing the development of the economic capital. These risks are classified into underwriting, market, counterparty default and operational risks. For each of these risk categories, we have determined a series of risk factors for which we define a probability distribution. Risk factors are, as for instance, economic indicators, like interest

rates, exchange rates and inflation rates, as well as insurance-specific indicators such as the mortality rates in a specific age group of our insurance portfolio in a certain country, or the number of natural disasters in a certain region and the insured loss per disaster.

We use publicly accessible and historical data to specify the probability distributions of risk factors. In addition, we use industry specific and internal (re-)insurance data of Hannover Re. The judgement of internal and external experts supplements this process. The suitability of probability distributions is subject to regular review by our specialist departments and verified in conjunction with the regular, company-wide application of the capital model and allocation of costs of capital. Hannover Re calculates the required capital using the Value at Risk (VaR) reflecting the changes in economic value over a period of one year with a confidence level of 99.97%. This is equivalent to the target to limit the ruin probability over a horizon of one year to 0.03%. The internal target capitalisation of Hannover Re is significantly larger than that to a confidence level of 99.5% as required by Solvency II.

The internal capital model uses state-of-the-art techniques of insurance and financial mathematics. In case of underwriting risks, we draw on a comprehensive history of internal data to estimate probability distributions, e.g., for reserving risk. In the context of natural catastrophe risks, we use external models that we adjusted in the course of detailed internal reviews to represent our risk profile adequately. For Life and Health reinsurance we determine long-term cash flows for different scenarios. The determination of scenarios and probability distributions is based on internal data for all mentioned risks. The internal data base is enriched with parameters set by experts. These parameters are of importance in particular in the area of extreme events that have not been observed by now.

The aggregation of single risks takes into account dependencies between risk factors. Dependencies arise, e.g., during financial crises, which affect several market segments at the same time. Furthermore, market phenomena such as pricing cycles can cause dependencies over time. We generally assume that extreme events do not all occur simultaneously. The absence of complete dependency is denoted as diversification. Hannover Re's business model is based i.a. on establishing a preferably well-balanced portfolio such that a significant diversification effect is achieved and the capital can be used efficiently. Diversification effects exist between reinsurance contracts, divisions, business segments and risks. Given the costs of capital of our business segments, divisions and on the basis of their contribution to the diversification effect, we determine the costs of capital that have to be achieved per single business unit.

E.4.1.2 Basic principles

A key purpose of the capital model of Hannover Re relates to the calculation of the required and available capital for Hannover Re. The principles outlined below are the manifestation of Hannover Re's risk capacity and how it is consistently measured within a quantitative framework.

- Target variable: Our main target variable for the calculation of risk based capital is the deviation of the net asset value (or own funds) from its expected value.
- Time horizon: For calculating the required capital a one-year time horizon is considered.
- Risk measure: We use two statistics to measure and allocate risk capital, namely the Value-at-Risk (VaR) and the Expected Shortfall (ES).
- Ongoing business operations: We operate on the premise of existing business and a going-concern assumption.
- New business assumptions: We consider one year of new business. This assumption holds for all lines of business.

- Stochastic simulation: The capital model of Hannover Re is based on stochastic simulations, i.e. we generate discrete approximations for the probability distribution of our target variables.
- Capital fungibility: Hannover Re's capital model covers the risks stemming from several (legally independent) business units within the Group. We assume full capital fungibility. This is based on the assessment of stress tests for capital fungibility and transferability.
- Consolidation method: The capital model of Hannover Re comprises all business units by using the consolidation method. Deduction and aggregation as defined under Solvency II as an alternative method is not applied.

The capital model uses a stochastic simulation model for the purposes of implementing these principles, which combines random variables using the company-specific dependency structure.

E.4.1.3 Main applications

Hannover Re's internal capital model is a key component of the risk management system. It serves to analyse its overall risk position, to quantify risks and to determine the economic capital required to assume those risks.

The results of Hannover Re's internal model provide support to senior management in their decision-making. Main applications are:

- Analysis of the financial position
- Assessment of the overall required capital and monitoring of key risk metrics
- Capital consumption by each risk category
- Capital allocation for pricing and performance measurement
- Risk budgeting, limit allocation and monitoring
- Strategic asset allocation
- Assessment of risk mitigation strategies
- Assessment of new business

E.4.1.4 Scope of the model

Hannover Re's complete risk landscape comprises the main risk categories underwriting risks (life and non-life), market risks, counterparty default risks, operational risks and other risks (see Section "C. Risk Profile").

The risk categories addressed by the internal model of Hannover Re using a quantitative model are the categories underwriting risk life, underwriting risk non-life, market risk, counterparty default risk and operational risk. These risks and their interactions are accounted for in the presentation of target variables through the application of stochastic simulation models. Concentration risk is taken into account in the calculations of required capital for each risk category.

E.4.2 Calculation techniques for the purposes of integrating results into the standard formula

Hannover Re uses a full internal model. In consequence, there are no results of standard formula modules which have to be integrated in the internal model.

E.4.2.1 Type and suitability of data

Hannover Re has a comprehensive internal control system in place to ensure quality and timeliness of data. The specific data used in the internal model is documented in the data requirements for the different modules and interfaces. All data used in the internal model is subject to the data standards for the internal model. This set-up is appropriate to provide for timely data that is free of material errors.

Hannover Re utilises the relevant historical company data, in order to calibrate the model – above all for the underwriting risk. Generally speaking, company data relating to insurance performance within non-life is available for more than 30 years. This is deemed sufficiently historical information. However, due to the particular characteristics of early underwriting years, e.g. low premium volume, changing business segmentation or non-representative market segments, only portions of this data are used as part of the internal model calibration.

Internal company data, above all for the model validation, is used for underwriting risk pertaining to life and health insurance, due to the fact that only a limited number of significant (and thus rare) deviations are available that are suitable for the calibration of extreme events.

Long-term market data is used for the calibration of the market and counterparty risk model.

The operational risk model is based on information retrieved from a self-assessment process with experts from all relevant units and departments. Wherever possible available data and additional information are used. Given the limited history of operational risk events as well as the low frequency and high severity character of some operational risks, Hannover Re is convinced that input parameters for the SCR calculation cannot be solely derived by quantitative methods.

In general, Hannover Re relies on data that is used in other business applications, too, as often as appropriate to ensure consistent use of information within the company. Examples are the technical provisions which are calculated as part of the Solvency II balance sheet process and data items used in the accounting process under IFRS, thereby providing an anchor to other established reporting processes. Thus, many data items are subject to multiple quality checks and internal as well as external review.

E.4.3 Comparison between the internal model and the standard formula

The standard formula is designed to fit a typical European (or EEA) primary insurer. As a consequence, mainly European data has been used to calibrate the standard formula.

There are many aspects which make Hannover Re quite different from a typical European primary insurer, in particular, its access to global diversification across regions, markets, cedants and all lines of business. The difference in diversification is the driving force of differences between the

standard formula and the internal model for life, health and non-life underwriting risk. It also has some influence on counterparty and market risk.

A further difference is caused by the fact that Hannover Re has received approval for a dynamic modelling of the volatility adjustment from BaFin for year-end 2019. By this, the effect of the volatility adjustment is captured in the calculation of the required capital more adequately compared to the standard formula.

The standard formula offers a detailed module for the quantification of EU natural catastrophe risk. Due to its focus it does offer a very broad, premium-based approximation for non-EU and non-proportional natural catastrophe risk, only. Hannover Re assumes more than 70% of its natural catastrophe risk outside the EU and thus has a detailed internal model for such risks.

The standard formula is designed for a single primary insurer and thus has no module to recognise diversification between different primary insurers. The latter is an important feature of Hannover Re's internal model and founded on Hannover Re's internal data analysis.

The standard formula allows for appropriate recognition of some but not all reinsurance structures. For example multi-line covers are not fully effective. The internal model is able to recognise all retrocession structures currently implemented by Hannover Re.

In contrast to the standard formula, Hannover Re's internal model has capital requirements for all government bonds.

Technically, the internal model is a stochastic approach while the standard formula is a factor-based (deterministic) approach. The concept for underlying risk factors is in many areas similar, e.g. for market and counterparty risk but in general more detailed in Hannover Re's internal model. Hannover Re's internal model allows for bottom-up, non-linear dependency structures within and between market, underwriting, operational and counterparty risk.

E.5 Non-compliance with the Minimum Capital Requirement and non-compliance with the Solvency Capital Requirement

Both solvency and minimum capital requirements – with and without application of the volatility adjustment - were complied with at all times during the period under consideration.

Abbreviations and glossary

AF: Actuarial function

BaFin: Bundesanstalt für Finanzdienstleistungsaufsicht, Federal Financial Supervisory Authority

BEL: Best Estimate Liability

BOF: Basic own funds

CDS: Credit Default Swap

CEO: Chief Executive Officer

CFO: Chief Financial Officer

CMS: Compliance Management System

EBIT: Earnings before interest and taxes

EEA: European Economic Area

EIOPA: European Insurance and Occupational Pensions Authority

ESG: Environment Social Governance

E+S Rück: E+S Rückversicherung AG, Hannover

FAS: Financial Accounting Standard

FWH: Funds withheld

GA: Group Auditing, internal audit of Hannover Re Group

GLS: Group Legal Services, legal division of the Hannover Re Group

Hannover Re: Hannover Re Group, Hannover

Hannover Rück: Hannover Rück SE, Hannover

HDI: HDI Haftpflichtverband der Deutschen Industrie V.a.G., Hannover

HGB: Handelsgesetzbuch, German Commercial Code

IAS: International Accounting Standard

ICS: Internal Control System

IFRS: International Financial Reporting Standards

Inter Hannover: International Insurance Company of Hannover SE, Hannover, since 1 January 2019: HDI Global Specialty SE, Hannover

L&H: Life and Health

MCR: Minimum Capital Requirement

NGO: Non-Governmental Organisation

ORSA: Own Risk and Solvency Assessment

P&C: Property and Casualty

QRT: Quantitative Reporting Template

RM: Risk margin

RMF: Risk Management Function

SCR: Solvency Capital Requirement

SII: Solvency II

TP: Technical provisions

US GAAP: United States Generally Accepted Accounting Principles

VAG: Gesetz über die Beaufsichtigung der Versicherungsunternehmen (Versicherungsaufsichtsgesetz), Insurance Supervision Act

VaR: Value-at-Risk

Quantitative Reporting Templates

All values are shown in TEUR if not otherwise stated.

Values below TEUR 0.5 are displayed as "0". Empty cells represent the fact that Hannover Re has no value to state.

Please note that this report represents a voluntary publication of the Hannover Re Group. Hence, we provide information we think are most informative for our stakeholders.

Additional disclosure according to Art. 192 (2) of the Delegated Regulation 2015/35

The Hannover Re Group has collateral arrangements with a total value well below 60% of total assets. The threshold of 60% is defined in Art. 192 (2) of the Delegated Regulation 2015/35. This information is relevant to calculate the counterparty default risk with respect to the Hannover Re Group in the Solvency II standard formula.

S.02.01.02: Balance sheet

S.02.01.02: Balance sheet, page 1		Solvency II
Assets		C0010
Intangible assets	R0030	
Deferred tax assets	R0040	368,823
Pension benefit surplus	R0050	
Property, plant & equipment held for own use	R0060	178,975
Investments (other than assets held for index-linked and unit-linked contracts)	R0070	54,608,532
Property (other than for own use)	R0080	2,308,643
Holdings in related undertakings, including participations	R0090	573,240
Equities	R0100	175
Equities - listed	R0110	
Equities - unlisted	R0120	175
Bonds	R0130	45,492,915
Government Bonds	R0140	24,096,610
Corporate Bonds	R0150	19,928,724
Structured notes	R0160	77,518
Collateralised securities	R0170	1,390,064
Collective Investments Undertakings	R0180	4,970,074
Derivatives	R0190	18,537
Deposits other than cash equivalents	R0200	1,176,304
Other investments	R0210	68,643
Assets held for index-linked and unit-linked contracts	R0220	
Loans and mortgages	R0230	360,660
Loans on policies	R0240	
Loans and mortgages to individuals	R0250	2,619
Other loans and mortgages	R0260	358,041
Reinsurance recoverables from:	R0270	1,838,510
Non-life and health similar to non-life	R0280	1,881,853
Non-life excluding health	R0290	1,864,475
Health similar to non-life	R0300	17,379
Life and health similar to life, excluding health and index-linked and unit-linked	R0310	-77,673
Health similar to life	R0320	248,696
Life excluding health and index-linked and unit-linked	R0330	-326,370
Life index-linked and unit-linked	R0340	34,330
Deposits to cedants	R0350	11,337,121
Insurance and intermediaries receivables	R0360	1,358,360
Reinsurance receivables	R0370	259,645
Receivables (trade, not insurance)	R0380	482,781
Own shares (held directly)	R0390	
Amounts due in respect of own fund items or initial fund called up but not yet paid in	R0400	
Cash and cash equivalents	R0410	1,355,071
Any other assets, not elsewhere shown	R0420	171,898
Total assets	R0500	72,320,375

S.02.01.02: Balance sheet, page 2		Solvency II
Liabilities		C0010
Technical provisions – non-life	R0510	33,958,469
Technical provisions – non-life (excluding health)	R0520	31,696,120
Technical provisions calculated as a whole	R0530	
Best Estimate	R0540	30,968,148
Risk margin	R0550	727,972
Technical provisions - health (similar to non-life)	R0560	2,262,349
Technical provisions calculated as a whole	R0570	
Best Estimate	R0580	2,153,929
Risk margin	R0590	108,420
Technical provisions - life (excluding index-linked and unit-linked)	R0600	11,139,989
Technical provisions - health (similar to life)	R0610	3,978,950
Technical provisions calculated as a whole	R0620	
Best Estimate	R0630	3,362,661
Risk margin	R0640	616,289
Technical provisions – life (excluding health and index-linked and unit-linked)	R0650	7,161,040
Technical provisions calculated as a whole	R0660	
Best Estimate	R0670	4,544,196
Risk margin	R0680	2,616,844
Technical provisions – index-linked and unit-linked	R0690	1,152,908
Technical provisions calculated as a whole	R0700	
Best Estimate	R0710	1,140,470
Risk margin	R0720	12,438
Contingent liabilities	R0740	
Provisions other than technical provisions	R0750	182,623
Pension benefit obligations	R0760	208,750
Deposits from reinsurers	R0770	595,968
Deferred tax liabilities	R0780	3,808,053
Derivatives	R0790	52,438
Debts owed to credit institutions	R0800	540,940
Financial liabilities other than debts owed to credit institutions	R0810	966,178
Insurance & intermediaries payables	R0820	927,282
Reinsurance payables	R0830	141,727
Payables (trade, not insurance)	R0840	233,562
Subordinated liabilities	R0850	3,029,745
Subordinated liabilities not in Basic Own Funds	R0860	0
Subordinated liabilities in Basic Own Funds	R0870	3,029,745
Any other liabilities, not elsewhere shown	R0880	225,753
Total liabilities	R0900	57,164,387
Excess of assets over liabilities	R1000	15,155,988

S.12.01.02: Life and Health SLT Technical Provisions

TP Life, page 1

		Insurance with profit participation	Index-linked and unit-linked insurance	Contracts without options and guarantees	Contracts with options or guarantees
		C0020	C0030	C0040	C0050
Technical provisions calculated as a whole	R0010				
Total Recoverables from reinsurance/SPV and Finite Re after the adjustment for expected losses due to counterparty default associated to TP calculated as a whole	R0020				
Technical provisions calculated as a sum of BE and RM					
Best Estimate					
Gross Best Estimate	R0030				
Total Recoverables from reinsurance/SPV and Finite Re after the adjustment for expected losses due to counterparty default	R0080				
Best estimate minus recoverables from reinsurance/SPV and Finite Re - total	R0090				
Risk Margin	R0100				
Amount of the transitional on Technical Provisions					
Technical Provisions calculated as a whole	R0110				
Best estimate	R0120				
Risk margin	R0130				
Technical provisions - total	R0200				

	Other life insurance		
	C0060	Contracts without options and guarantees C0070	Contracts with options or guarantees C0080
Technical provisions calculated as a whole	R0010		
Total Recoverables from reinsurance/SPV and Finite Re after the adjustment for expected losses due to counterparty default associated to TP calculated as a whole	R0020		
Technical provisions calculated as a sum of BE and RM			
Best Estimate			
Gross Best Estimate	R0030		
Total Recoverables from reinsurance/SPV and Finite Re after the adjustment for expected losses due to counterparty default	R0080		
Best estimate minus recoverables from reinsurance/SPV and Finite Re - total	R0090		
Risk Margin	R0100		
Amount of the transitional on Technical Provisions			
Technical Provisions calculated as a whole	R0110		
Best estimate	R0120		
Risk margin	R0130		
Technical provisions - total	R0200		

		Annuities stemming from non-life insurance contracts and relating to insurance obligation other than health insurance obligations	Accepted reinsurance	Total (Life other than health insurance, incl. Unit-Linked)
		C0090	C0100	C0150
Technical provisions calculated as a whole	R0010			
Total Recoverables from reinsurance/SPV and Finite Re after the adjustment for expected losses due to counterparty default associated to TP calculated as a whole	R0020			
Technical provisions calculated as a sum of BE and RM				
Best Estimate				
Gross Best Estimate	R0030		5,684,666	5,684,666
Total Recoverables from reinsurance/SPV and Finite Re after the adjustment for expected losses due to counterparty default	R0080		-292,040	-292,040
Best estimate minus recoverables from reinsurance/SPV and Finite Re - total	R0090		5,976,706	5,976,706
Risk Margin	R0100		2,629,282	2,629,282
Amount of the transitional on Technical Provisions				
Technical Provisions calculated as a whole	R0110			
Best estimate	R0120			
Risk margin	R0130			
Technical provisions - total	R0200		8,313,948	8,313,948

TP Life, page 4

	Health insurance (direct business)		
	C0160	Contracts without options and guarantees C0170	Contracts with options or guarantees C0180
Technical provisions calculated as a whole	R0010		
Total Recoverables from reinsurance/SPV and Finite Re after the adjustment for expected losses due to counterparty default associated to TP calculated as a whole	R0020		
Technical provisions calculated as a sum of BE and RM			
Best Estimate			
Gross Best Estimate	R0030		
Total Recoverables from reinsurance/SPV and Finite Re after the adjustment for expected losses due to counterparty default	R0080		
Best estimate minus recoverables from reinsurance/SPV and Finite Re - total	R0090		
Risk Margin	R0100		
Amount of the transitional on Technical Provisions			
Technical Provisions calculated as a whole	R0110		
Best estimate	R0120		
Risk margin	R0130		
Technical provisions - total	R0200		

	Annuities stemming from non-life insurance contracts and relating to health insurance obligations	Health reinsurance (reinsurance accepted)	Total (Health similar to life insurance)
	C0190	C0200	C0210
Technical provisions calculated as a whole	R0010		
Total Recoverables from reinsurance/SPV and Finite Re after the adjustment for expected losses due to counterparty default associated to TP calculated as a whole	R0020		
Technical provisions calculated as a sum of BE and RM			
Best Estimate			
Gross Best Estimate	R0030		
Total Recoverables from reinsurance/SPV and Finite Re after the adjustment for expected losses due to counterparty default	R0080	3,362,661	3,362,661
Best estimate minus recoverables from reinsurance/SPV and Finite Re - total	R0090	248,696	248,696
Risk Margin	R0100	3,113,965	3,113,965
Amount of the transitional on Technical Provisions	R0100	616,289	616,289
Technical Provisions calculated as a whole	R0110		
Best estimate	R0120		
Risk margin	R0130		
Technical provisions - total	R0200	3,978,950	3,978,950

S.17.01.02: Non-life Technical Provisions

S.17.01.02: TP Non-Life,
page 1

		Direct business and accepted proportional reinsurance								
		Medical expense insurance C0020	Income protection insurance C0030	Workers' compen- sation insurance C0040	Motor vehicle liability insurance C0050	Other motor insurance C0060	Marine, aviation and transport insurance C0070	Fire and other damage to property insurance C0080	General liability insurance C0090	Credit and suretyship insurance C0100
Technical provisions calculated as a whole	R0010									
Total Recoverables from reinsurance / SPV and Finite Re after the adjustment for expected losses due to counterparty default associated to TP as a whole	R0050									
Technical provisions calculated as a sum of BE and RM										
Best estimate										
Premium provisions										
Gross	R0060	18,820	114,363	8,471	399,176	164,754	192,006	1,548,674	651,879	318,673
Total recoverable from reinsurance / SPV and Finite Re after the adjustment for expected losses due to counterparty default	R0140	0	5	0	-28	820	7,365	61,270	119	-969
Net Best Estimate of Premium Provisions	R0150	18,821	114,359	8,471	399,203	163,934	184,641	1,487,403	651,760	319,642
Claims provisions										
Gross	R0160	28,758	319,374	186,043	2,096,844	922,970	758,109	4,260,684	3,539,783	1,152,577
Total recoverable from reinsurance / SPV and Finite Re after the adjustment for expected losses due to counterparty default	R0240	-10	67	9,896	16,874	18,729	265,257	431,656	45,058	-142
Net Best Estimate of Claims Provisions	R0250	28,768	319,306	176,147	2,079,970	904,241	492,852	3,829,028	3,494,725	1,152,719
Total Best estimate - gross	R0260	47,578	433,737	194,514	2,496,019	1,087,725	950,115	5,809,358	4,191,662	1,471,250
Total Best estimate - net	R0270	47,589	433,665	184,618	2,479,173	1,068,175	677,493	5,316,431	4,146,485	1,472,362
Risk margin	R0280	1,556	20,192	16,577	32,794	26,058	22,062	135,924	116,027	41,636

S.17.01.02: TP Non-Life,
page 2

		Direct business and accepted proportional reinsurance								
		Medical expense insurance	Income protection insurance	Workers' compen- sation insurance	Motor vehicle liability insurance	Other motor insurance	Marine, aviation and transport insurance	Fire and other damage to property insurance	General liability insurance	Credit and suretyship insurance
		C0020	C0030	C0040	C0050	C0060	C0070	C0080	C0090	C0100
Amount of the transitional on Technical Provisions										
Technical Provisions calculated as a whole	R0290									
Best estimate	R0300									
Risk margin	R0310									
Technical provisions - total										
Technical provisions - total	R0320	49,134	453,929	211,091	2,528,814	1,113,783	972,177	5,945,282	4,307,689	1,512,886
Recoverable from reinsurance contract / SPV and Finite Re after the adjustment for expected losses due to counterparty default - total	R0330	-10	72	9,896	16,846	19,550	272,622	492,927	45,177	-1,112
Technical provisions minus recoverables from reinsurance / SPV and Finite Re - total	R0340	49,144	453,857	201,194	2,511,968	1,094,233	699,555	5,452,355	4,262,512	1,513,998

S.17.01.02: TP Non-Life,
page 3

		Direct business and accepted proportional reinsurance			Accepted non-proportional reinsurance				Total Non-Life obligation
		Legal expenses insurance C0110	Assistance C0120	Miscellaneous financial loss C0130	Non-proportional health reinsurance C0140	Non-proportional casualty reinsurance C0150	Non-proportional marine, aviation and transport reinsurance C0160	Non-proportional property reinsurance C0170	
Technical provisions calculated as a whole	R0010								
Total Recoverables from reinsurance / SPV and Finite Re after the adjustment for expected losses due to counterparty default associated to TP as a whole	R0050								
Technical provisions calculated as a sum of BE and RM									
Best estimate									
Premium provisions									
Gross	R0060	22,211	-18,447	52,074	68,407	646,767	49,665	644,151	4,881,645
Total recoverable from reinsurance / SPV and Finite Re after the adjustment for expected losses due to counterparty default	R0140			46	-217	1,427	-1,201	26,033	94,669
Net Best Estimate of Premium Provisions	R0150	22,211	-18,447	52,029	68,625	645,340	50,866	618,118	4,786,977
Claims provisions									
Gross	R0160	59,552	-9,827	252,902	1,409,692	7,796,790	836,238	4,629,942	28,240,431
Total recoverable from reinsurance / SPV and Finite Re after the adjustment for expected losses due to counterparty default	R0240			15,750	7,638	9,406	148,473	818,532	1,787,184
Net Best Estimate of Claims Provisions	R0250	59,552	-9,827	237,152	1,402,054	7,787,384	687,766	3,811,410	26,453,247
Total Best Estimate - gross	R0260	81,764	-28,273	304,976	1,478,099	8,443,557	885,903	5,274,093	33,122,077
Total Best Estimate - net	R0270	81,764	-28,273	289,180	1,470,678	8,432,724	738,632	4,429,528	31,240,223
Risk margin	R0280	1,661	35	4,961	70,096	248,277	19,238	79,297	836,392

S.17.01.02: TP Non-Life,
page 4

		Direct business and accepted proportional reinsurance			Accepted non-proportional reinsurance			Total Non-Life obligation	
		Legal expenses insurance C0110	Assistance C0120	Miscellaneous financial loss C0130	Non-proportional health reinsurance C0140	Non-proportional casualty reinsurance C0150	Non-proportional marine, aviation and transport reinsurance C0160		Non-proportional property reinsurance C0170
Amount of the transitional on Technical Provisions									
Technical Provisions calculated as a whole	R0290								
Best Estimate	R0300								
Risk margin	R0310								
Technical provisions - total									
Technical provisions - total	R0320	83,425	-28,238	309,937	1,548,195	8,691,834	905,142	5,353,390	33,958,469
Recoverable from reinsurance contract / SPV and Finite Re after the adjustment for expected losses due to counterparty default - total	R0330			15,796	7,421	10,832	147,271	844,565	1,881,853
Technical provisions minus recoverables from reinsurance / SPV and Finite Re - total	R0340	83,425	-28,238	294,141	1,540,774	8,681,002	757,870	4,508,825	32,076,616

S.22.01.22: Impact of long term guarantees measures and transitionals

S.22.01.22: Impact of long term guarantees measures and transitionals

		Amount with Long Term Guarantee measures and transitionals	Impact of transitional on technical provisions	Impact of transitional on interest rate	Impact of volatility adjustment set to zero	Impact of matching adjustment set to zero
		C0010	C0030	C0050	C0070	C0090
Technical provisions	R0010	46,251,366			316,945	
Basic own funds	R0020	16,783,730			-169,984	
Eligible own funds to meet Solvency Capital Requirement	R0050	16,783,730			-169,984	
Solvency Capital Requirement	R0090	6,904,154			232,530	

S.23.01.22: Own Funds

S.23.01.22: Own funds, page 1

		Total	Tier 1 - unrestricted	Tier 1 - restricted	Tier 2	Tier 3
		C0010	C0020	C0030	C0040	C0050
Basic own funds before deduction for participations in other financial sector as foreseen in article 68 of Delegated Regulation (EU) 2015/35						
Ordinary share capital (gross of own shares)	R0010	120,597	120,597			
Non-available called but not paid in ordinary share capital at group level	R0020					
Share premium account related to ordinary share capital	R0030	880,608	880,608			
Initial funds, members' contributions or the equivalent basic own - fund item for mutual and mutual-type undertakings	R0040					
Subordinated mutual member accounts	R0050					
Non-available subordinated mutual member accounts at group level	R0060					
Surplus funds	R0070					
Non-available surplus funds at group level	R0080					
Preference shares	R0090					
Non-available preference shares at group level	R0100					
Share premium account related to preference shares	R0110					
Non-available share premium account related to preference shares at group level	R0120					
Reconciliation reserve	R0130	13,294,683	13,294,683			
Subordinated liabilities	R0140	3,029,745		533,225	2,496,520	
Non-available subordinated liabilities at group level	R0150					
An amount equal to the value of net deferred tax assets	R0160	138,500				138,500
The amount equal to the value of net deferred tax assets not available at the group level	R0170					
Other own fund items approved by the supervisory authority as basic own funds not specified above	R0180					
Non available own funds related to other own funds items approved by supervisory authority	R0190					
Minority interests (if not reported as part of a specific own fund item)	R0200					
Non-available minority interests at group level	R0210	680,403	680,403			

S.23.01.22: Own funds, page 2

		Total	Tier 1 - unrestricted	Tier 1 - restricted	Tier 2	Tier 3
		C0010	C0020	C0030	C0040	C0050
Own funds from the financial statements that should not be represented by the reconciliation reserve and do not meet the criteria to be classified as Solvency II own funds						
Own funds from the financial statements that shall not be represented by the reconciliation reserve and do not meet the criteria to be classified as Solvency II own funds	R0220					
Deductions						
Deductions for participations in financial and credit institutions	R0230					
whereof deducted according to art 228 of the Directive 2009/138/EC	R0240					
Deductions for participations where there is non-availability of information (Article 229)	R0250					
Deduction for participations included by using D&A when a combination of methods is used	R0260					
Total of non-available own fund items	R0270	680,403	680,403			
Total deductions	R0280	680,403	680,403			
Total basic own funds after deductions	R0290	16,783,730	13,615,484	533,225	2,496,520	138,500
Ancillary own funds						
Unpaid and uncalled ordinary share capital callable on demand	R0300					
Unpaid and uncalled initial funds, members' contributions or the equivalent basic own fund item for mutual and mutual - type undertakings, callable on demand	R0310					
Unpaid and uncalled preference shares callable on demand	R0320					
A legally binding commitment to subscribe and pay for subordinated liabilities on demand	R0330					
Letters of credit and guarantees under Article 96(2) of the Directive 2009/138/EC	R0340					
Letters of credit and guarantees other than under Article 96(2) of the Directive 2009/138/EC	R0350					
Supplementary members calls under first subparagraph of Article 96(3) of the Directive 2009/138/EC	R0360					
Supplementary members calls - other than under first subparagraph of Article 96(3) of the Directive 2009/138/EC	R0370					
Non available ancillary own funds at group level	R0380					
Other ancillary own funds	R0390					
Total ancillary own funds	R0400					

S.23.01.22: Own funds, page 3

		Total	Tier 1 - unrestricted	Tier 1 - restricted	Tier 2	Tier 3
		C0010	C0020	C0030	C0040	C0050
Own funds of other financial sectors						
Credit Institutions, investment firms, financial institutions, alternative investment fund manager, financial institutions	R0410					
Institutions for occupational retirement provision	R0420					
Non regulated entities carrying out financial activities	R0430					
Total own funds of other financial sectors	R0440					
Own funds when using the D&A, exclusively or in combination of method 1						
Own funds aggregated when using the D&A and combination of method	R0450					
Own funds aggregated when using the D&A and combination of method net of IGT	R0460					
Total available own funds to meet the consolidated group SCR (excluding own funds from other financial sector and from the undertakings included via D&A)	R0520	16,783,730	13,615,484	533,225	2,496,520	138,500
Total available own funds to meet the minimum consolidated group SCR	R0530	16,645,230	13,615,484	533,225	2,496,520	
Total eligible own funds to meet the consolidated group SCR (excluding own funds from other financial sector and from the undertakings included via D&A)	R0560	16,783,730	13,615,484	533,225	2,496,520	138,500
Total eligible own funds to meet the minimum consolidated group SCR	R0570	15,052,618	13,615,484	533,225	903,908	
Minimum consolidated Group SCR	R0610	4,519,540				
Ratio of Eligible own funds to Minimum Consolidated Group SCR	R0650	3.3306				
Total eligible own funds to meet the group SCR (including own funds from other financial sector and from the undertakings included via D&A)	R0660	16,783,730	13,615,484	533,225	2,496,520	138,500
Group SCR	R0680	6,904,154				
Ratio of Eligible own funds to group SCR including other financial sectors and the undertakings included via D&A	R0690	2.4310				

S.23.01.22: Own funds, page 4 / Reconciliation reserve

		C0060
Reconciliation reserve		
Excess of assets over liabilities	R0700	15,155,988
Own shares (held directly and indirectly)	R0710	
Foreseeable dividends, distributions and charges	R0720	721,600
Other basic own fund items	R0730	1,139,705
Adjustment for restricted own fund items in respect of matching adjustment portfolios and ring fenced funds	R0740	
Other non available own funds	R0750	
Reconciliation reserve	R0760	13,294,683
Expected profits		
Expected profits included in future premiums (EPIFP) - Life business	R0770	4,807,692
Expected profits included in future premiums (EPIFP) - Non- life business	R0780	
Total EPIFP	R0790	4,807,692

S.25.03.22: Solvency Capital Requirement – for Groups on Full Internal Models

Unique number of component	Components description	Calculation of the Solvency Capital Requirement
C0010	C0020	C0030
101	Market risk according to IM	4,874,756
102	Counterparty default risk according to IM	468,041
103	Life underwriting risk according to IM	3,329,734
104	Non-life underwriting risk according to IM	5,473,543
105	Operational risk according to IM	626,903
107	LAC TP according to IM	
108	LAC DT according to IM	-2,630,225

Calculation of Solvency Capital Requirement		C0100
Total undiversified components	R0110	12,142,752
Diversification	R0060	-5,238,598
Capital requirement for business operated in accordance with Art. 4 of Directive 2003/41/EC	R0160	
Solvency capital requirement excluding capital add-on	R0200	6,904,154
Capital add-ons already set	R0210	
Solvency capital requirement	R0220	6,904,154
Other information on SCR		
Amount/estimate of the overall loss-absorbing capacity of technical provisions	R0300	
Amount/estimate of the overall loss-absorbing capacity of deferred taxes	R0310	-2,630,225
Total amount of Notional Solvency Capital Requirements for remaining part	R0410	
Total amount of Notional Solvency Capital Requirements for ring fenced funds	R0420	
Total amount of Notional Solvency Capital Requirement for matching adjustment portfolios	R0430	
Diversification effects due to RFF nSCR aggregation for article 304	R0440	
Minimum consolidated group solvency capital requirement	R0470	4,519,540
Information on other entities		
Capital requirement for other financial sectors (Non-insurance capital requirements)	R0500	
Capital requirement for other financial sectors (Non-insurance capital requirements) — Credit institutions, investment firms and financial institutions, alternative investment funds managers, UCITS management companies	R0510	
Capital requirement for other financial sectors (Non-insurance capital requirements) — Institutions for occupational retirement provisions	R0520	
Capital requirement for other financial sectors (Non-insurance capital requirements) — Capital requirement for non-regulated entities carrying out financial activities	R0530	
Capital requirement for non-controlled participation requirements	R0540	
Capital requirement for residual undertakings	R0550	

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Hannover Rück SE

Karl-Wiechert-Allee 50

30625 Hannover

Germany

www.hannover-re.com