25th International Investors' Day

London, 6 October 2022

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Ensuring future-readiness

Jean-Jacques Henchoz, Chief Executive Officer
25th International Investors' Day 2022
London, 6 October 2022

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Agenda

1
Performance update

2
Investing in future-readiness

3
Key takeaways

1 Performance update

somewhat different

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Four pillars of our equity story

A	B	C	D
Focus on profitable growth	Underwriting DNA	Lean operating model	Leading capital returns




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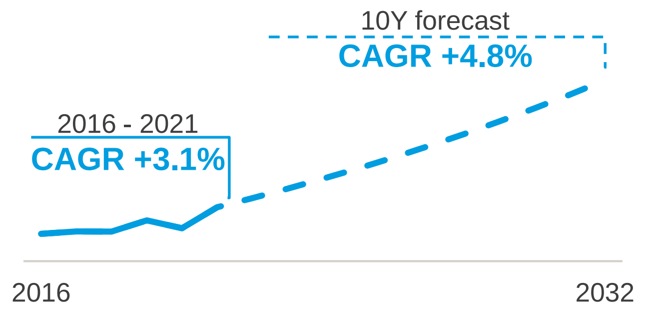
Growing in an improving pricing cycle
Reinsurance demand is supported by long-term trends

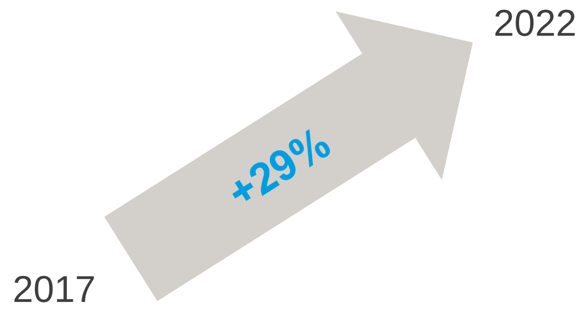
Long-term growth drivers

- Climate change and protection gaps
- Demographic change and insurance penetration
- Technology change
- Growth in emerging markets
- Increasing values and urbanisation

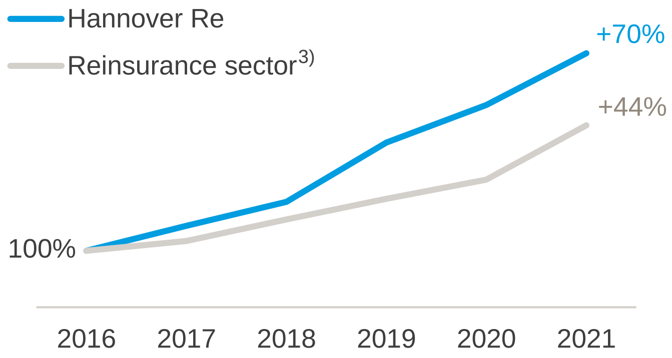
Global insurance premium[1)]



Guy Carpenter cat RoL index[2)]



Gross written premium



1) Source: Allianz Global Insurance Map
2) Guy Carpenter Global Property Catastrophe ROL index
3) Sector: AON Reinsurance Aggregate

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Our ability to grow is based on our strong underwriting DNA

Excellent market position as a responsive and well capitalised partner

Innovative solutions

- Leading player in Structured Reinsurance and ILS
- Financial Solutions and Longevity as key L&H differentiators

Efficient business model

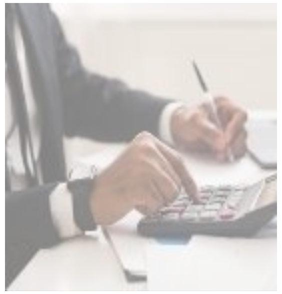
- Focused pure-play reinsurer
- Scalability and focus on organic growth

Empowered people

- Customer excellence based on experienced and empowered underwriting teams
- Reliable long-term partner

Superior financial strength

- Solvency ratio of 235% (Q2/2022)
- S&P AA-, stable
- A.M. Best A+, stable



Profitability driven by lean operating model and capital agility
Strong operating cash flow from underwriting and investments

Lean operating model

- Focus on organisational simplicity
- Strong cost culture
- Speed of decision-making
- Preferred broker market

Capital agility

- Capital allocated according to attractiveness of business segments
- Efficient volatility management / retrocession
- Value creation balanced between dividends and organic growth

Operating cash flow
EUR 27 bn.
(total 2012-1H/2022)

Assets under Management
EUR 56 bn.
+6.4%
(10Y CAGR)

Earnings growth

Group net income
EUR 649 m.
+6.7%
(10Y CAGR)

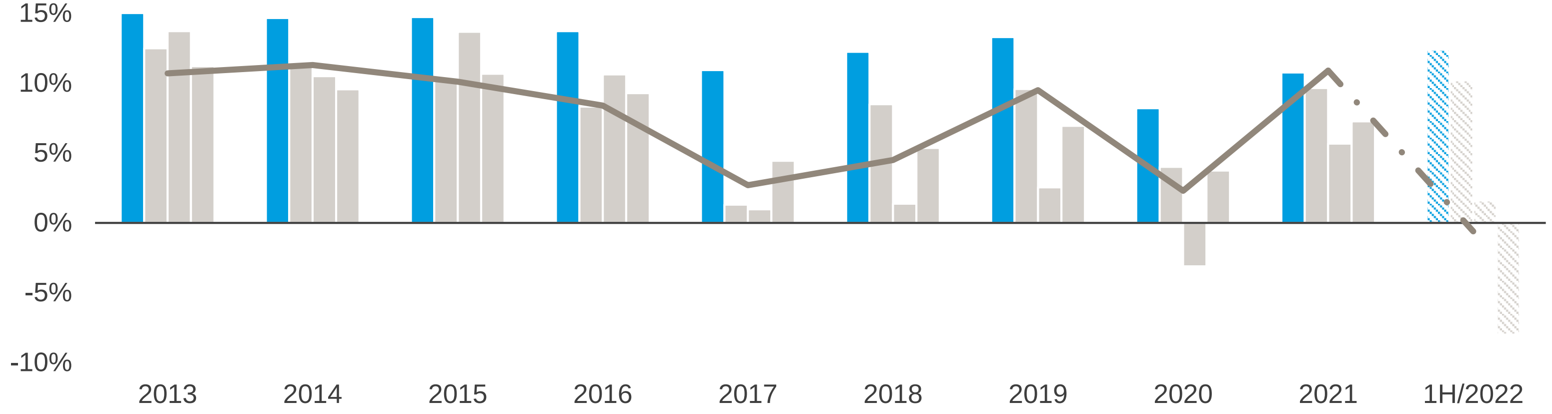
Net investment income
EUR 980 m.
+5.5%
(10Y CAGR)

Figures as at 1H/2022 (except AuM as at Q2/2022)

Strong and resilient earnings profile

Our return on capital has been consistently above benchmarks

Return on Equity[1)]



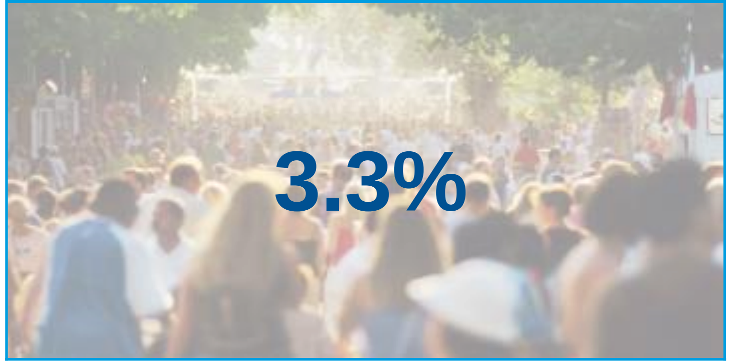
Average RoE	10Y	5Y
Hannover Re	12.6 %	11.4 %
Peer 1	8.6 %	8.4 %
Peer 2	5.8 %	1.6 %
Peer 3	6.1 %	3.1 %
Sector average [2)]	6.8 %	5.0 %

10-year average excess return on capital allocated (xRoCa)

P&C reinsurance

6.0%

L&H reinsurance



3.3%

Investments

7.9%

1) Peers: Munich Re, Scor, Swiss Re, RoE; own calculation based on company reports
2) Sector Average Source: AON Reinsurance Aggregate

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Risk management supports our long-term performance
Strong resilience driven by prudence and active steering

C/R below 100%
in 9 out of 10 years

EUR 132 m.
Relief from extreme mortality cover (2021 + 1H/2022)

EUR 1.7 bn.
reserve redundancies[1)]

~EUR 400 m.
EBIT contribution from inflation-linked bonds (2021 + 1H/2022)

Large losses from natural catastrophes

1.5% below budget
(10Y average)

0.2% above budget
(5Y average)

Retrocession
- P&C retrocession protection core to strategy
- L&H extreme mortality cover bought since 2013

Reserving
- Prudent reserving provides additional comfort
- Reserving approach reduces volatility

Hedging
- Inflation protection bought since 2010
- Strict Asset-Liability Matching (interest rates & currencies)

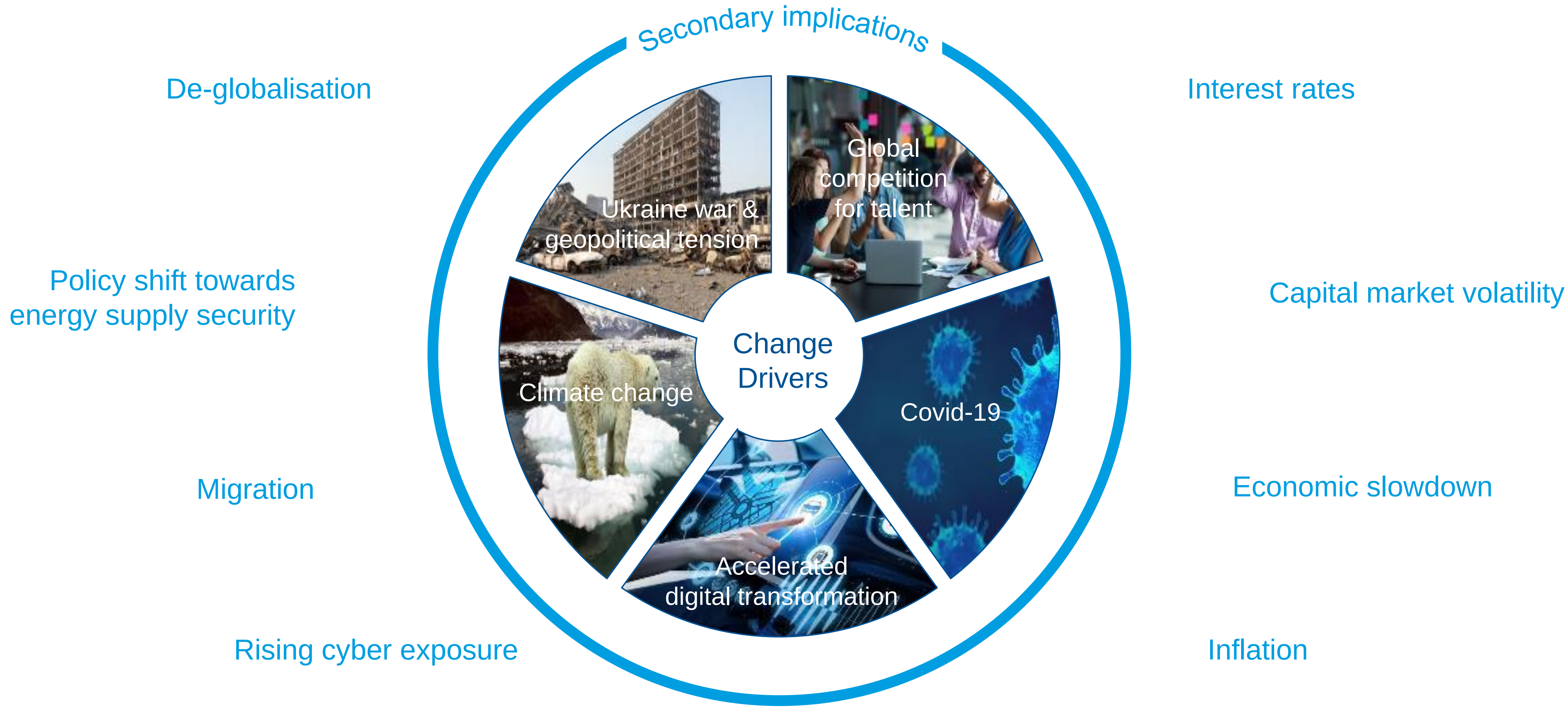
Defined risk appetite
- Realistic cat modelling and budgeting
- Sophisticated risk selection and limit management
- Strong portfolio diversification

1) According to Willis Towers Watson, end of 2021

2 Investing in future-readiness

Current global trends are testing the reinsurance industry's resilience

Secondary implications increase complexity



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We are investing in our future-readiness

A	B	C	D	E
Client centricity	Innovation capabilities	Emerging markets	Winning talent	S G
				

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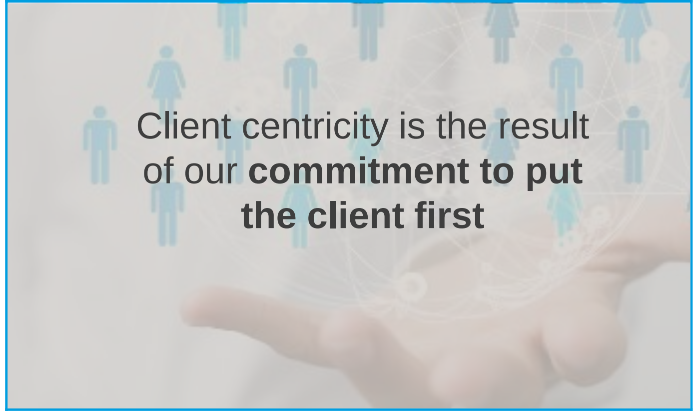
We are building on our client-centric culture

Differentiation through client partnerships

Holistic client management



Client centricity is the result of our **commitment to put the client first**

Steadily broadening **client partnerships**

Continuous expansion of our **C-suite** connections with cedants

Top reinsurer position with key clients and brokers

Tailor-made solutions

We **listen** to our clients, develop in-depth understanding of their specific needs and offer **tailored solutions**

Go-To market for structured reinsurance solutions

Strong and **consistent growth** rate over time

Average **xRoCA ≥ 10%** over last 10 years

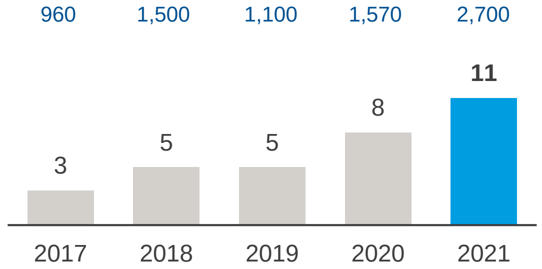
Access to capital markets as a leading ILS facilitator

P&C R/I: Collateralised fronting service: **>1,500** reinsurance participations

Catastrophe bonds

Number of transactions

Total limits in m. USD



L&H R/I: Risk transfer to capital markets: **USD 1 bn.** of life-related risk

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We are strengthening our innovation capabilities

Creating optionality by building new partnerships

- Our **innovation accelerators** play a vital role in delivering at highest speed: **from idea to execution**.
- They swiftly connect and empower the right people across the firm.

Leveraging our innovation capabilities

hr bluebox
data insights out of the box

Parametric Solutions	Data Analytics	Cyber

Partnering with InsurTechs

Increase Hannover Re's **visibility** to attract opportunities

Expand **partnerships & scale** capabilities

Technology emphasis

Data **analytics community** drives global exchange and learning

State-of-the-art **data science** environment

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Emerging markets offer long-term growth potential

Adapting to a dynamic market environment and focusing on Asia

- Strengthen our footprint in Asia-Pacific hubs
- Dedicated Executive Board commitment to APAC

Financial Solutions

Leveraging our market-leading **structuring capabilities**

Providing **capital and solvency relief** for our clients

Triple-digit EBIT expected for 2022

Facultative initiatives

Growth and profitability **above plan**

E.g. casualty premium **+350%** for APAC (2018 to 2021)

Set up to meet our customers' increasing demand for **specialised knowledge**

Specialised insurers

Technical support for clients who **focus on mono lines** of business combined with **proportional reinsurance cover**

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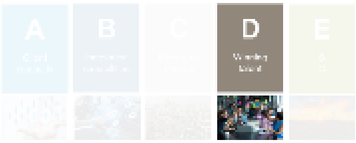
Winning talent is a key priority

On the basis of strong purpose and values



Talent development

Embedding leadership **fundamentals**

Coaching and **performance management** skills

Global mobility

Transparent job market across entire organisation

Solution-driven and **flexible**

Employer of Choice

Investing in **employee value proposition**

Strengthening **employer brand**

FutureHR

Advancing **digital transformation**

Building up **HR Business Partner** and Service function

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ESG is increasingly embedded in our core business processes

We support the transition to a sustainable economy

We **keep pace** with regulatory developments and **actively participate** in the transition efforts made by our industry.

Social QualityScore (ISS ESG)	Corporate ESG Performance – Prime (ISS ESG)	MSCI ESG Ratings	
Scale: 1 (best) – 10 (worst)	Scale: A+(best) – D- (worst)	Scale: AAA – CCC	FTSE4Good Listed since: **2015**
Rating: **1**	Rating: **C+**	Rating: **A**	DAX 50 ESG Listed since: **2020**

Climate change mitigation and adaptation

Closing the protection gap

Double materiality engrained in our daily business

MSCI disclaimer statement

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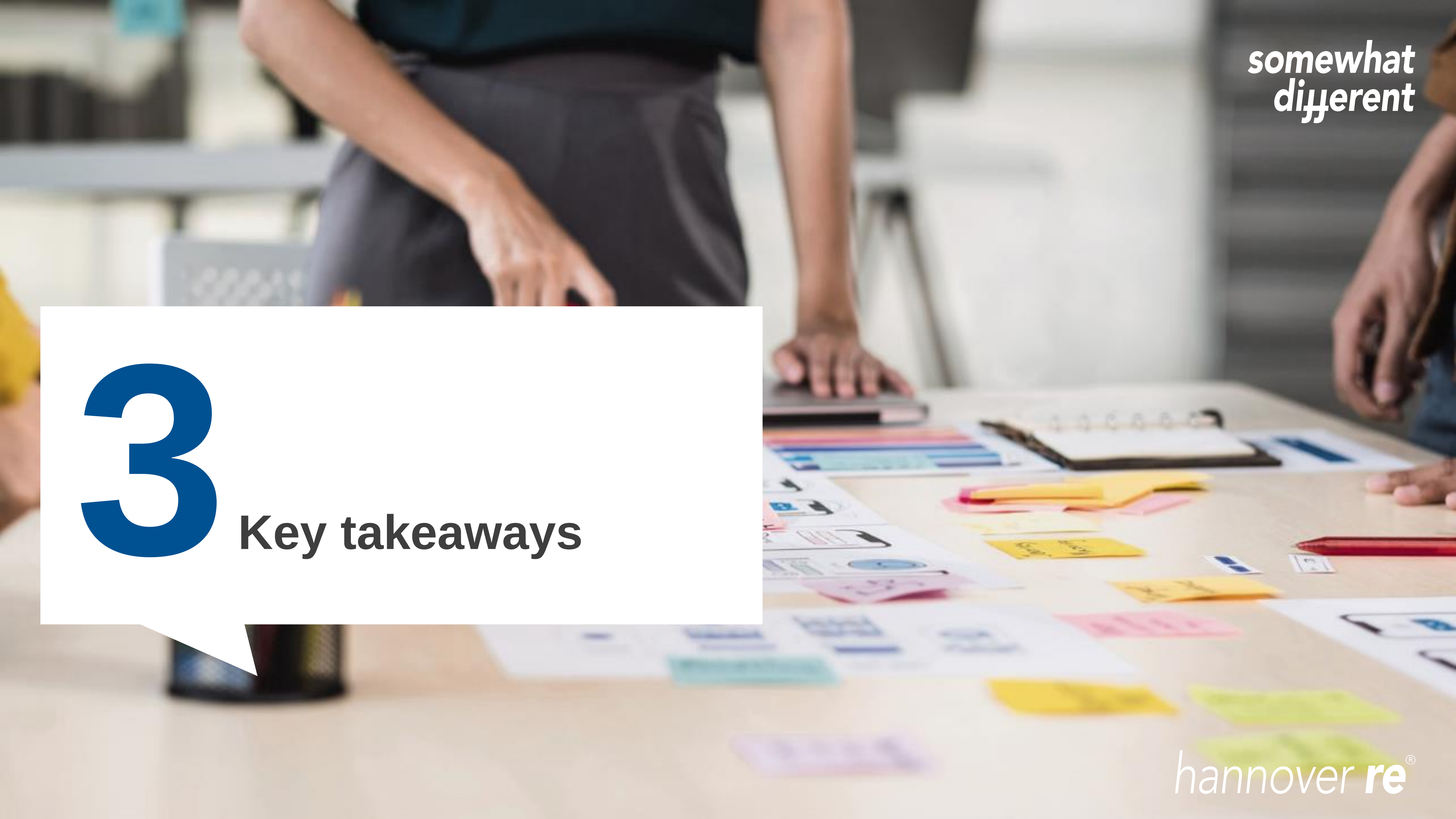

3 Key takeaways

somewhat different

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Key takeaways

Performance update
- Reinsurance growth supported by long-term trends
- Efficient business model and strong underwriting DNA
- Resilient earnings profile delivering attractive RoE
- Strong risk management supporting sustainable performance

Future-readiness
- Strengthening and broadening partnerships
- Building innovation capabilities to create optionality
- Pursuing long-term focus on APAC region
- Winning talent and ESG as key imperatives

Conclusions
- Well positioned for profitable growth
- Responsive and reliable support for business partners
- Agile capital steering as key differentiator

Hannover Re is building on its strengths and focusing on ensuring future-readiness

Update on investments

Portfolio resilience in a challenging environment

Clemens Jungsthöfel, Chief Financial Officer
25th International Investors' Day 2022
London, 6 October 2022

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Agenda

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Defensive positioning

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Long-term effect of rising interest rates

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Key takeaways

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1 Defensive positioning

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Strategic positioning 2022 very effective in current market environment

Sale of listed equities, defensive credit-risk taking whilst creating opportunities

Investment category[1)]	2021	1H/2022
Fixed-income securities	**86%**	**84%**
- Governments	34%	36%
- Semi-governments	14%	13%
- Corporates	32%	29%
Investment grade	28%	25%
Non-investment grade	4%	4%
- Pfandbriefe, Covered bonds, ABS	6%	7%[2)]
Equities	**4%**	**4%**
- Listed equity	1%	<1%
- Private equity	3%	4%
Real Assets	**5%**	**6%**
Others	**2%**	**2%**
Short-term investments & cash	**3%**	**4%**
Total market values in bn. EUR	**56.2**	**56.6**

Strategic measures to increase resilience and build dry powder

Liquids

- Increasing risk-minimal government exposures
- Increasing most liquid Pfandbriefe and Covered bonds
- Increasing short-term investments and cash
- Active cash management

Risk picture

- Sale of listed equities in Q1/Q2 (EUR ~100 m. gains)
- Defensive credit strategy on large credit portfolios in developed markets
- Further increase in market values of private equity and real assets, whilst commitments remain stable
- Active ALM management of yield curves and fx to reduce volatility

1) Economic view based on market values without outstanding commitments for Private Equity and Alternative Real Estate as well as fixed-income investments of EUR 1,597.0 m. (EUR 1,588.2 m.) as at 30 June 2022
2) Of which Pfandbriefe and Covered bonds = 61.0%

2 Long-term effect of rising interest rates

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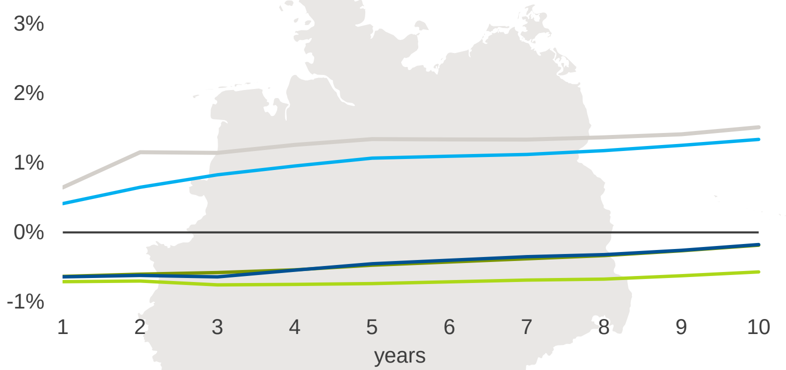
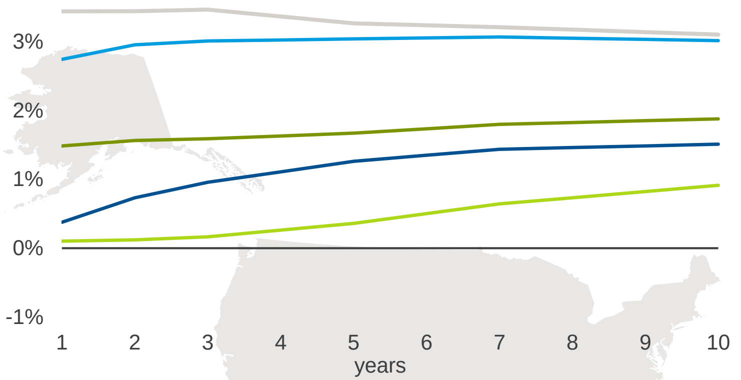
Yield curves torn between inflation and recessional fears

Historic short-term movements with long-term benefits

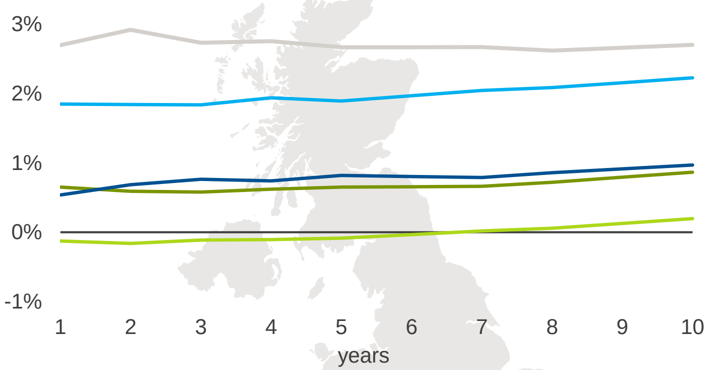
German Bunds



US Treasuries



UK Gilts



30.12.2019 31.12.2020 31.12.2021 30.06.2022 30.08.2022

German Bunds

Delta bps	2020	2021	YtD	QtD
1 Y	-8	7	129	23
5 Y	-27	29	179	27
10 Y	-38	39	169	18

US Treasuries

Delta bps	2020	2021	YtD	QtD
1 Y	-138	27	306	70
5 Y	-131	90	200	23
10 Y	-97	60	159	9

UK Gilts

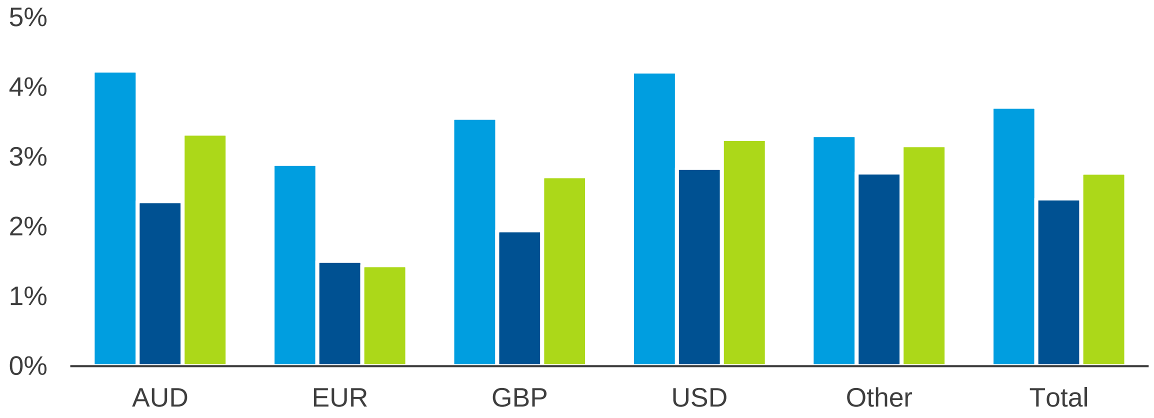
Delta bps	2020	2021	YtD	QtD
1 Y	-78	67	216	85
5 Y	-74	91	185	78
10 Y	-67	77	173	48

Impact of current yield curves

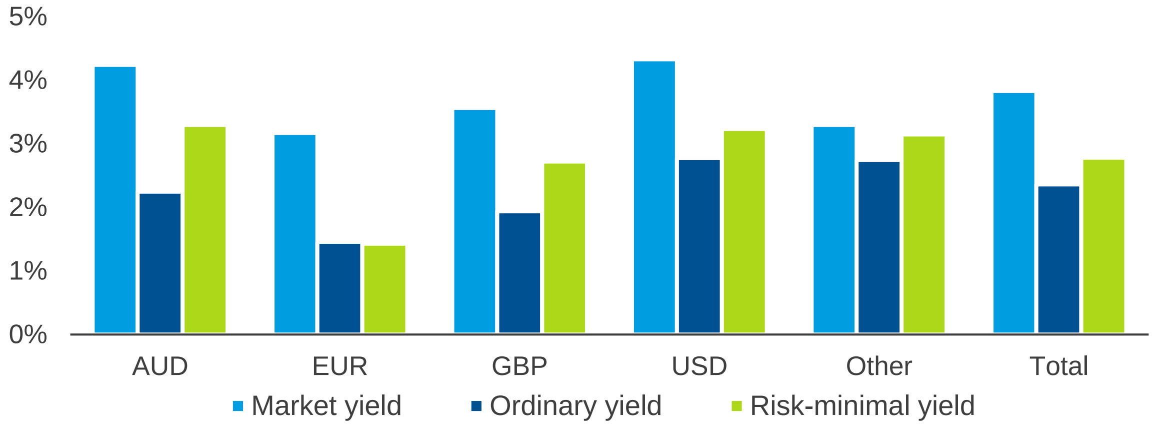
- Higher yield curves clearly beneficial for reinsurance
- Short-term, sharp increase can limit portfolio flexibility, lead to higher market volatility and impact valuations of equity and real assets
- However, volatility expected to normalise when signs emerge that inflation is stabilising and recession is priced in

Market reinvestment yields significantly above locked-in yields
Ordinary income to gradually benefit from increased yields

Fixed-income portfolio yields as of 31 Aug 2022



Fixed-income portfolio yields (excluding inflation linker)



As of 31 August 2022 (non-audited figures); analysis with 10Y UST @ 3.16% and 10Y Bunds @ 1.54%)

Impacts from higher reinvestment yields

Market yields (Current market yield of actual portfolio if reinvested)

- Due to yield curve and spread movements market yields of portfolio across currencies exceed locked-in ordinary income yield (see chart)

Ordinary yields (Locked-In yield of current portfolio; inflation linkers simulated according to current market inflation expectation until maturity)

- Modified duration of fixed-income portfolio ~5.3, therefore it will take time for book yields to increase to market yields

Risk-minimal yields (Risk-minimal portfolio yield per currency, i.e. govies with respective ALM durations)

- Defensive strategy in place slightly extends the process of moving ordinary yields to market yields

Inflation linker

- Effect on portfolio yields until maturity rather limited, since much lower inflation expectations in markets in comparison to current levels

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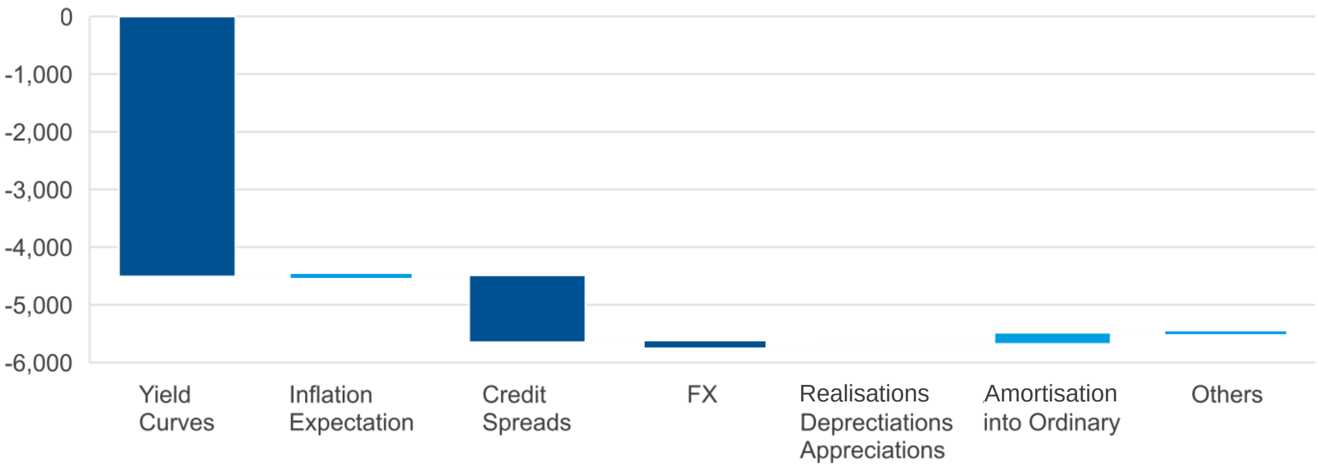
Balance sheet / equity impact due to lack of discounting under IFRS 4

Economic view proves strong ALM and resilience against yield movements

IFRS accounting view / OCI position YTD change (pre-tax)

in m. EUR



Economic / Solvency view

Interest rate stress		Target corridor	2022Q2
Δ NAV in %	parallel shift -100bps	±5	2.1
	parallel shift +100bps		-2.3
Δ CAR in %pts	parallel shift -100bps	±10	-5.1
	parallel shift +100bps		0.0

As of 31 August 2022 (non-audited figures)
NAV = Net Asset Value; CAR = Capital Adequacy Ratio

Key observations

IFRS

- Majority of OCI reduction is yield curve driven, followed by credit spread movements
- Some positive impact from change in inflation expectation, amortisations and realisations

Solvency / Economic picture

- Very effective, dual targeting Asset-Liability Management in place
- Due to strict Asset-Liability Management limited effects on Capital Adequacy Ratio

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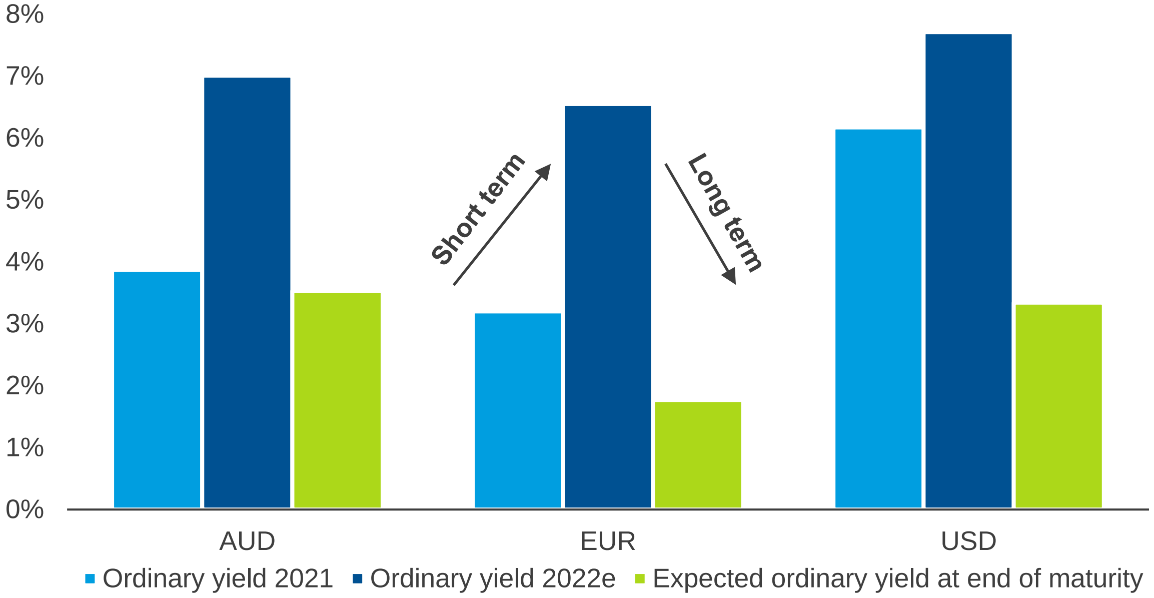
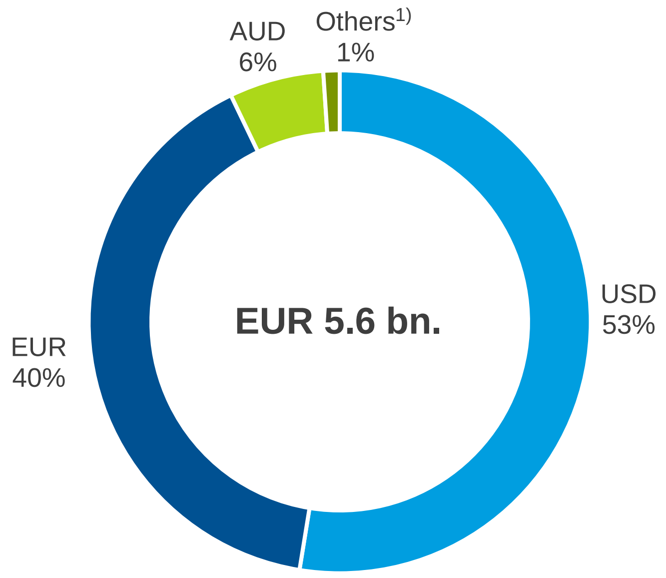
Inflation-linked bonds with strong performance, supporting overall resilience

Sharply falling market expectation for inflation from 2023/2024

Ordinary yield of inflation linker portfolio



Inflation linker portfolio



Impact of inflation linker on current and future ordinary income

- High inflation currently leading to extraordinary high ordinary income particularly in 2022, partly due to amortisation method under IFRS
- Sharply falling market expectations on future mid- and long-term inflation will reduce ordinary, incl. extraordinary effects being reversed out over time

As of 31 August 2022 (non-audited figures)
1) ZAR, GBP, NZD

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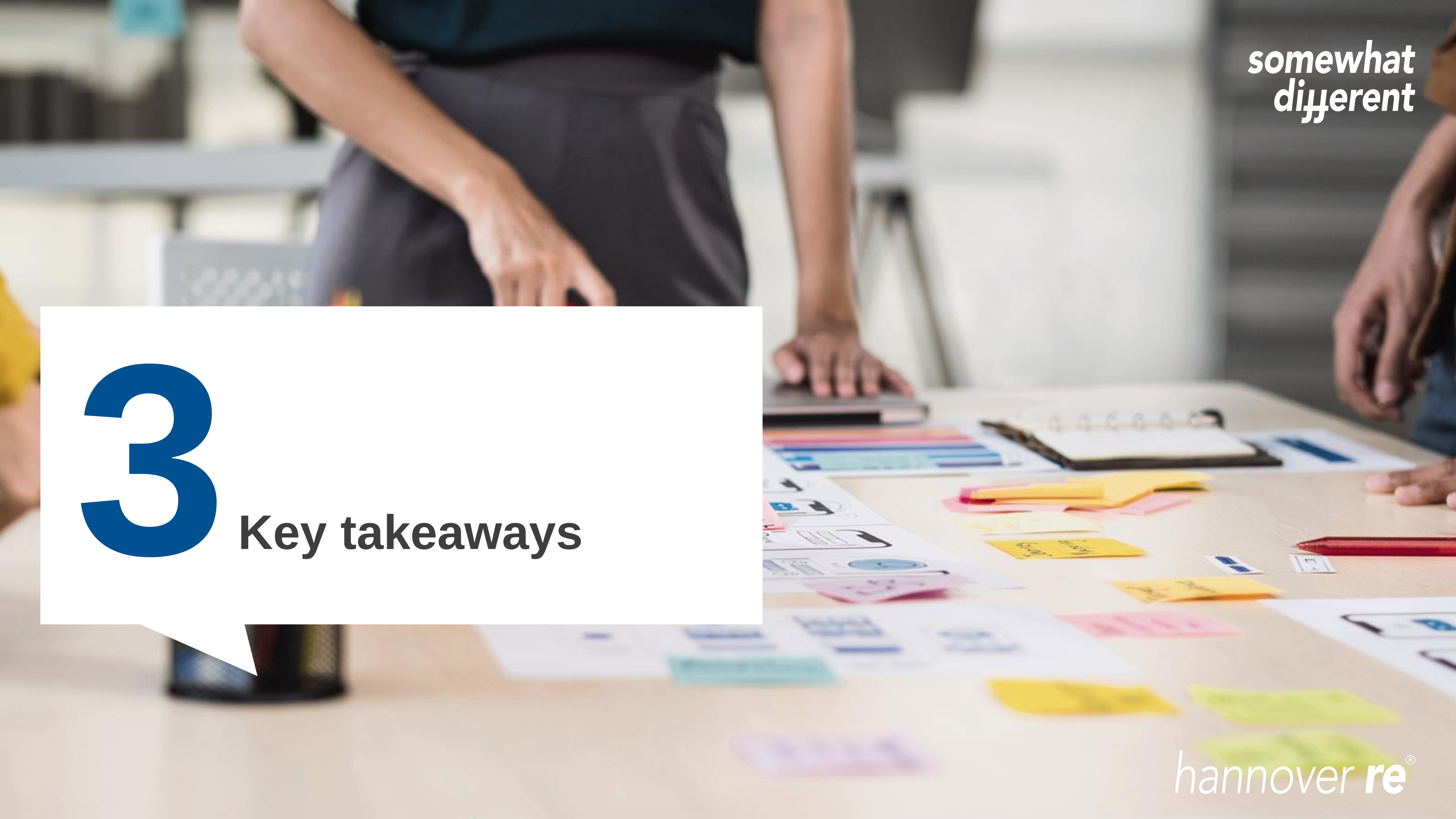

3 Key takeaways

Key takeaways

Investment strategy

- No material changes to asset allocation, i.e. ~84% fixed income, given strict ALM, complemented by private equity and real assets
- Defensive positioning from January 2022 proven to be very effective in current market environment (equity, yields, credit)
- Dry powder built up to take advantage of market opportunities

Interest rates

- Interest rate movements have led to reinvestment yields already exceeding current book yields
- Ordinary income will clearly but (only) gradually benefit from increased yields over time
- Impact on OCI / equity mainly accounting driven, given strict ALM

Inflation

- Inflation-linked bond portfolio protects very efficiently against current and future inflation
- P&L contribution to normalise due to inflation market expectations and amortisation accounting effects

Our investment portfolio is showing exceptional resilience in a challenging market environment, whilst fully delivering on plan

Insights into P&C reinsurance

Pricing trends and growth story

Sven Althoff, Member of the Executive Board
25th International Investors' Day 2022
London, 6 October 2022

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Agenda

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Growth story

2

Pricing trends

3

Key takeaways

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1 Growth story

Our ability to grow is based on strong foundations

Growth is steered by interplay of strategy and risk selection

Strategy

Client centricity

Effective capital management

Focus on reinsurance

APAC

Risk selection determined by risk appetite and bottom-line contribution

NatCat

US Casualty

Mortgage

UK motor

Underwriting discipline

Adherence to margin requirements

Cyber

Capital requirement

Foundations


Holistic partnership with clients

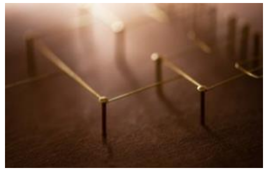

Reliability


Solution driven


Strong execution


Empowered underwriter

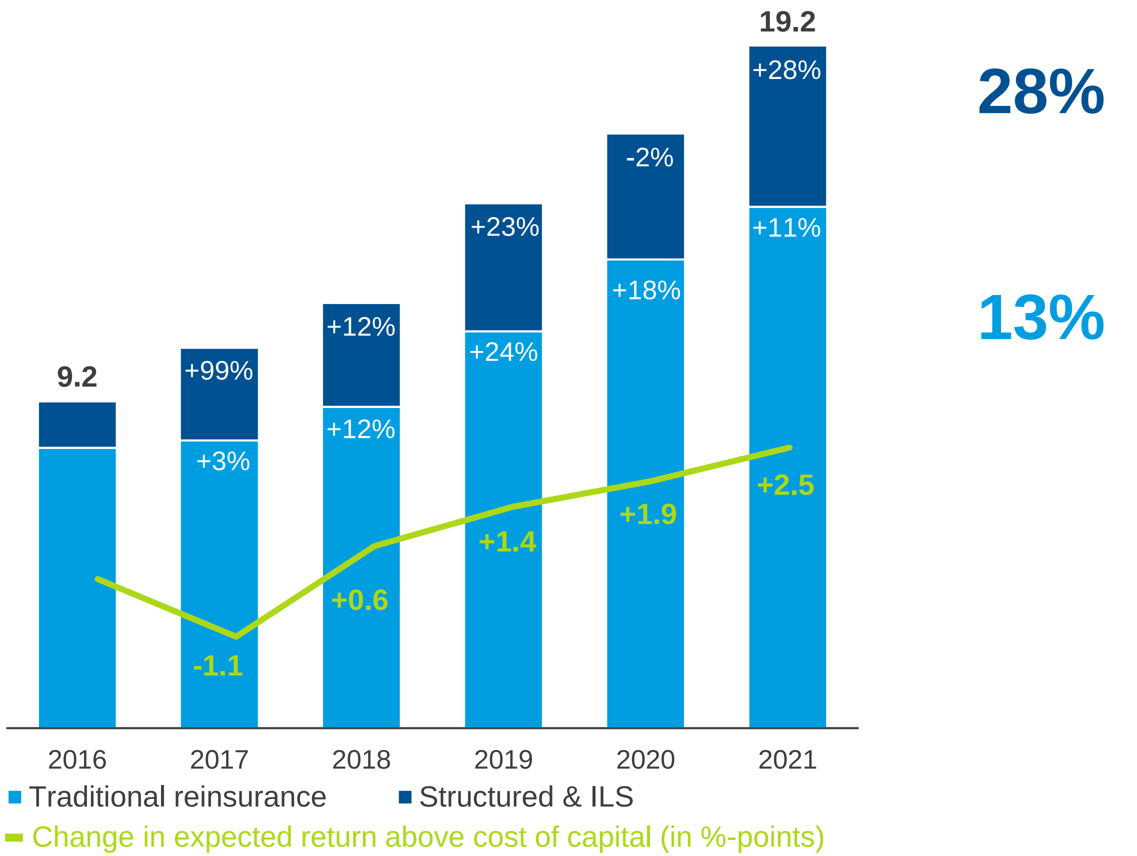

Innovative products


Lean operating model


Financial strength

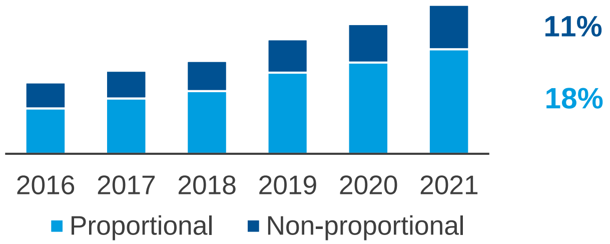
Growth in traditional P&C reinsurance accelerated with improving profitability
Total P&C premium doubled in five years – on a highly diversified basis

Gross written premium in bn. EUR

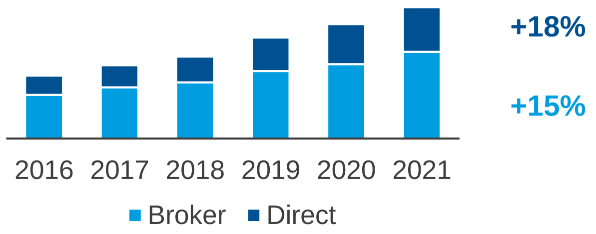


5Y-CAGR

More dynamic price increases in primary insurance

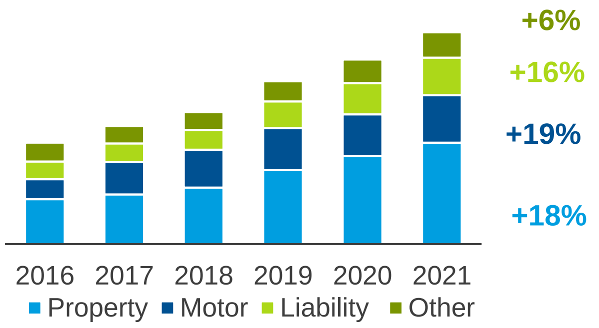


Balanced growth



Diversified growth

Cycle management in specialty lines



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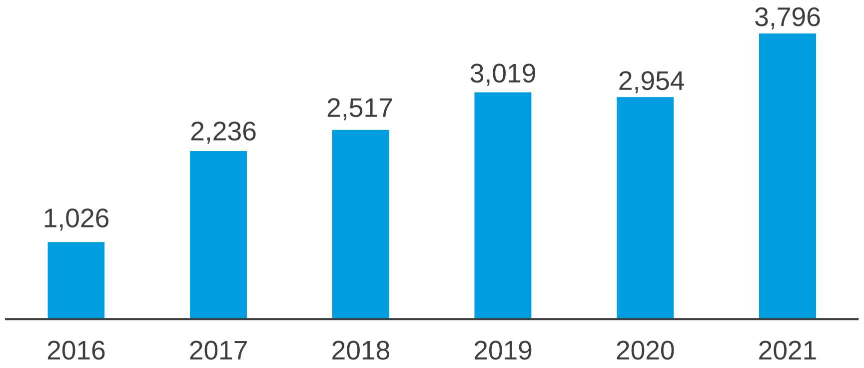
Excellent return for specialised know-how

Reputation for innovative solutions and strong execution enables growth

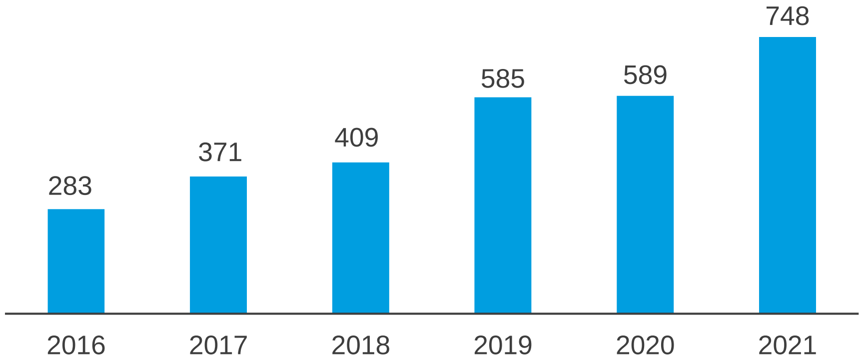
GWP Structured Reinsurance in m. EUR



5Y-CAGR

30%

GWP Insurance-Linked Securities (ILS) in m. EUR



5Y-CAGR

21%

Why did we grow?

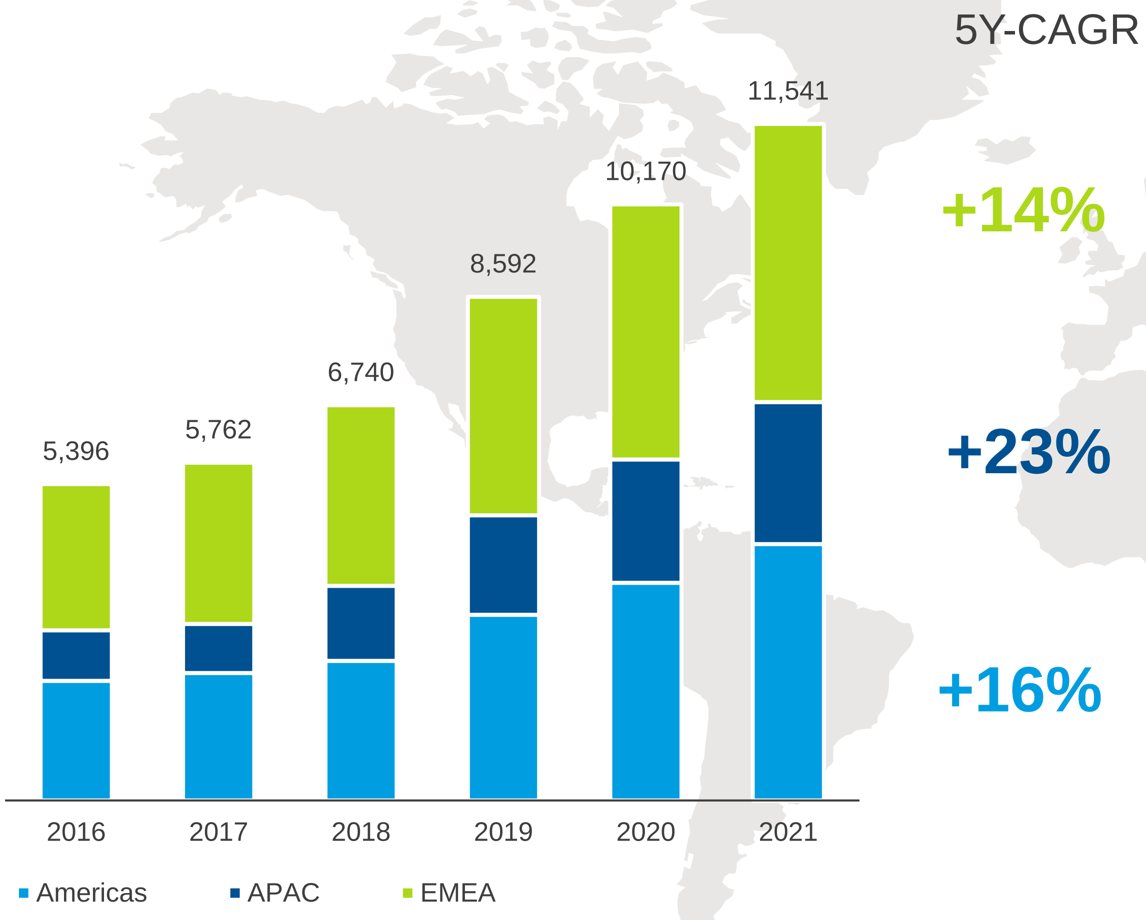
- Increasing demand due to uncertainty and volatility in recent years, further supported by increasing focus of brokers on Structured R/I
- Leading provider of structured and tailor-made solutions for insurers and corporates
- Very attractive return on capital with comparatively low volatility xRoca ≥ 10%

- Competitive advantage based on experienced team with strong track record of fast and professional execution
- Reputation attracted new clients
- Growth with existing clients based on long-term relationships
- Very attractive return on capital with very limited risk for Hannover Re's balance sheet

Diversified growth in regional markets

GWP by regional markets

in m. EUR



Why did we grow?

EMEA

- Diversified growth across regions and lines of business
- Increased support of Lloyd‘s (incl. Argenta) benefitting from market hardening
- Continuous expansion of strategically strong position in Germany

APAC

- Increasing local footprint and local hub
- Growth in China driven by successful client-relationship management with strategic clients
- Growth in Australia predominantly with existing clients, deepening the relationships

Americas

- Loss activity and resulting rate increases in (US) property (re-)insurance
- Significant growth of cyber business (US liability)
- Shift to proportional business due to dynamic price development in primary insurance
- Growth is mainly driven by expansion of existing relationships
- Growth in LatAm focused on property lines (incl. parametric solutions)

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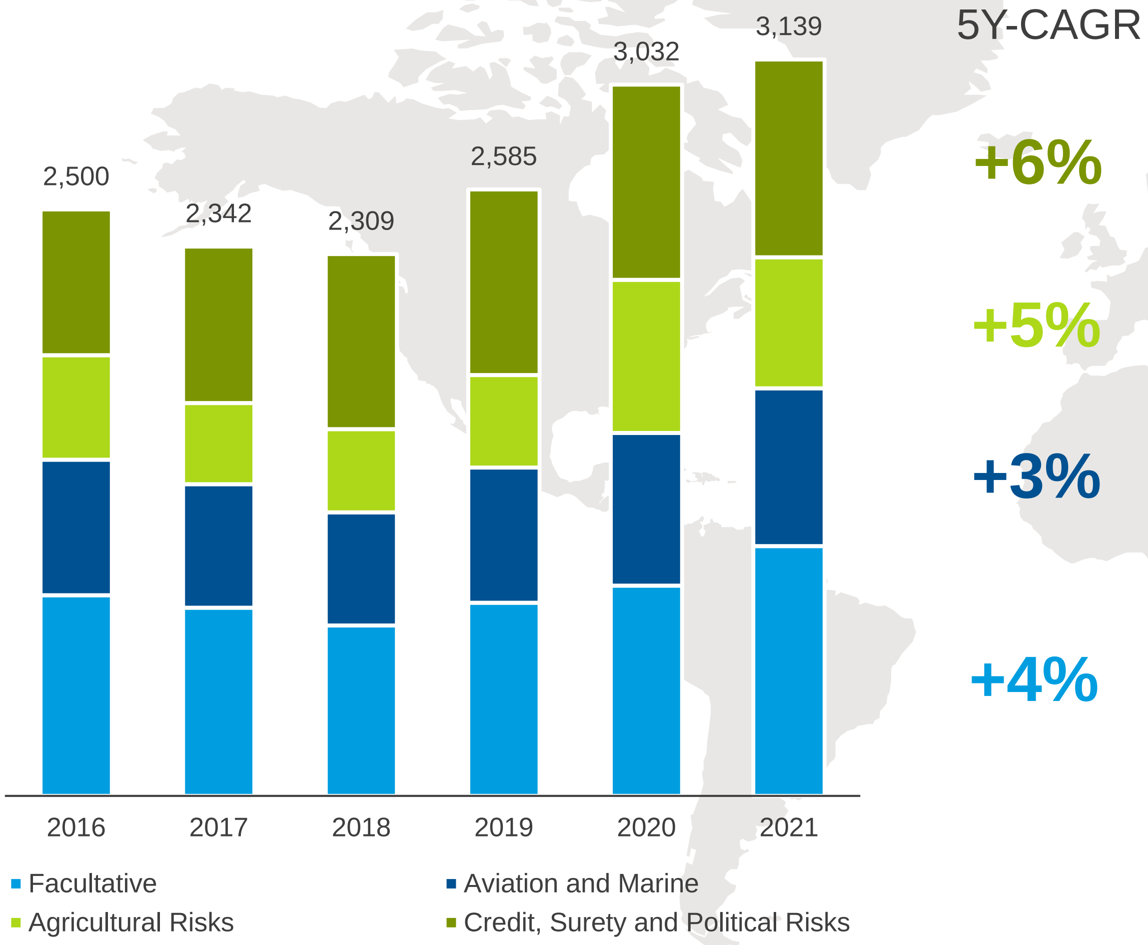
Selective growth based on strong market position in specialty lines

Active cycle management reflected in premium development

GWP by worldwide markets in m. EUR



Why did we grow?

- Expanding a leading market position in Credit, Surety and pol. risk
  - Increasing volume from economic growth
  - Client relationship management resulted in higher shares and new clients

- Agro: Focus on core markets (e.g. US-MPCI) and parametric solutions
- Favourable underlying growth masked by mandatory cession to state-owned reinsurer in China in 2021

- Active cycle management in Aviation & Marine
  - Reduction in soft-market years
  - Growth following pronounced rate increases in recent years

- Increasing demand to manage volatility with facultative reinsurance
  - Substantial price increases
  - Strategic partnership with HDI Global Specialty

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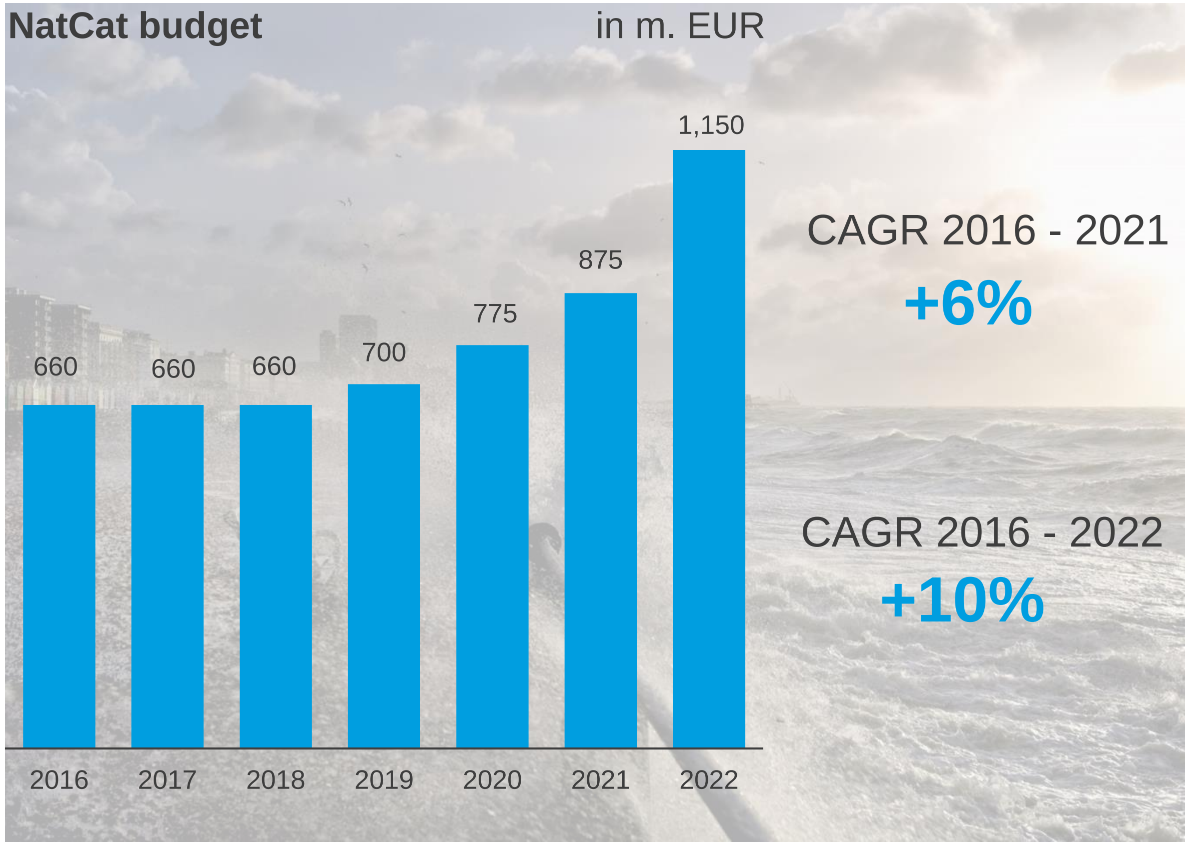
Exposure growth in NatCat below overall business growth

Accelerated growth in most recent years builds on consecutive rate increases



Why did we grow?

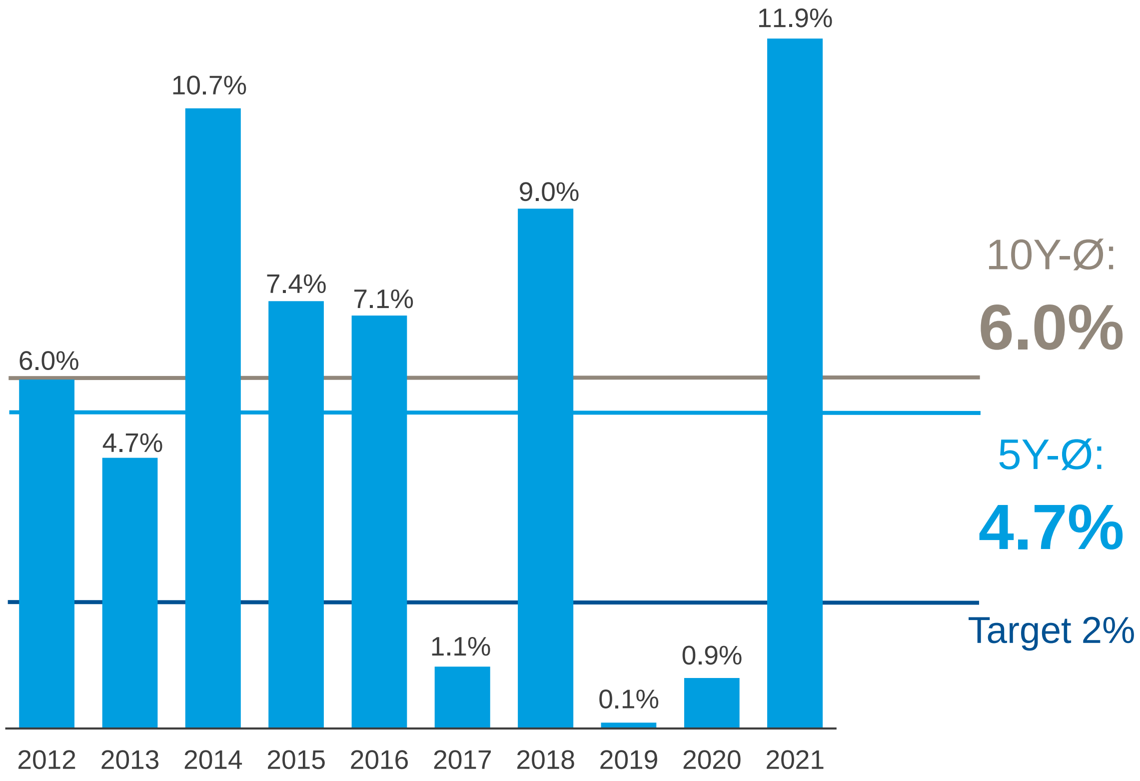
- Active cycle management
  - Moderate growth in first phase of hardening market (until 2018)
  - Accelerated growth since 2019 driven by rate increases accompanied by higher demand
  - Rate increases made more business adequately priced for Hannover Re
- Improved diversification driven by expansion of cat business in Europe, Canada, Japan and Australia in a very capital-efficient way
- Premium growth based on nominal and risk-adjusted rate increases and hence outweighing growth in exposure

- Stronger growth in 2022 reflects growth, model changes and cycle management for retrocession protection

Diversification is key for the profitability of our reinsurance portfolio

Long-term xRoCA well above 2% target; outperformance in 7 out of 10 years

xRoCA



10Y-average xRoCA by underwriting center[1)]

xRoCA = Excess return on capital allocated

1) Not adjusted for volume, includes underwriting center with < 10Y-history

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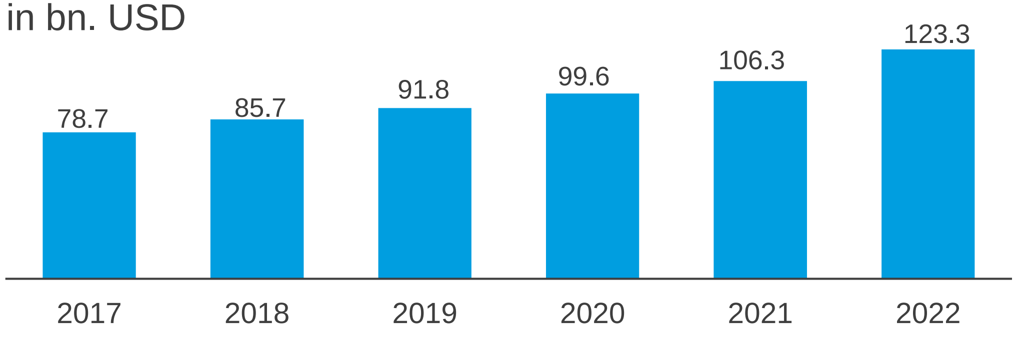
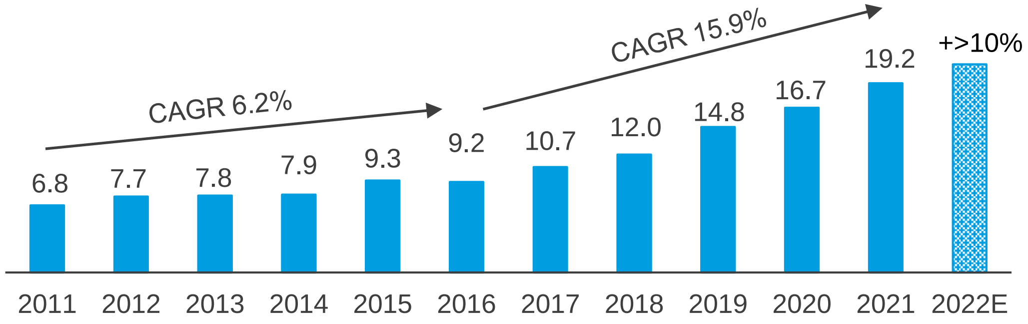
Favourable outlook for demand in P&C reinsurance

Underlying growth of P&C (re-)insurance will be driven by volatility

Modelled global insured aggregate average annual loss[1)]
in bn. USD



Gross written premium P&C reinsurance in m. EUR



1) Verisk
2) Allianz Global Insurance Report 2022

P&C insurance market

expected annual growth of

+4.6%

over next 10 years[2)]

Drivers for (re)insurance demand

- Climate change
- Uncertain geopolitical environment
- Growth of economies and increasing insurance penetration in Emerging markets

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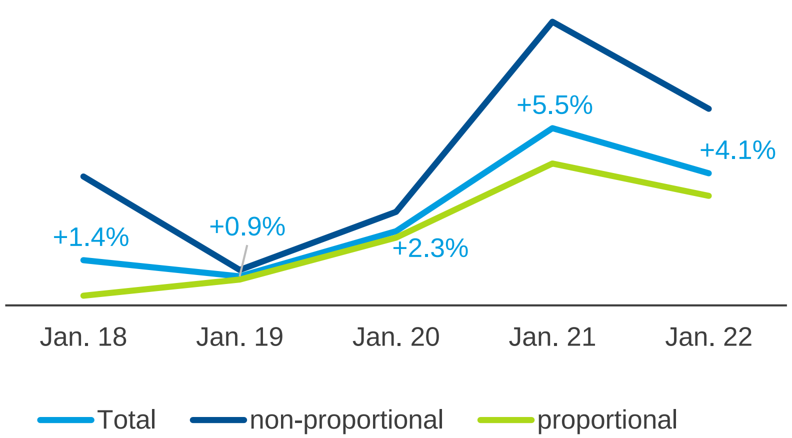
P&C reinsurance

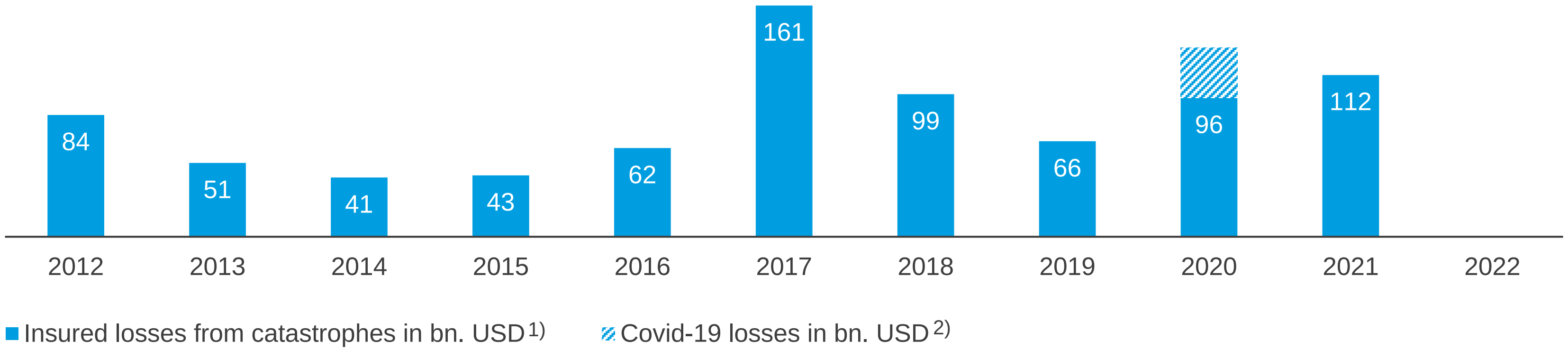
> 7%

medium-term outlook

Improving market environment

Risk-adjusted rate increases at 1/1 renewals





Drivers for rate increases

Loss experience and trends (incl. climate change)

Low interest rates (until 2021)

Inflation started to increase in 2021

1) Swiss Re Sigma Explorer
2) HSBC claims tracker

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2 Pricing trends

somewhat different

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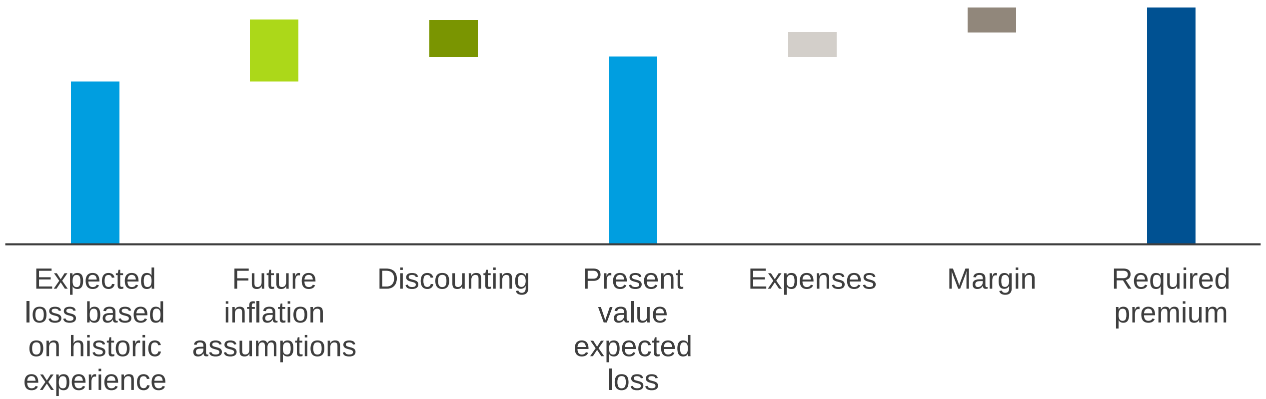
Inflation is fully embedded in our pricing

Historical inflation and future outlook differentiated by line of business and region

~25%

of traditional business protected by indexation clauses



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different inflation indices used in pricing

Short-tail property

- Forecast for building costs already adjusted early 2021
  - Uncertainty of only one year until payment of the losses

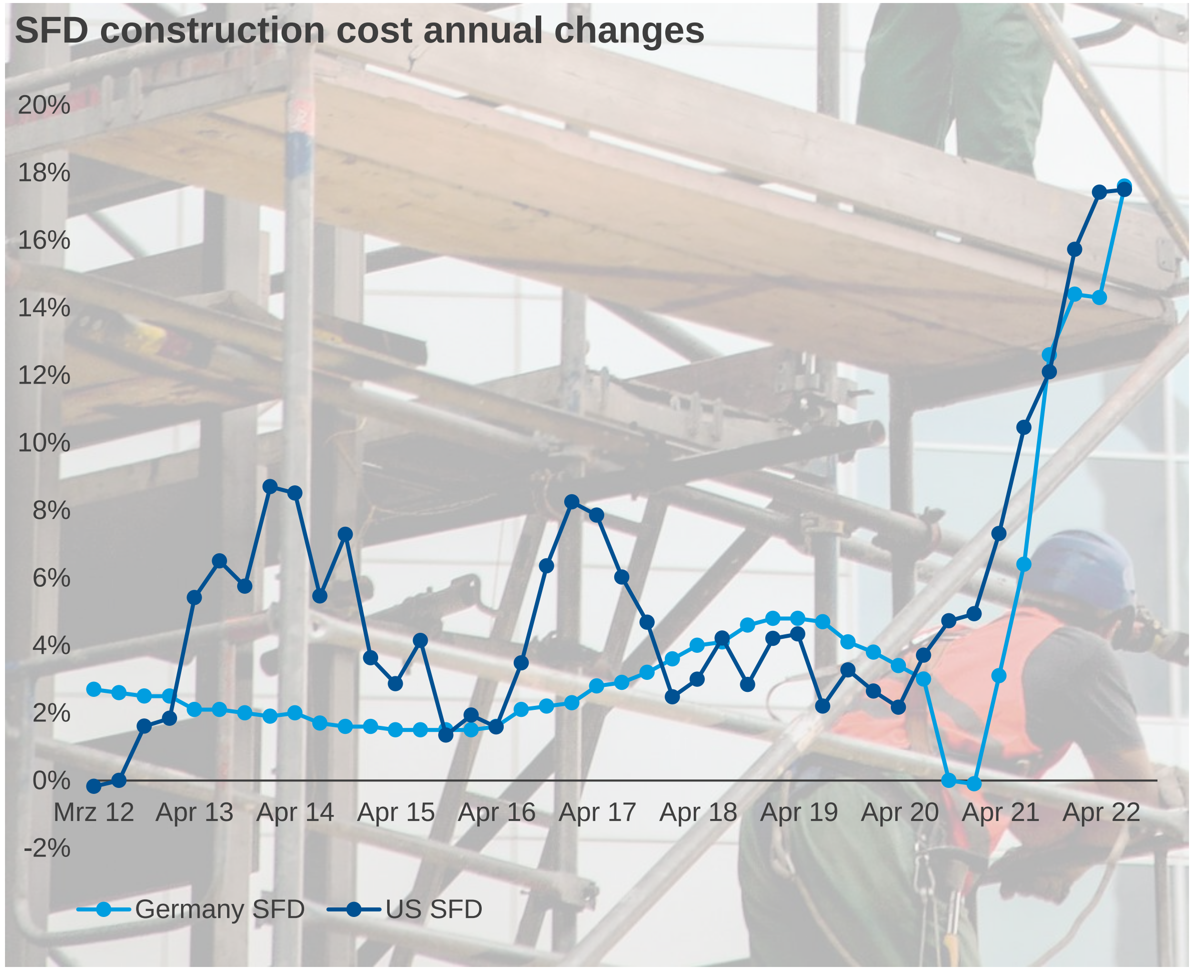
Long-tail liability

- Increased expectation for wages & salaries and consideration of superimposed inflation (e.g. medical cost + life expectancy)
- Outside the US, terms for long-tail business include indexation clauses on the non-proportional side

Proportional business

- Analysis, if inflation is reflected in increasing primary insurance rates; sliding scale commissions on parts of the portfolio

Inflation in NatCat business
Construction cost development – Germany vs US



- Significant differences in the development of prices between different materials and labour.
- Depending on the damage, labour or material may be the main driver of loss
- Loss ratio has a significant impact on insured losses as destroyed buildings need to be built according to today's regulations
- Lack of material increases time element losses (BI/ALE)

SFD = Single Family Dwelling
Sources: Germany: Statistisches Bundesamt (destatis.de), US: Construction Price Indexes (census.gov)

Inflation is considered on individual program level to reflect cedent-specific approaches in exposure valuation

Consideration of provided exposure data

Vintage of data

Inflation/ Increased reconstruction costs considered

Growth and inflation often difficult to separate

Whenever possible consideration of amount of risks and TIV development

Consideration of future effects

Underwriting estimates growth excluding inflation

Pricing unit to add inflation forecast by country

Combination of future growth (program-specific) and country-specific inflation to scale TIV to mid-term of R/I contract

Add future inflation to cover underestimated inflation effects for the past year

Example: How we deal with inflation during renewal (pricing and aggregates)

Final factor: 1.06 * 1.03 * 1.06 = 1.16 = 16% increase

Missing previous inflation:
Inflation 2021 → 2022: 12%
minus cedent's own inflation 2021 → 2022: 6% (estimated)
12% - 6% = 6% "missing" inflation

2021 | **Example** | 2022

TIV[1)] +8%

#risks +2%

average risk increases: 8% - 2% = 6%

Pure growth assumption
2022 → 2023 by underwriting: 3%

6% **future inflation**
2022 → 2023 forecast via official country-specific assumptions, not program-specific estimates

Inflation and **Growth factors** will be saved for future reporting/statistics

Current inflation levels are a global phenomenon and influence all programs

1) Total insured value

Climate-change risks are included in modelling and pricing

2021

- Development of internal tool to derive climate change-conditioned NatCat modelling catalogues from traditional cat models
- Updated stress tests by adding climate change litigation risk to the previously covered segments

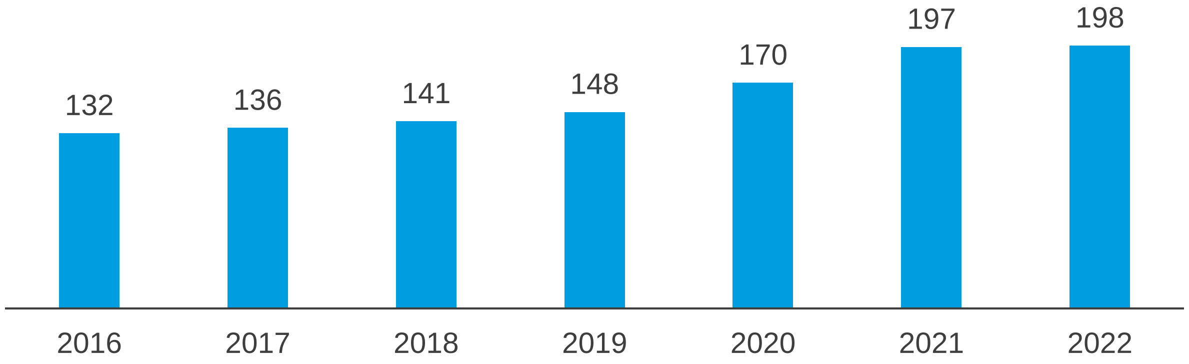
2019

- Adjustment of models based on systematic investigation of the impact of climate change on new or updated atmospheric NatCat models
- Climate change stress test on Hannover Re’s NatCat portfolio for USA tropical cyclone, Japan typhoon, and top 10 flood scenarios

2017

- Development and execution of Group-wide climate-change realistic disaster scenarios

Number of country-peril combinations included in our internal model



- All top 10 NatCat scenarios (representing 2/3 of total TVaR) are adjusted regarding climate change; more than 90% per TVaR/scenario is modelled based on validated vendor models
- Regular climate-risk stress tests
- Climate change-related adjustments are implemented consistently in pricing and accumulation control
- Vendor models adjusted for own view, which is overall more conservative

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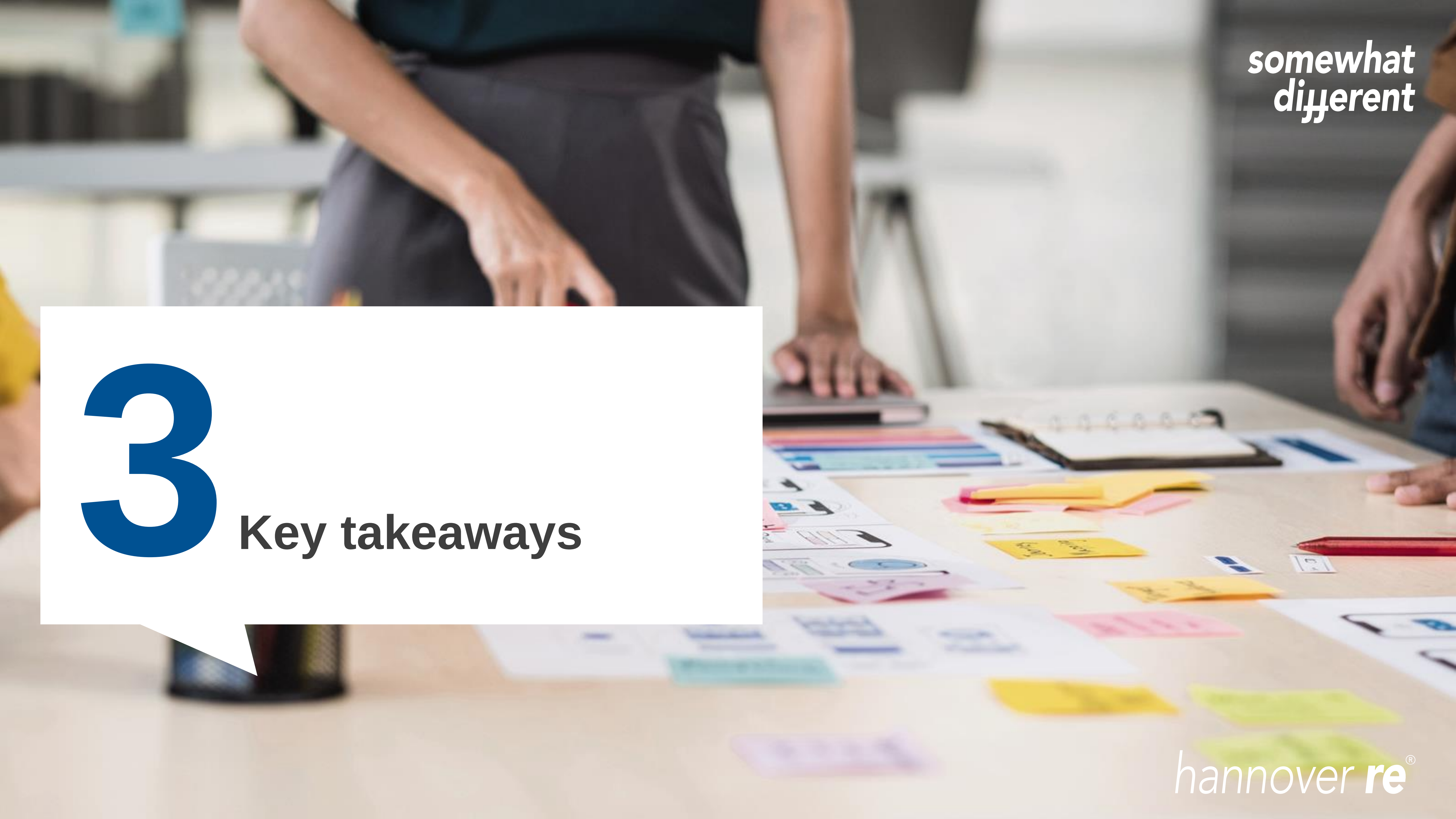

3 Key takeaways

somewhat different

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Key takeaways

Profitable growth

- Track record of diversified and profitable growth
- Increasing demand for (re-)insurance and positive pricing trends
- Increased trend towards tailor-made solutions

Pricing

- Inflation is reflected in our pricing assumptions
- Climate change is embedded in our models and reflected in pricing

Favourable outlook for further growth.

Inflation and climate change risks are manageable.

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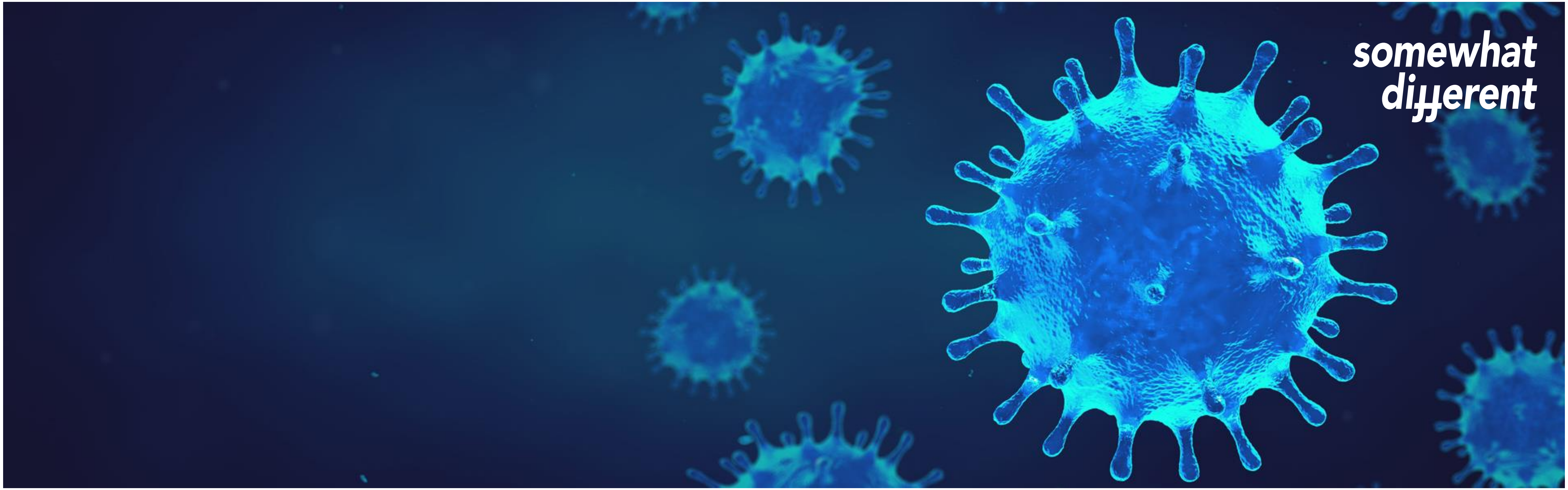

Insights into Life & Health reinsurance

Our response to the Covid-19 outbreak

Claude Chèvre, Member of the Executive Board
25th International Investors' Day 2022
6 October 2022

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Agenda

1

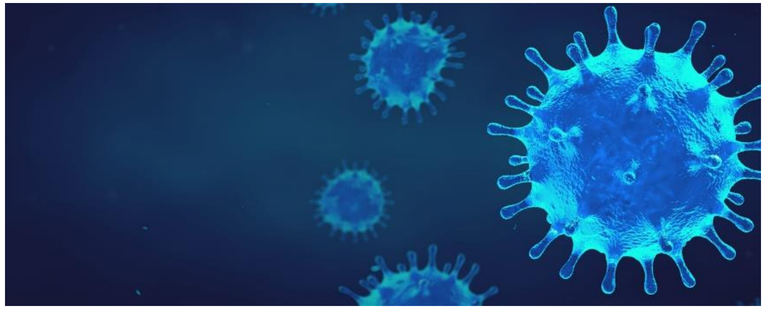
Pandemics:
Not really a surprise

2

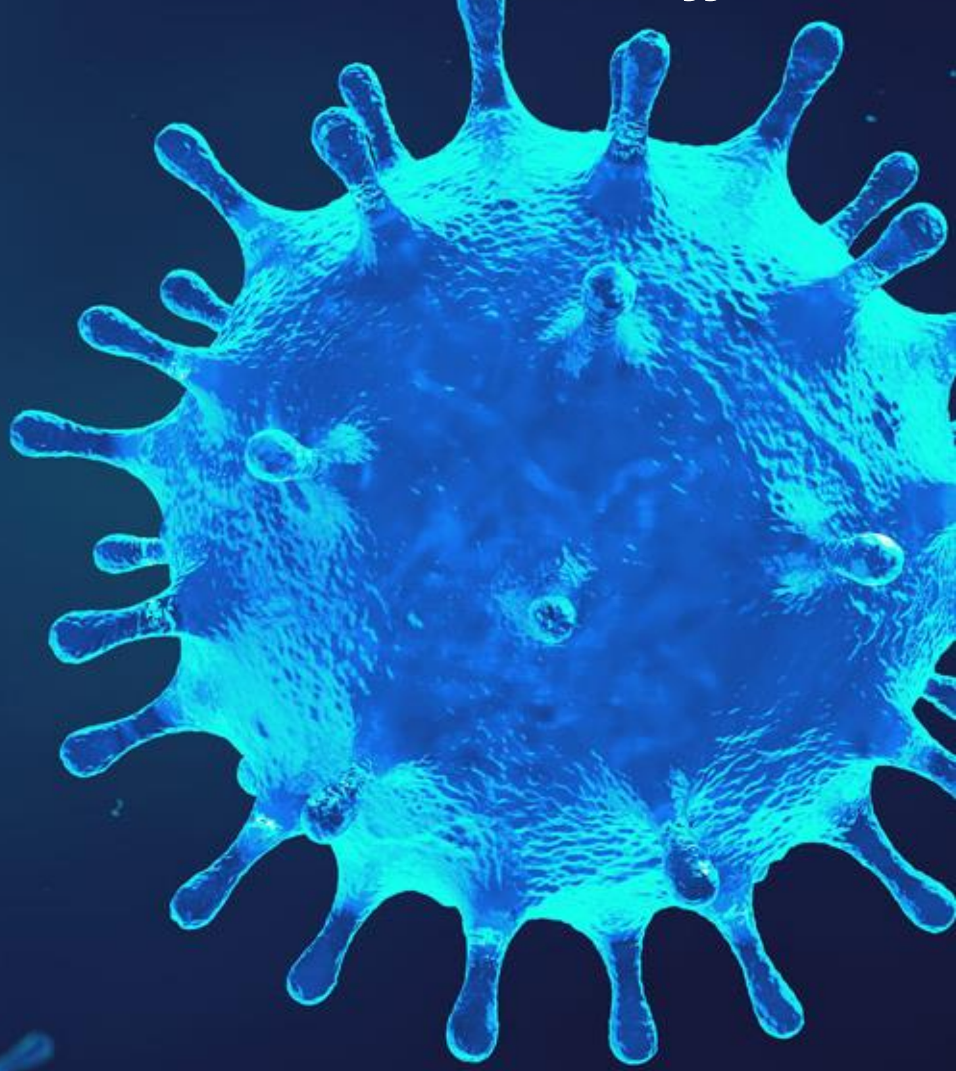
Impacts on the
L&H business

3

Conclusions &
Key takeaways



1 Pandemics: Not really a surprise



somewhat different

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Pandemics: Not really a surprise

Since the Middle Ages there have been a number of pandemic outbreaks

Pandemic

An epidemic that has spread over several countries or continents, usually affecting a large number of people[1)]

Observed pandemic outbreaks – 20th & 21st century

1918	1957	1968	2003	2009	2019
Spanish flu	Asian flu	Hong Kong flu	SARS	Swine flu	Covid-19
~ 50 m.	~ 2 m.	~ 1 m.	~ 800	~ 18 k.	6 m.

99% of deaths **below** 65

13% of deaths **below** 70[2)]

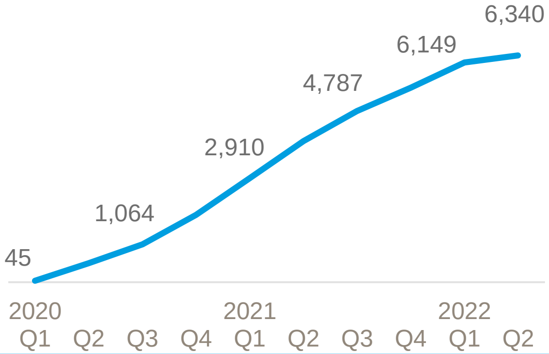
Global Covid-19[3)] statistics

550 m. Cases

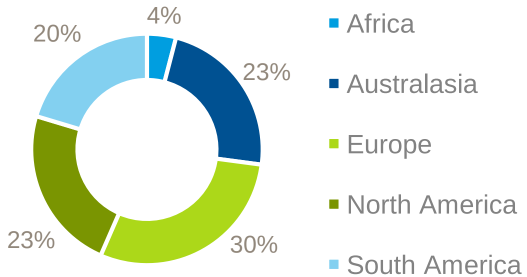
6.3 m. Deaths

As @ 2022H1

Cumulative Covid-19 deaths



Regional Covid-19 split



1) Principles of Epidemiology | Lesson 1 - Section 11 (cdc.gov) 2) openknowledge.worldbank.org 3) Coronavirus Pandemic (Covid-19) - Our World in Data

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Pandemics at Hannover Re life & health
Managing potential claims shocks is core to the role of reinsurance

Internal model

Pandemics: A L&H catastrophe risk and integral part of Hannover Re's internal model

2008 Launch of internal model

2016 Certification by regulator

1,041 EUR m. pandemic capital in 2019 1)

Extreme mortality swap

2013 First placement

7 # of tranches

335 USD m. current capacity

Pandemics can be managed through diversification

P&C L&H
Business segments

Lines of business

Geographically

Professional reinsurers are well prepared to respond to the occurrence of pandemics. Proficient risk management and proper diversification are key instruments for managing pandemic risks.

1) Required capital with a 99.5% confidence level on an aggregate annual loss basis; net of benefits from extreme mortality swap

Internal model: defines capital needs

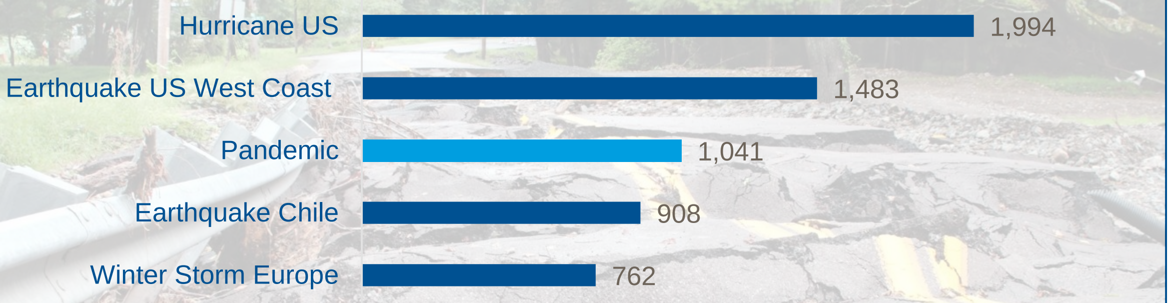
Pandemics are reflected within L&H catastrophe risk

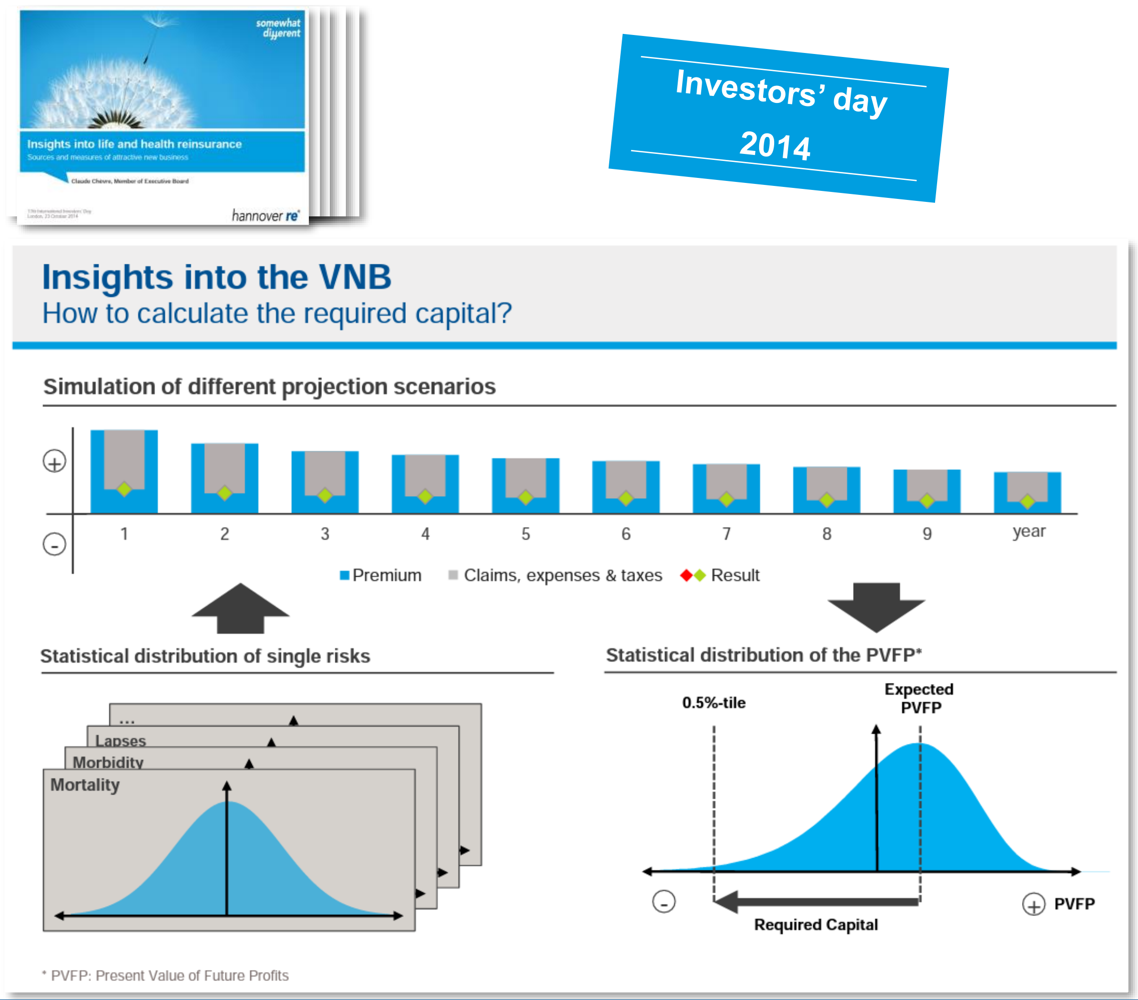
L&H risks in the internal model

Mortality
Catastrophe
Longevity
Expense
Disability
Morbidity
Lapse

2019 Pandemic capital compared to other natural hazards[1)]

EUR m.





1) Required capital with a 99.5% confidence level on an aggregate annual loss basis

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Extreme mortality swap: cover against extreme mortality shocks

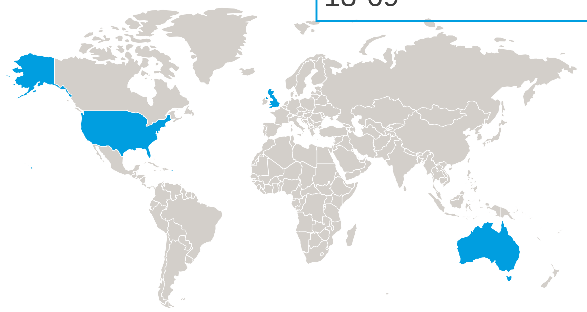
Triggered for the first time in the measurement period 2020/2021

Risk

Extreme increase in mortality rates independent of the cause of death

Index cover

Weighted to HR portfolio In the US, UK and Australia for the age band 18-69



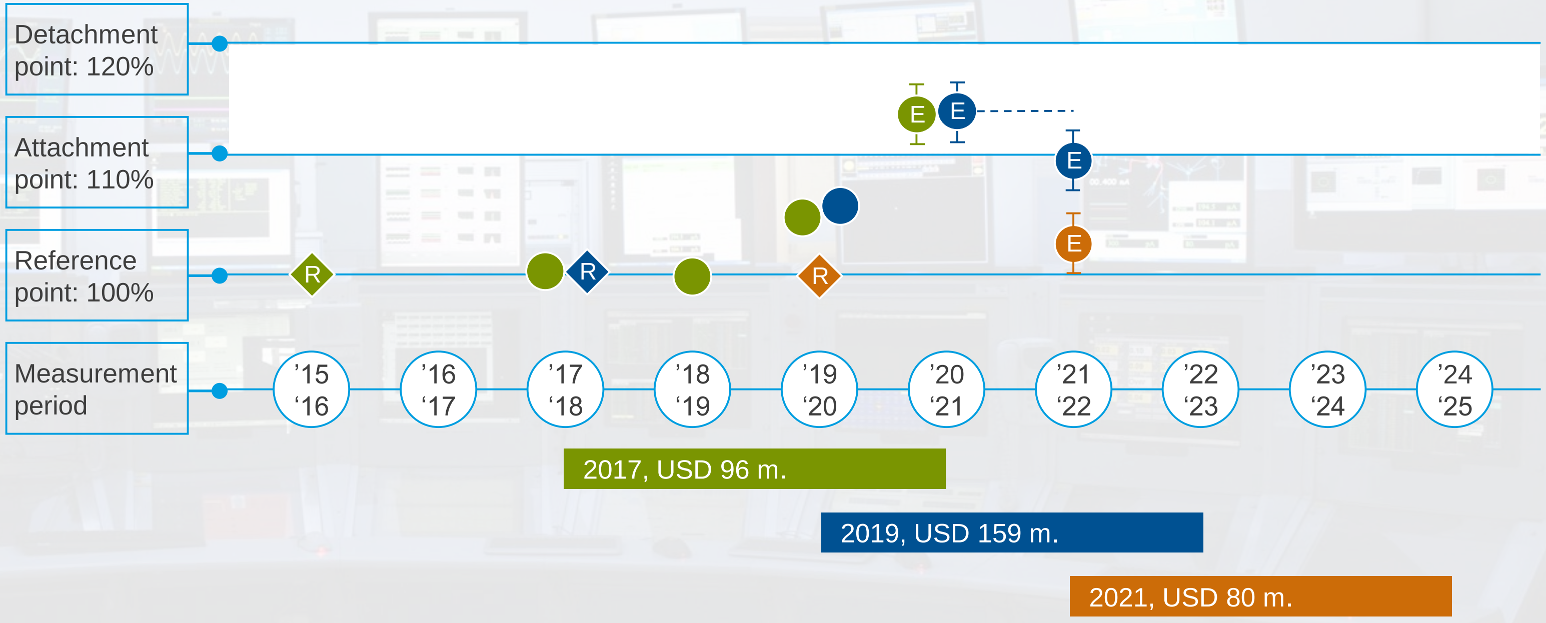
Tranches

Year, USD m. Starting year and capacity of a 5-year tranche

R Reference period of a tranche

Observed index for a measurement period of a tranche

E Current estimate of the index for a measuring point of a tranche



Simplified illustration

somewhat different

2 Impacts on the L&H business

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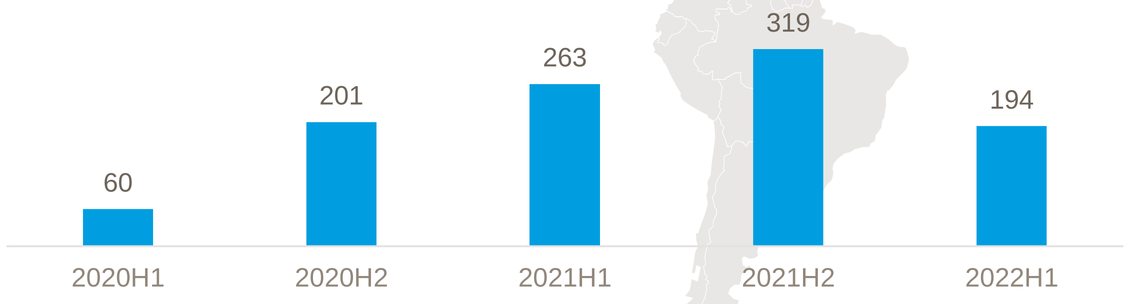
Development of worldwide cumulative population Covid-19 deaths
Reasonably good proxy for Hannover Re‘s cumulative Covid-19 claims

Some factors influencing Hannover Re’s Covid-19 claims

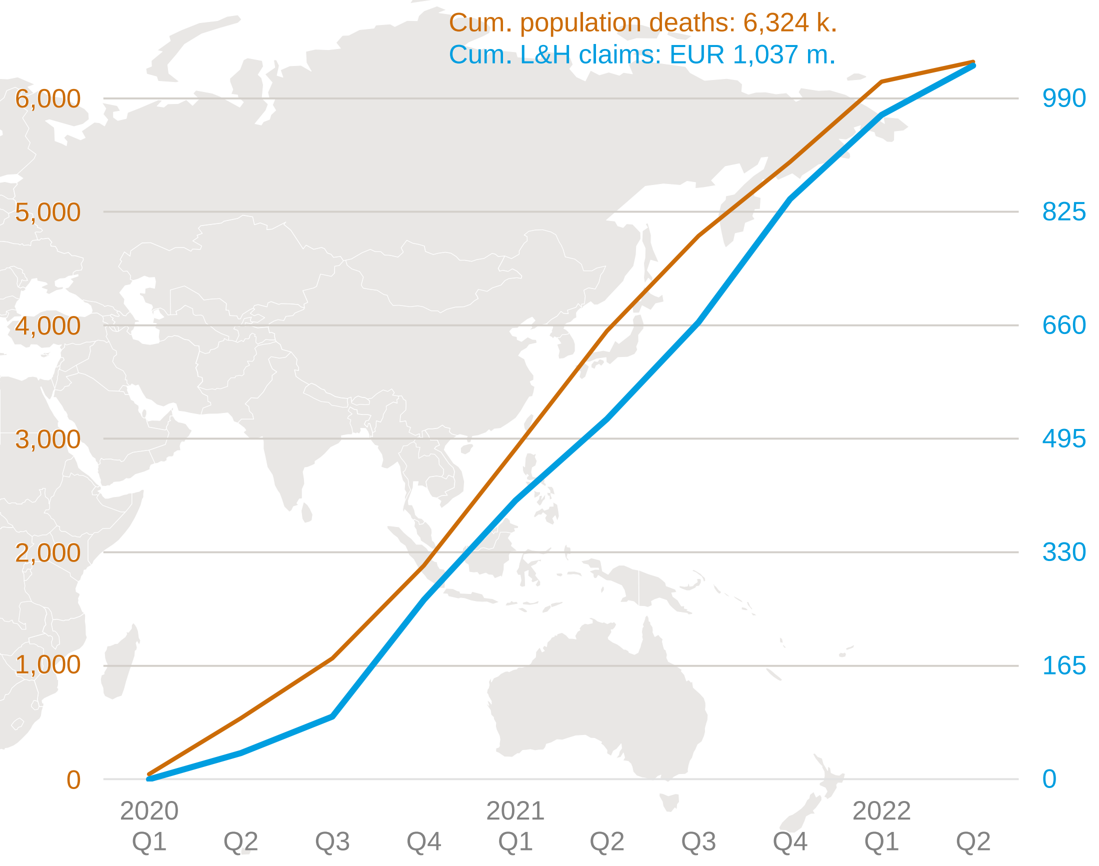
- Structure of the insured portfolio (age, socio-economic profile)
- General Covid-19 impact and base mortality in the region
- Response of local authorities
- Structure of primary and reinsurance covers
- Data availability and reporting delays

L&H claims

in EUR m.



Claims development



Source: Coronavirus Pandemic (Covid-19) - Our World in Data

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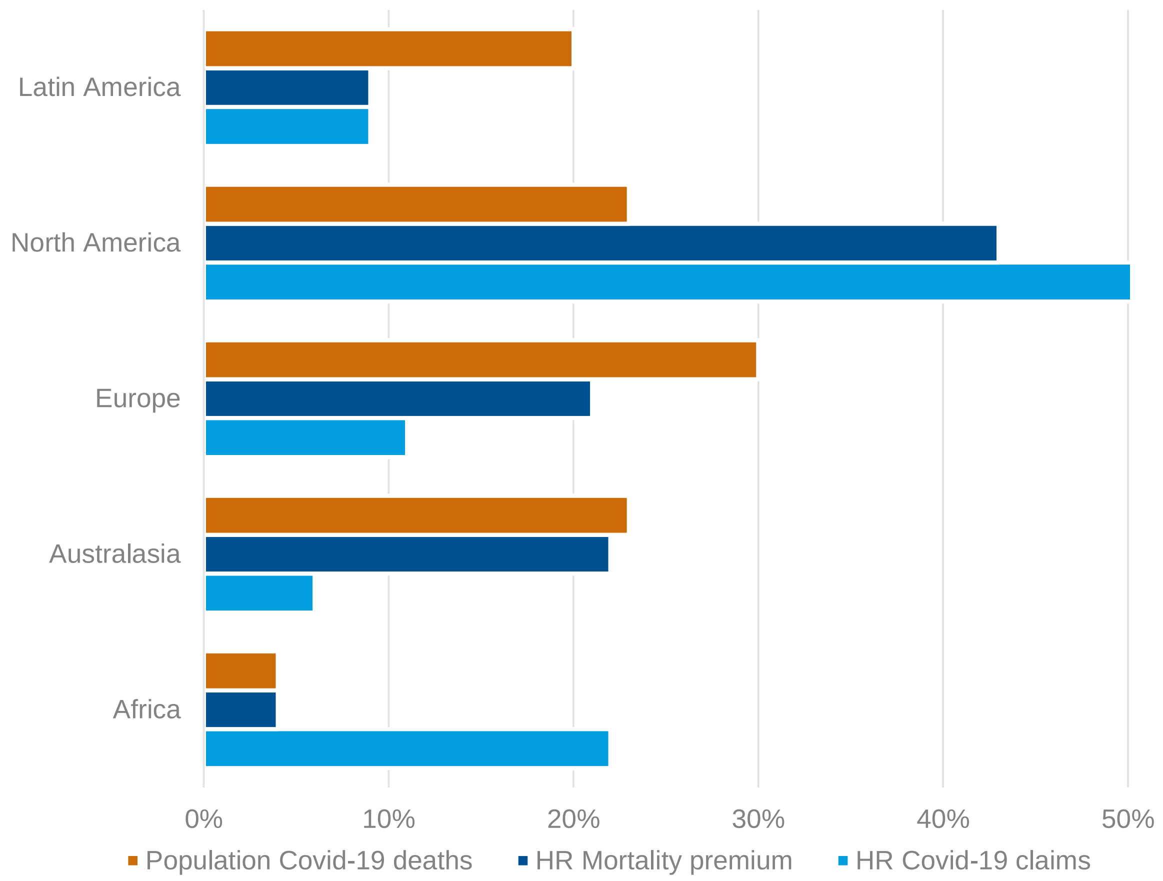
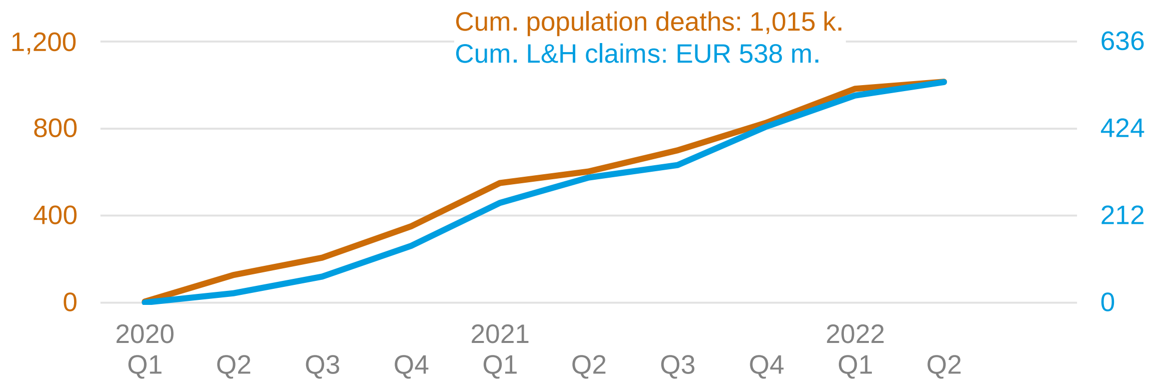
Development of regional cumulative population Covid-19 deaths

Quality of proxy for Hannover Re‘s cumulative Covid-19 claims varies by region

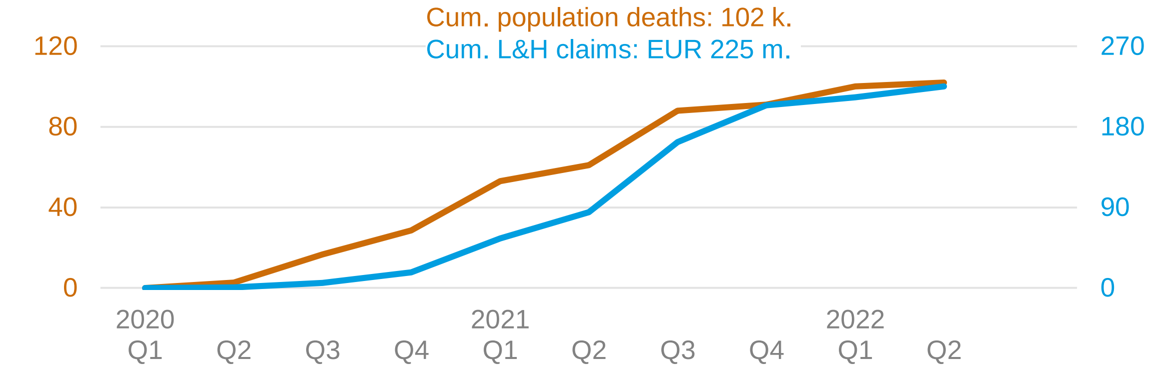
Share by region until 2022H1



Claims development



Claims development



Source: Coronavirus Pandemic (Covid-19) - Our World in Data

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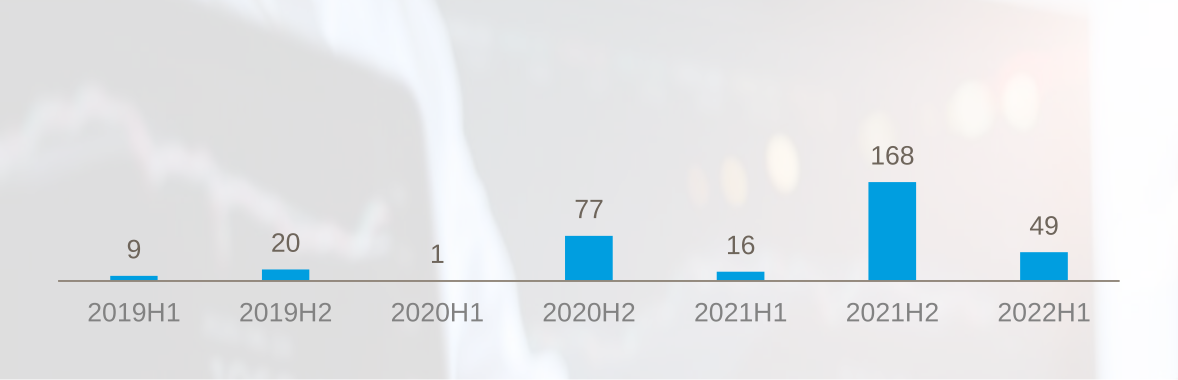
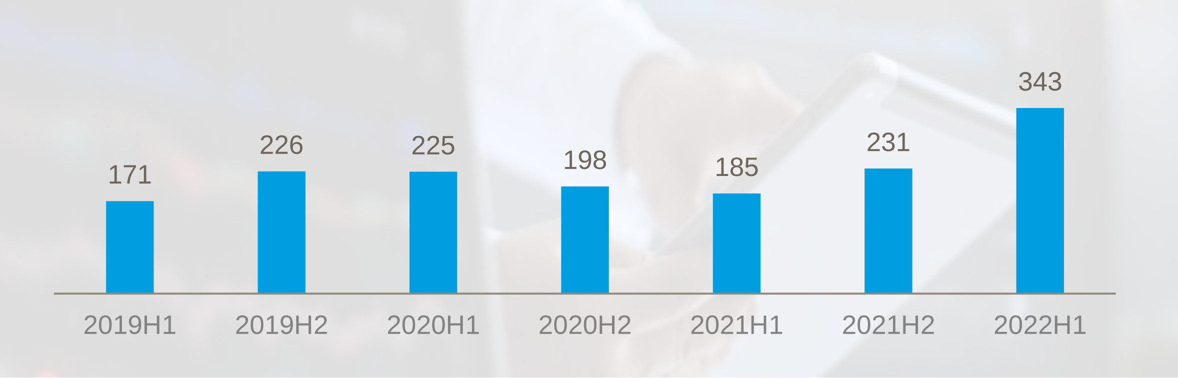
Strong contribution from non-negatively affected business
Financial impact of 2nd order effects difficult to estimate

Non-negatively affected business, EBIT in EUR m.

Longevity



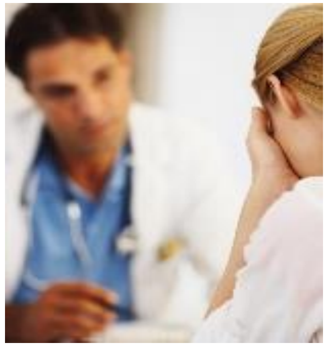
Financial Solutions



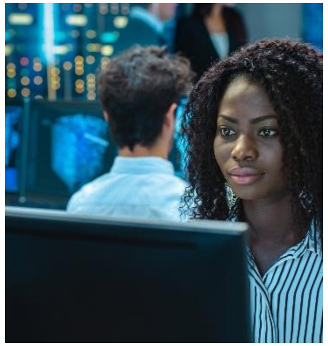
2nd order effects

Economic downturn

Long Covid



No reported claims



Wrongly reported claims

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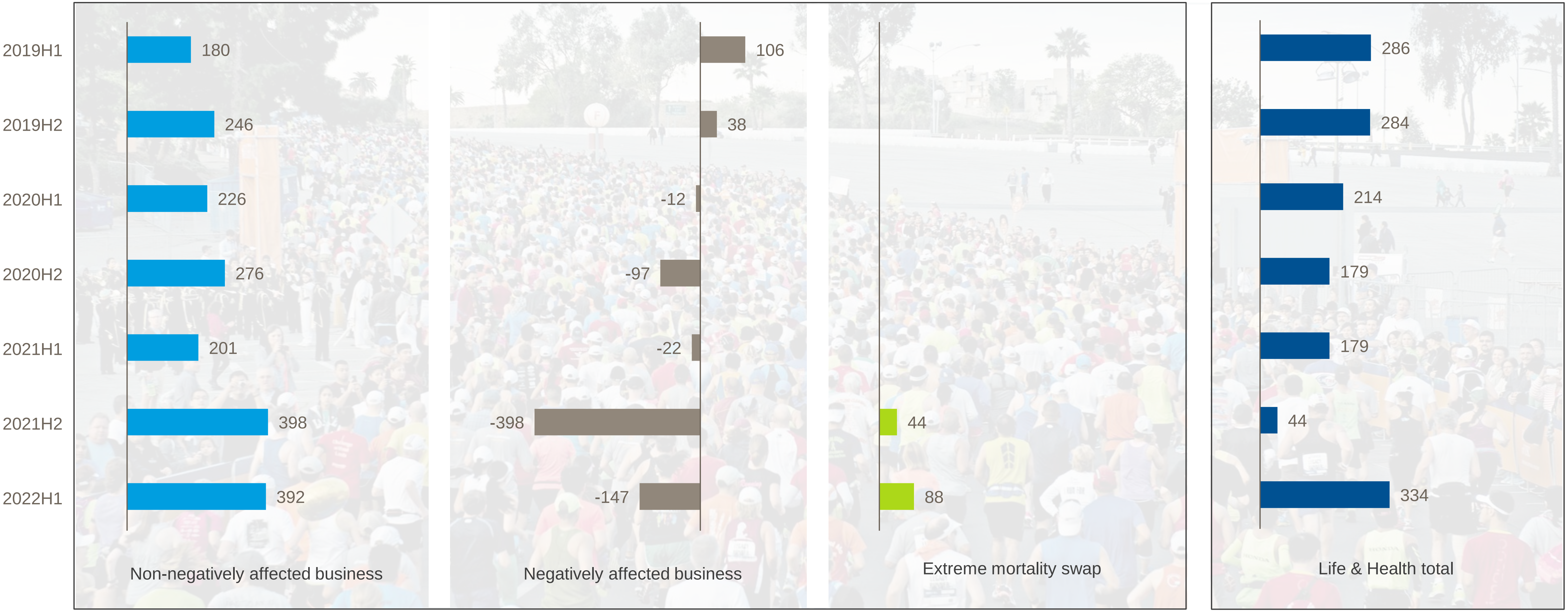
Non-negatively affected business and extreme mortality swap

More than compensate the losses from Covid-19

EBIT contribution, EUR m.



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3 Conclusions & key takeaways

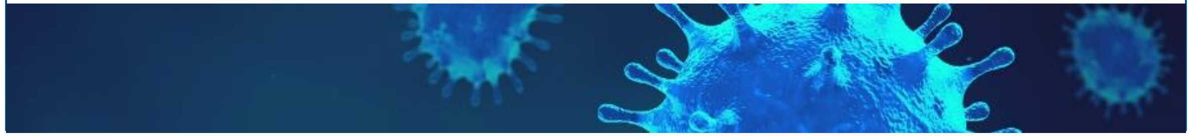
There are various options
To enhance further resilience against future pandemics

- Shorten rate guarantees for pandemic-exposed product lines
  – Refrain from offering whole of life guarantees for mortality & morbidity
- Focus on new opportunities from non-negatively affected lines of business
  – Increase offerings in financial solutions & longevity
- Strengthen data analytics capabilities
  – Validate and back test the internal pandemic model to further optimise diversification

Key takeaways

Pandemics

- Various pandemic outbreaks have been observed
- Most were caused by viruses not bacteria
- Different age groups were / are affected
- Effective risk management is key



L&H business

- 1,037 EUR m. cumulative Covid-19 claims as at 2022H1
- Claims occurred not always in line with mortality exposure
- Data quality varies from region to region
- Risk management shown to be effective

Conclusions

- Occurrence of pandemics must be expected
- Diversification is of utmost importance
- Data analytics is essential

Life and health reinsurers do have options to further increase their resilience against future pandemics.

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IFRS 17 / IFRS 9

A first glance

Clemens Jungsthöfel, Chief Financial Officer
25th International Investors' Day 2022
London, 6 October 2022

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Agenda

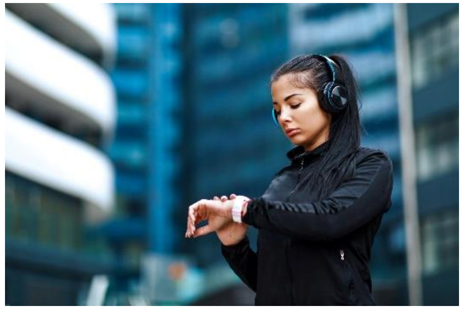
1
Introduction IFRS 17 / 9

2
Approach to transition

3
Impact on equity, earnings and KPIs

4
Timeline

5
Key takeaways



1 Introduction IFRS 17 / 9

IFRS 17 significantly changes the structure of the balance sheet
IFRS 9 changes the classification and measurement of financial instruments

IAS 39 / IFRS 4 (US GAAP)

Assets

- Retro share in technical provisions
- Deferred Acquisition Costs
- Receivables from reinsurance business
- Investments IAS 39
  - Amortised Cost
    - Held to Maturity
    - Loans, Receivables
  - Fair Value
    - Available for Sale
    - Fair Value Option/ Trading

Liabilities

- Equity
- Technical provisions for insurance liabilities
  - Provisions for unearned premiums
  - Premium reserve
  - Provisions for premium refund
  - Other technical provisions
  - Provision for outstanding claims
- Other liabilities

IFRS 9 / 17

Assets

- Retro-LRC
- Retro-LIC
- Investments IFRS 9
  - Amortised Cost
  - Fair Value OCI
  - Fair Value PL

Liabilities

- Equity
- "Insurance Contract Liability"
  - LRC without Loss Component
    - Cash flows
    - Discounting
    - Risk adjustment
    - CSM
  - LRC Loss Component
  - LIC
    - Cash flows
    - Discounting
    - Risk adjustment
- Other liabilities

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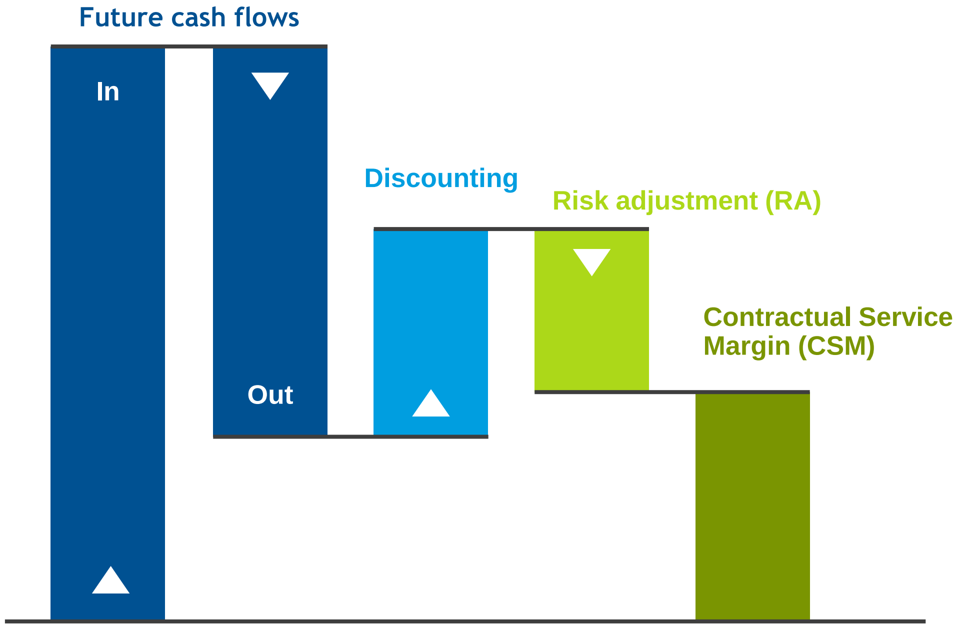
IFRS 17 - Full adoption of GMM allows to steer business on a consistent basis

Ensuring transparency and bridging the GA(A)P to economic view

Full adoption of General Measurement Model (GMM) for entire business (P&C and L&H)



Valuation methods and rationale

- Cash flows and economics of reinsurance business will remain unchanged
- IFRS 17, in particular **GMM** as default model, is complex with significantly increased data and other requirements
- However, we have taken a broader, long-term view and aim to use the change in accounting as **transformational** in order to
  - increase transparency on **earning patterns** and **value creation**, incl. comparability between lines of business
  - improve alignment with both Solvency II and internal performance measures (IVC: Intrinsic Value Creation)
  - review our data and IT infrastructure, streamline processes and increase automation
  - solve systematic IFRS4 accounting mismatches and reward asset-liability management efforts
  - improve steering and managing of our portfolios
- Adoption of **OCI option** for large parts of our portfolio to match investment valuation will reduce volatility from interest rate movements
- **Prudent reserving approach** will be maintained and – together with CSM and RA at transition – help to manage potential increased volatility

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IFRS 9 - Fundamental revision of accounting rules for financial instruments
Higher share of assets at Fair Value through P&L

Classification and valuation

- Majority of investments in **scope of IFRS 9** (direct real estates out of scope)
- IAS 39 **categories** HtM, L&R, AfS, FVPL will change to
  - Amortised Costs (AC)
  - Fair Value through P&L (FVPL)
  - Fair Value through OCI (FVOCI)
  - Fair Value through OCI w/o recycling (FVOCI non-recycling)
- Reduced flexibility in assigning financial instruments to valuation categories (**“SPPI”** criteria)
- Business model **„Hold & Sell“** has been applied, i.e. most financial instruments **continue to be classified as FVOCI** (~ 93%)
- **FVPL** volume rises significantly
- **Expected Credit Loss** (ECL) becomes new P&L component
- Existing **currency accounting mismatch** (monetary vs. non-monetary items) will be mitigated with changes in FV of investment funds (incl. Private-Equity, Real-Estate, fixed-income funds and the respective f/x effects) now being recognised in P&L (previously OCI)
- Minor effect on **equity** at transition (amortised costs instruments)

SPPI = Solely payment of principle interest

Assets categorised Fair Value P&L

- Main asset classes: Private-Equity, Real-Estate, fixed-income funds

IAS 39	**IFRS 9**
<1%	~7.5%

Introduction of Expected Credit Loss (ECL)

- ECL is measured at acquisition for all fixed-income instruments categorised Amortised Cost or Fair Value OCI
- In case of a significant change in credit quality, probability of default changes from 1 year to remaining maturity

Stage 1	**Stage 2**	**Stage 3**
Expected loss within one year	Expected loss until maturity	Impairment (based on market value)

2 Approach to transition

somewhat different

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Our transition is focused on ensuring sustainable future earnings

IFRS 17 - Approach to transition

How to measure in-force business when applying IFRS 17

Impracticable to use the full retrospective approach?

- Yes → Full Retrospective Approach FRA
- No → Modified Retrospective Approach MRA
- No → Fair Value Approach FVA

Business with application of FVA has biggest impact in transition

- The CSM or loss component of the LRC at the transition date is determined as the difference between the fair value of a group of insurance contracts at transition and the fulfilment cash flows measured at that date
- IFRS 13 defines fair value as “the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date”

Transition principles

- Hannover Re has used all available approaches at transition: full retrospective (FRA), modified retrospective (MRA) and fair value approach (FVA)
- Main limitation for FRA (“impracticability”) is usually data availability (e.g. segmentation, granularity, initial recognition)

Transition to IFRS 17 generally does not change the economic assumptions, but results in an unlocking of IFRS 4 assumptions (best estimate liability and interest rates)

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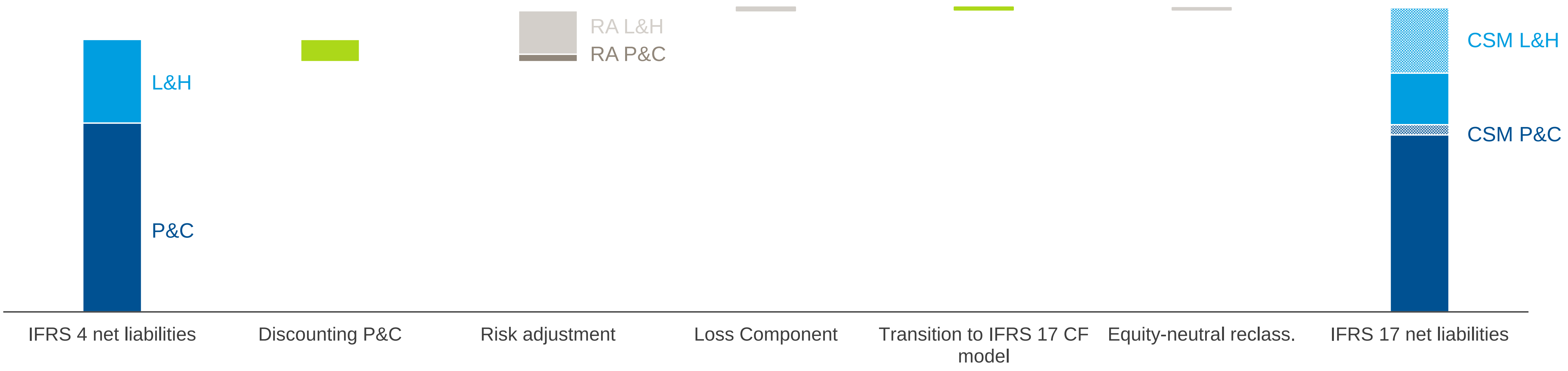
Our transition is focused on ensuring sustainable future earnings

IFRS 17 - Approach to transition

Revaluation of net liabilities (illustrative)



HR Transition to IFRS 17 enables economic measurement of net liabilities and establishes substantial profit / risk margins to ensure sustainable future earnings

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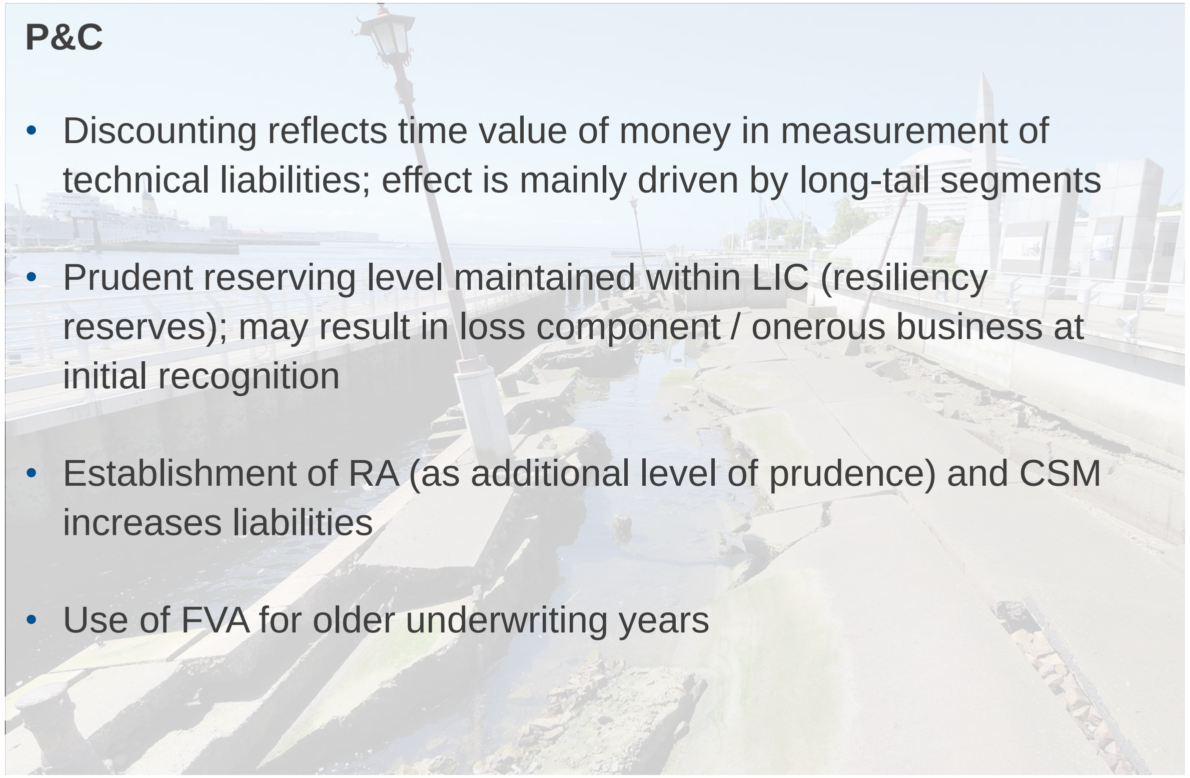
Ensuring transparency and bridging the GA(A)P to economic view

IFRS 17 - Approach to transition

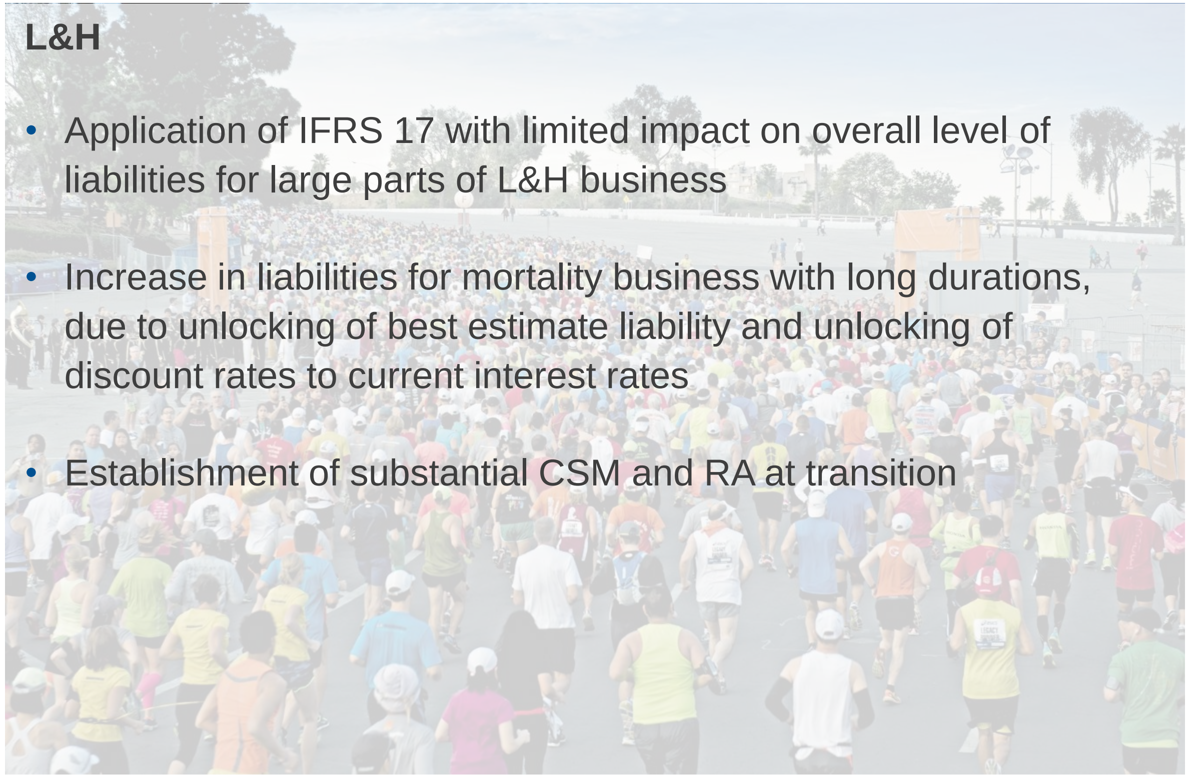


P&C

- Discounting reflects time value of money in measurement of technical liabilities; effect is mainly driven by long-tail segments
- Prudent reserving level maintained within LIC (resiliency reserves); may result in loss component / onerous business at initial recognition
- Establishment of RA (as additional level of prudence) and CSM increases liabilities
- Use of FVA for older underwriting years

Prudent reserving approach maintained

Discounting effect will be more pronounced in 2022/23 due to higher interest rates



L&H

- Application of IFRS 17 with limited impact on overall level of liabilities for large parts of L&H business
- Increase in liabilities for mortality business with long durations, due to unlocking of best estimate liability and unlocking of discount rates to current interest rates
- Establishment of substantial CSM and RA at transition

No changes in economic assumptions at transition, impact on liabilities driven by transition principles

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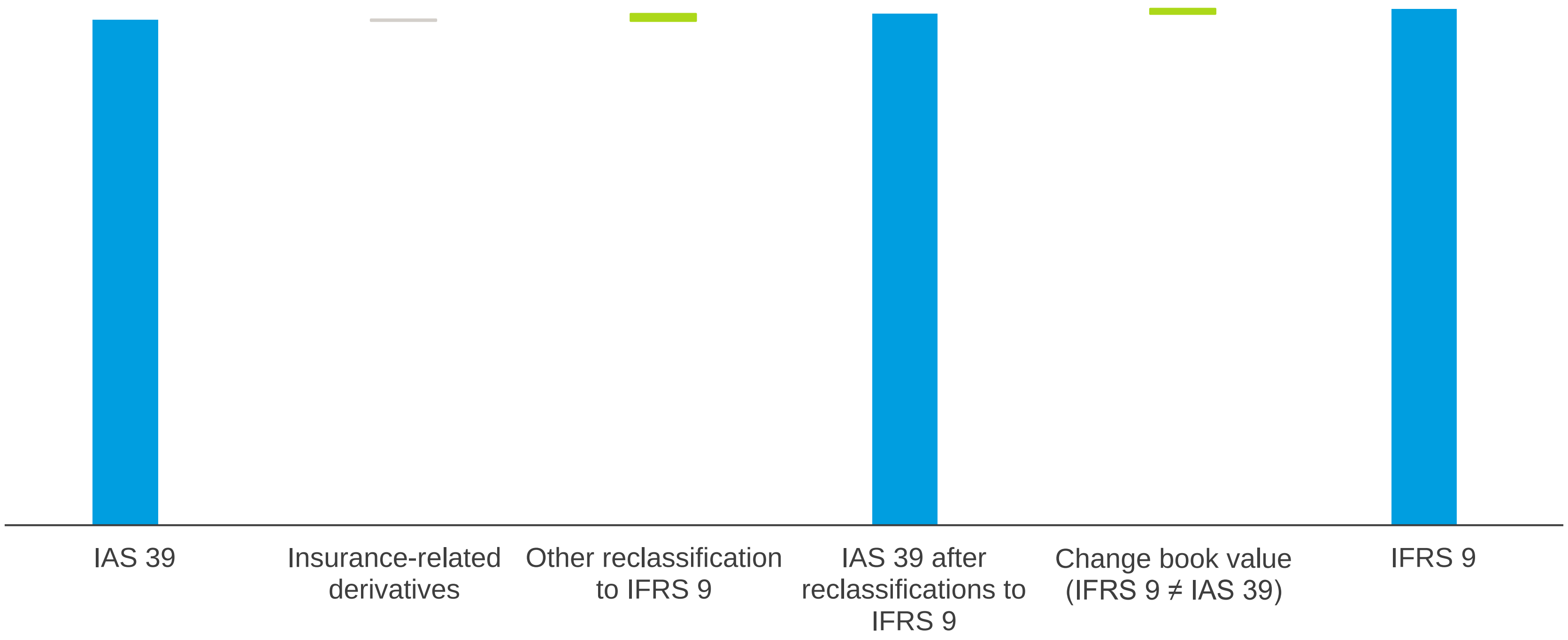
Investments: Limited impact on asset volume from change to IFRS 9

Revaluation of investments (illustrative)



Insurance-related derivatives will be part of LRC

Change in book value includes IAS39 off-balance sheet valuation reserves for HTM and loans

Increased share of assets at Fair Value P&L potentially results in higher P&L volatility

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3 Impact on Shareholders' Equity, future earnings and KPIs

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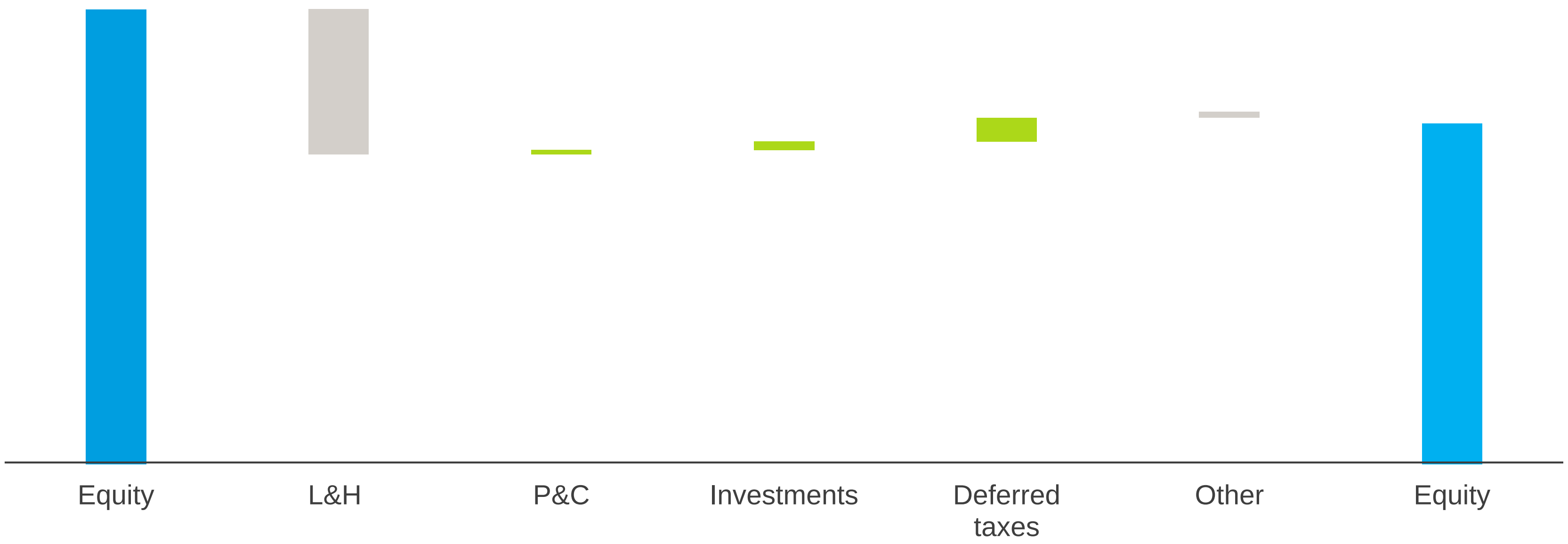
Shareholders' equity: Discounting proves more meaningful economic view
Interest rate changes 2022 clearly demonstrate accounting mismatch under IFRS 4

Revaluation of equity (illustrative)



Unlocking of best-estimate liabilities and interest rates increases liabilities in L&H

Positive impact from discounting of P&C liabilities partly offset by establishment of CSM and RA

Limited impact from IFRS 9

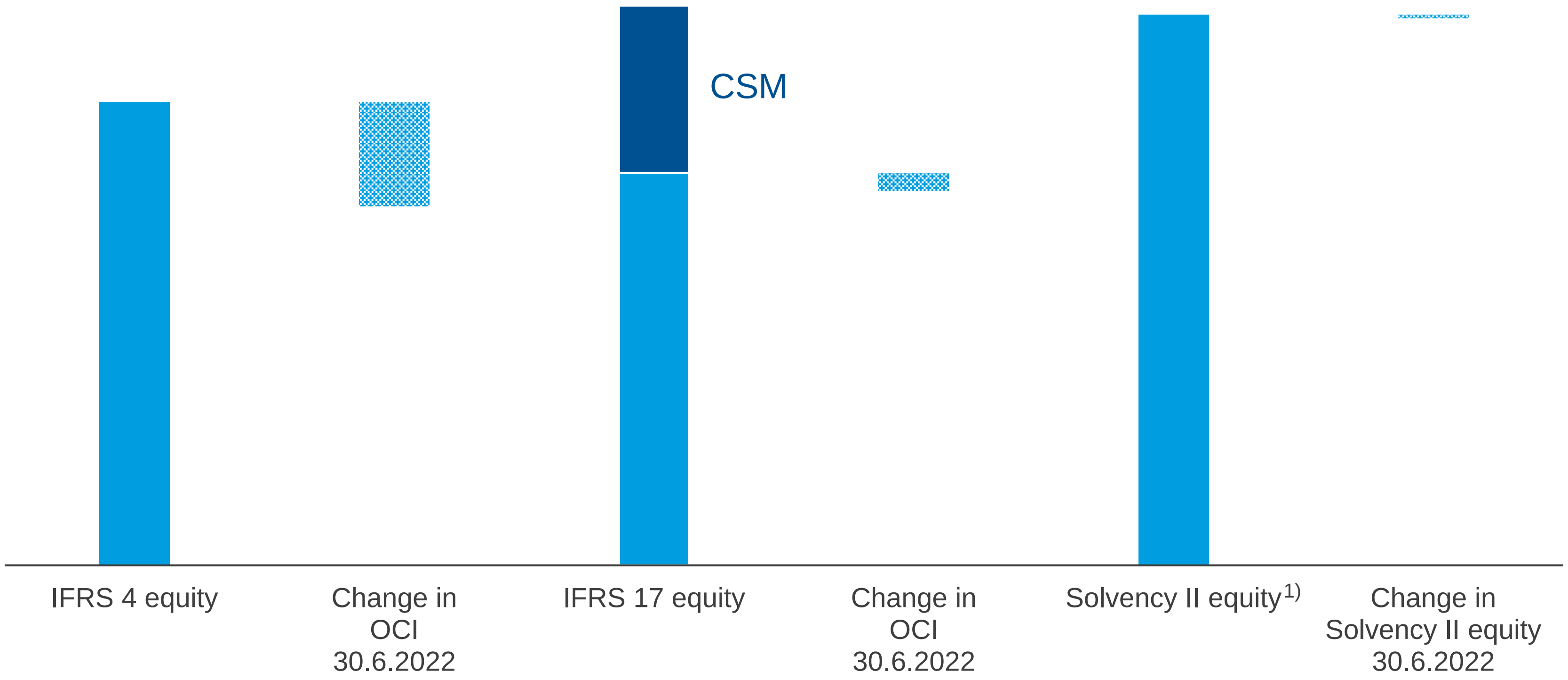
Change in Equity from discounting significantly smaller with higher interest-rate level when IFRS 17 will become effective in 2023

At transition insurance liabilities will increase and equity decrease due to risk adjustments and CSM, which will contribute to earnings over time

IFRS 17 equity + CSM at similar level to Solvency II equity

Accounting mismatch for interest-rate movements largely mitigated

Equity (illustrative)



From an economic perspective shareholders' equity needs to be seen in conjunction with contractual service margin (CSM) and risk adjustment (RA)

Reduction in equity at transition (1.1.2022) will be by far more than compensated for by CSM and RA

Sum of equity and CSM (after tax) will be comparable to Solvency II equity

Development of OCI in 1H/2022 confirms more economic view of IFRS17

Financial leverage to be viewed in relation to shareholders' equity + CSM

1) Solvency II excess of assets over liabilities

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Transition approach expected to lead to sustainable earnings level

IFRS 17 income statement

Reinsurance revenue
Reinsurance service expenses
Net expenses from reinsurance contracts held
Reinsurance service result

Net finance income / expenses from reinsurance contracts issued
Net finance income / expenses from reinsurance contracts held
Net reinsurance finance result

Net income from investments under own management

Net currency result
Other income and expenses

EBIT
Tax
Net income

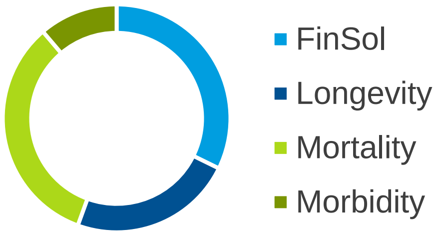
Reinsurance service result

- Actual vs. expected claims + expenses
- Release of CSM and RA
- Change in LIC (includes P&C reserve runoff)
- Loss component and release of loss component
- Deposit-accounting business in Financial Solutions will largely be recognised in reinsurance service result

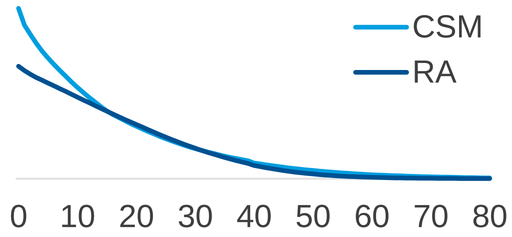
CSM
P&C ~ 15% / L&H ~ 85%

Risk adjustment
P&C ~ 15% / L&H ~ 85%

L&H CSM is well diversified



Release of L&H CSM and RA



P&C

- Well diversified by line of business and region
- Release of CSM largely within two years

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Potential KPIs

Return on equity

P&C combined ratio

Cost Ratio (gross)
+ Loss Ratio (gross)
+ Reinsurance Ratio
= Combined Ratio

EBIT growth

P&C and L&H

Solvency II ratio

xRoCA

P&C and L&H

Reinsurance revenue growth

CSM growth

New business CSM (incl. loss component)

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4 Timeline

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Timeline for further information

Dec 2022

Further details on IFRS 17 transition and future KPIs

FY 2022 results

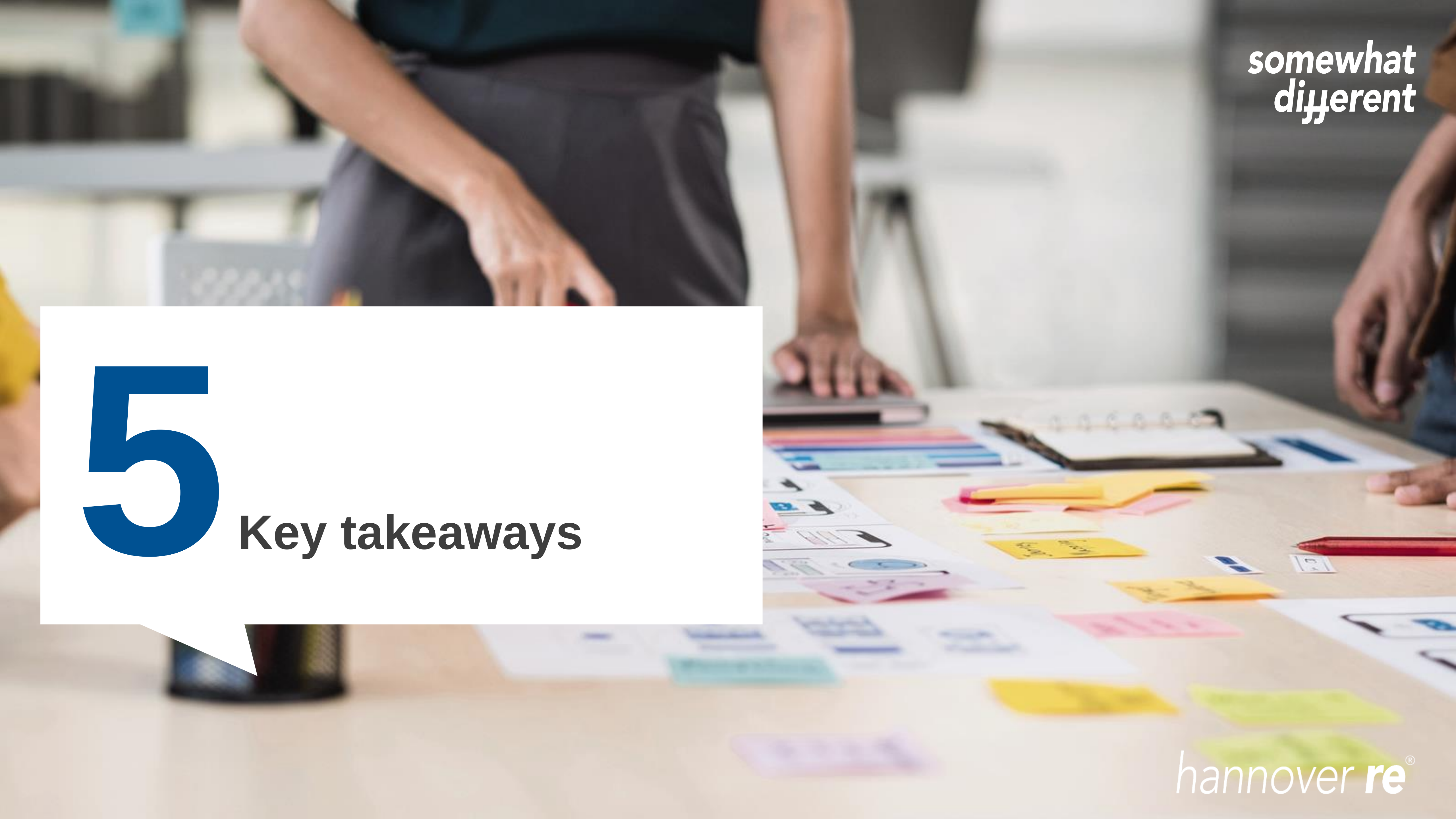
FY 2022 IFRS 4 reporting + IFRS 17 guidance for FY 2023

Q1/2023

First reporting according to IFRS 17

Investors' Day 2023

Publication of targets for new strategy cycle 2024 - 2026



5 Key takeaways

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Key takeaways

IFRS 17

- Enhancement of presentation and reporting will increase transparency
- Timing of profit recognition will change
  - Establishment of CSM and risk margin
  - No gain at inception, immediate recognition of onerous business
  - Profits will be recognised when earned
- Cash flows and economics will remain unchanged

Main implications IFRS 9

- Classification and hence valuation of asset classes will change
- Impairment rules will change

… for Hannover Re

- Overall limited impact on balance sheet and shareholders' equity
- > 90% of investments categorised as Fair Value OCI
- P&L volatility likely increases due to higher share of assets FVPL
- Minor impacts from introduction of Expected Credit Loss

Implications for Hannover Re

- Strategy and business model will be unaffected
- Strong capitalisation unchanged
- Dividend capacity (German GAAP) remains unchanged
- Prudent reserving approach in P&C will be maintained
- Equity + CSM at similar level to Solvency II equity
- Better reflection of value and earnings of L&H business
- Transformational benefits through review of data, processes, etc.

IFRS 17 will bring accounting view closer to economic view

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