

# Strategic positioning in a competitive market

Initiatives for long-term success

Ulrich Wallin, Chief Executive Officer

18th International Investors' Day Frankfurt, 14 October 2015



#### Property & Casualty reinsurance in a global perspective Hannover Re outperforms the market

#### Market size and concentration 2014



in bn. EUR	2010	2014	Δ	CAGR
Тор 10	62	76	14	5.3%
Top 11 - 50	38	37	-1	-0.5%
Other	59	75	16	6.1%
R/I market	159	188	29	4.3%
Hannover Re	6.3	7.9	1.6	5.7%

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Source: Own research (global market size based on estimate of total ceded premiums by primary insurers) Top 10: Munich Re, Swiss Re, Lloyd's, Hannover Re, Berkshire, SCOR, China Re, PartnerRe, Everest Re, KoreanRe

#### Concentration on the Top 10 proceeds, Top 11 - 50 stagnating

#### 1 Strategic positioning in a competitive market

#### Life & Health reinsurance in a global perspective Development of Hannover Re in line with the market

#### Market size and concentration 2014



in bn. EUR	2010	2014	Δ	CAGR
Тор 5	31	42	10	7.4%
Тор 6 - 10	9	12	3	7.6%
Top 11 - 50	5	3	-2	-11.5%
R/I market	45	57	12	5.9%
Hannover Re	5.1	6.5	1.4	6.1%

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#### Source: Own research

Top 10: Munich Re, Swiss Re, RGA, Hannover Re, SCOR, Berkshire (incl. GenRe), Great West Lifeco, China Re, Korean Re, Partner Re

## Concentration on the Top 5/Top 10 continues, Top 11 - 50 contracting

#### **Different cycles in different market segments** As a diversified reinsurer we can offset price pressures in specific markets

**Comparison of Cat business and German motor business** 



---Guy Carpenter-RoL ---Average insurance premium German motor liability

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#### As a worldwide, well diversified reinsurer we were ... ... and remain well positioned to cope with the current market environment

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Third-largest reinsurer in the world (bigger companies grow faster than smaller ones) yet fast and flexible enough to be innovative and able to react to market developments Value proposition and long-standing client relationship

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Diversification leading to reduced cost of capital and improved risk profile

Alternative capital not necessarily a threat but also a partner for our ILS and retro activities; better diversification a key differentiator

Favourable new business opportunities in P&C and L&H

We have always developed initiatives to get access to profitable growth

#### Good positioning of Hannover Re in the market

#### **Diversification is core value to clients and investors** Hannover Re has improved its diversification in the past decade



GWP 2014 by line of business/reporting category

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#### **High diversification reduces earnings volatility** EBIT by line of business/reporting category\*



### Hannover Re is well diversified within each risk category and has a well balanced asset and liability portfolio

 Risk capital for the 99.5% VaR (according to economic capital model)
 in m. EUR

 Underwriting risk property and casualty
 Premium (incl. catastrophe)
 2,079

 Underwriting risk property and casualty
 1,907
 3,101
 3,986



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## Profitable growth of our P&C business group ... ... supported by past initiatives

	2014	
	<ul> <li>Personal lines initiative Asia</li> </ul>	
	2013	
	► UK motor XL	
	2009	
	Credit/Surety	
	2008	
	► ILS	
	2006	
	► ReTakaful	
	2000	
	Facultative reinsurance	
	1995	
	Structured R/I	
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\* Based on previous segment reporting (GWP: Group excl. L&H, C/R: P&C R/I)



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#### Strategic positioning in a competitive market

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## High profitability safeguarded by conservative reserving Continued attractive business opportunities despite competitive markets



P&C EBIT/reserve redundancies in m. EUR

--Reserve redundancies as % of total P&C reserves

\* Redundancy of loss and loss adjustment expense reserve for its property & casualty business against held IFRS reserves, before tax and minority participations. Towers Watson reviewed these estimates - more details shown in the appendix

- Rating and long-standing client relationships are key, Hannover Re is an attractive counterparty
- Profitable growth opportunities in reinsurance with continued selective approach in underwriting
- Profitability is safeguarded by continued high-quality portfolio and conservative reserving in past years
- Growth opportunities in 2015:
  - Currency effects, large individual treaties, Agro, Asia (esp. motor business), ILS, US Casualty

## Previous initiatives supporting successful development in L&H



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## Strong VNB points to increasing profits in the future VNB 2013 and 2014



Strategic positioning in a competitive market 11

#### Stable ordinary investment income despite declining Rol ... ... on the back of an increased investment volume



#### Rationale for the 2015 profit guidance Long-term success in a competitive business

We expect a further increase in profits from our Life & Health business group



- Continued high-quality portfolio due to selective underwriting and concentration on renewal business
- Due to IFRS accounting constraints it will be difficult to further increase the confidence level of our loss reserves, which may result in a positive effect on our C/R
- Improved terms and conditions of our retrocessions should have a positive effect on our net margin

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We expect to achieve a largely stable absolute NII on the back of an increased investment volume (from a further positive cash flow) despite a deteriorating Rol



We expect to maintain our competitive advantage of low administrative expenses

Subject to no major distortions in capital markets and/or major losses in 2015 not exceeding approx. EUR 690 m.

#### We are confident of achieving the guidance

## **Profit growth largely mirrors capital growth** Attractive shareholder return



#### Strategic positioning in a competitive market 14

#### Reinsurance market conditions will improve ... ... when the RoE is sufficiently low

Development of return on equity and Guy Carpenter Global Property Cat RoL Index



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---Return on equity ---GC Global Property Cat RoL Index

#### Source: Guy Carpenter

Return on equity based on company data (Top 10 of the Global Reinsurance Index (GloRe) with more than 50% reinsurance business), own calculation

## Medium-term trends affecting the reinsurance sector

Intense competition	Pressure on investment returns will continue to be challenging
Strong capitalisation/abundant capacity	Prevailing low yield environment

Increasing pressure for reinsurers to achieve attractive earnings promised to shareholders

Continued solid demand for reinsurance, based on the ability to reduce the volatility of earnings and regulatory capital requirements of primary insurers



Hannover Re is positioned to achieve its medium-term earnings growth target

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## Group risk management update

On track for Solvency II introduction

Eberhard Müller, CRO, Group Risk Management Dr. Andreas Märkert, General Manager, Group Risk Management

18th International Investors' Day Frankfurt, 14 October 2015



## Agenda

- Update on P&C claim reserves
- Risk governance
- Capital monitoring and capitalisation update
- Internal model approval for Solvency II and beyond
- Sources of risk and its changes in 2014

#### **Two segments of reserves in our balance sheet** Recent figures from year-end 2014



#### Property & Casualty weight 58%, Life & Health stable at 42%

2 Group risk management update

## Well diversified gross Property & Casualty loss reserves ...



\* As of 31 December 2014, consolidated, IFRS

#### across entities and countries

- Group-wide P&C reserve study (internal and external)
  - Hannover Re/E+S Rück. Canada, France, Bahrain / Takaful, Sweden, Bermuda
    - calculations by Group's own actuaries: EUR 17,012 m. (82%)
  - Australia, Malaysia, Shanghai
    - by external appointed actuaries: EUR 917 m. (4%)
  - UK(IICH), Ireland, South Africa
    - by HR Group's own actuaries: EUR 2,869 m. (14%)

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#### Group risk management update 3

#### **Internal reserve studies 2009 - 2014 reviewed** by Towers Watson show increasing redundancies\*

For the HR Group, over the last 6 years on average 2.6% of the net earned loss ratio for P&C business is due to net reserve redundancy increases in m. EUR

Year	Redundancy	Increase redundancy	Effect on loss ratio	P&C premium (net earned)
2009	867	276	5.3%	5,230
2010	956	89	1.6%	5,394
2011	1,117	162	2.7%	5,961
2012	1,308	190	2.8%	6,854
2013	1,517	209	3.1%	6,866
2014	1,546	29	0.4%	7,011
2009 - 2014 total		955		37,316
2009 - 2014 average		159	2.6%	6,219

\* Redundancy of loss and loss adjustment expense reserve for its non-life insurance business against held IFRS reserves, before tax and minority participations. Towers Watson reviewed these estimates - more details shown in slide V (appendix)

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#### No change in reserving policy in 2014

#### Reported loss triangles for HR/E+S ... Reconciliation to our balance sheet

in m. EUR

No.	Line of business	Total reserves U/Y 1979 - 2002	U/Y 1979 - 2002 in % of HR Group	Total reserves U/Y 2003 - 2014	U/Y 2003 - 2014 in % of HR Group
1	General liability non-prop.	600	2.9%	4,308	20.7%
2	Motor non-prop.	464	2.2%	1,743	8.4%
3	General liability prop.	234	1.1%	1,781	8.6%
4	Motor prop. 170		0.8%	746	3.6%
5	Property prop.	prop. 24		1,092	5.2%
6	Property non-prop.	13	0.1%	1,011	4.9%
7	Marine	38	0.2%	968	4.7%
8	Aviation 225		1.1%	878	4.2%
9	Credit/surety	40	0.2%	881	4.2%
	All lines of business	1,808	8.7%	13,408	64.5%

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As at 31 December 2014, consolidated, IFRS figures

#### ... represent about 3/4 of our gross carried reserves

## **Data description and information**

Understanding the data is crucial for interpretation, analysis and results!

- Statistical gross reported loss triangles based on cedents' original advices (paid and case reserve information)
- Converted to EUR with exchange rates as at 31 December 2014
- Figures in triangles do not include business written at branch offices and subsidiaries
- Data on underwriting-year basis
- Data are combined triangles for companies HR and E+S Rück

### **Reported claims triangle for HR/E+S** Total (~2/3 of HR Group reserves shown in 9 individual triangles)

						Statistical	data (as p	provided by	cedents)						Booke	ed data	
U/W year	IFRS earned premium	12	24	36	48	60	72	84	96	108	120	132	144	Ultimate loss ratio	Paid losses	Case reserves	IBNR balance
2003	3,842	29.4%	38.6%	41.4%	43.4%	44.5%	45.2%	45.8%	46.4%	46.5%	47.3%	47.3%	47.4%	51.3%	42.2%	4.5%	4.5%
2004	3,515	30.6%	44.8%	48.5%	50.6%	52.5%	53.3%	54.0%	54.2%	54.7%	55.2%	55.2%		61.1%	50.2%	5.0%	5.9%
2005	3,797	54.8%	72.9%	78.2%	81.0%	83.0%	84.3%	85.0%	85.6%	85.7%	85.9%			93.3%	81.1%	5.0%	7.2%
2006	3,623	29.8%	38.5%	41.5%	44.1%	45.5%	46.9%	47.4%	47.9%	47.9%				57.5%	42.4%	5.6%	9.6%
2007	3,558	35.2%	48.6%	53.5%	56.6%	59.0%	60.8%	62.7%	64.5%					75.6%	54.8%	9.6%	11.2%
2008	3,648	36.4%	52.1%	57.5%	60.2%	62.1%	64.2%	65.1%						80.3%	53.3%	10.7%	16.2%
2009	3,863	30.4%	43.6%	48.4%	51.0%	52.1%	53.0%							70.1%	43.5%	8.9%	17.8%
2010	4,088	34.3%	48.7%	52.5%	55.7%	58.1%								80.0%	45.7%	12.2%	22.1%
2011	4,404	35.1%	49.7%	54.9%	57.6%									80.9%	45.5%	11.2%	24.3%
2012	4,634	35.6%	52.1%	54.9%										79.1%	41.7%	12.9%	24.5%
2013	4,607	36.5%	47.3%											80.1%	29.5%	17.8%	32.9%
2014	2,814	24.5%												79.0%	12.2%	13.6%	53.2%





## **Reserving risk is reflected in the variation in ultimate loss ratios** Total (~2/3 of HR Group reserves shown in 9 individual triangles)

U/Y	Ultimate loss ratio 2008	Ultimate loss ratio 2009	Ultimate loss ratio 2010	Ultimate loss ratio 2011	Ultimate loss ratio 2012	Ultimate loss ratio 2013		Ultimate loss ratio 2014	Paid losses 2014	Case reserves 2014	IBNR balance 2014
2003	54.8%	57.1%	54.8%	53.5%	52.7%	52.5%		51.3%	42.2%	4.5%	4.5%
2004	66.9%	65.8%	65.1%	63.8%	62.8%	62.6%	>	61.1%	50.2%	5.0%	5.9%
2005	98.9%	96.2%	96.2%	95.8%	94.1%	92.7%		93.3%	81.1%	5.0%	7.2%
2006	66.2%	65.2%	63.3%	62.1%	60.9%	59.5%		57.5%	42.4%	5.6%	9.6%
2007	79.5%	80.2%	78.3%	77.1%	77.5%	77.2%		75.6%	54.8%	9.6%	11.2%
2008	85.8%	84.8%	83.2%	84.1%	81.8%	80.9%		80.3%	53.3%	10.7%	16.2%
2009		78.8%	78.3%	75.8%	73.1%	72.7%		70.1%	43.5%	8.9%	17.8%
2010			81.2%	84.1%	81.4%	78.9%	>	80.0%	45.7%	12.2%	22.1%
2011				85.6%	82.4%	81.9%		80.9%	45.5%	11.2%	24.3%
2012					89.1%	83.1%		79.1%	41.7%	12.9%	24.5%
2013						82.8%		80.1%	29.5%	17.8%	32.9%
2014								79.0%	12.2%	13.6%	53.2%

As at 31 December 2014 (in m. EUR), consolidated, IFRS, development in years

#### **Governance supports centralised risk management approach** System aligned with Solvency II requirements

**Supervisory Board** Advising and supervising the Executive Board in its management of the company, inter alia with respect to risk management, on the basis of the Supervisory Board's Rules of Procedure **Executive Board** Overall responsibility for Group-wide risk management and definition of the risk strategy, 2<sup>nd</sup> line of defence 2<sup>nd</sup> line of defence-3<sup>rd</sup> line of defence **Risk Committee** Operational risk management, monitoring and coordinating  $\leftarrow$ body as well as implementation and safeguarding of a consistent Compliance Group-wide risk management culture function Chief Risk **Group Risk** Actuarial Monitoring of Management Officer function areas where mis-Responsibility for **Risk monitoring** Ensures adequacy conduct can result holistic risk monitoring across the Group of the methods used **Group Auditing** in civil actions or across the Group and underlying as a whole and the Processcriminal/ as a whole and the business groups of models in relation  $\leftarrow$ administrative independent all material risks business groups of to calculation of the proceedings and Group-wide all material risks from the company technical provisions monitoring on from the Group perspective behalf of the perspective Executive Board supported by local supported by local supported by local supported by local actuarial functions compliance functions 1<sup>st</sup> line of defence Subsidiaries, branches, service companies, representative offices as well as treaty/ regional and service divisions within the business groups of Property & Casualty  $\leftarrow$ reinsurance, Life & Health reinsurance and investments Risk steering and original risk responsibility for risk identification and assessment on the divisional and company level

#### Hannover Re maintains strong capital position Strategic targets control capital basis and operational volatility

#### **Internal Model**

Economic capital in m. EUR	Q4/2014	Limit
Available (incl. hybrid capital)	12,444	
Required (VaR 99.97%)	7,787	
Excess	4,657	
Capital adequacy ratio	160%	100%

Probability of ruin	Q4/2014	Limit
Probability of a total loss of shareholders' equity	0.01%	0.3‰
Probability of a total loss of economic capital	< 0.01%	0.3‰



Probability of adverse earnings	Q4/2014	Limit
Probability of a negative net income	4.6%	10.0%
Probability of a negative EBIT	4.1%	10.0%

#### Rating agency view

- Standard & Poor's: AA- (Very Strong)
- AM Best: A+ (Superior)

#### **Regulatory view**

- Notional Solvency II: 253%
  - · According to approved partial internal model
  - Improved regulatory solvency under Solvency II compared to Solvency I
  - Solvency I Hannover Re SE: 136%

All figures as of Q4/2014

## Capital level for target ratings remains the key driver Despite partial recognition of internal model results



All figures as of Q4/2014

1) The available capital in the rating agencies' models and under Solvency II differs from Hannover Re's internal model due to different accounting models.

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2) Value-at-Risk at the security level 99.5% according to approved partial internal model

#### P&C claim reserves | Risk mgmt. & capitalisation | Appendix

## Internal model approval

#### Successful use of internal capabilities for regulatory requirements

- Hannover Re opted for a partial internal model
  - Including L&H and P&C underwriting risk, market risk and counterparty default risk
  - Excluding operational risk
- Model approval concluding a successful project
  - Almost 7 years of pre-application
  - Implementation of extensive governance and documentation processes including Pillar II (ORSA\*, key functions)
  - Model improvement due to continuous discussions on individual parameters
- Model results are independent from
  - Decisions on third-country equivalence, volatility and matching adjustment
  - Standard formula recalibration (excl. op. risk)

\* ORSA = Own Risk and Solvency Assessment

# Standard model with simplifications Standard model Undertaking specific parameters Partial internal model Full internal model Individual



# Solvency II preparation completed

Experienced employees due to early start of preparation phase

Pillar I:

Regulatory capital requirements remain a side constraint

- Solvency II capital basis very comfortable (253%)
- Flexible capital instruments in place incl. hybrid capital and retrocession
- Group internal capital allocation optimised on basis of new Solvency constraints
- Pillar 2:

Internal governance strengthened and aligned with Solvency II

- Extensive documentation and controls at reasonable expense
- Responsibilities with minimal conflict of interest
- Existing processes leveraged to produce ORSA and Solvency II actuarial report

Pillar III:

From test to production

- Test reporting completed
- Systems in place, extensions and further automation will be introduced in-line with closing dates
- Existing processes leveraged to produce Regular Supervisory Reporting (RSR)
- Significant disclosure content reported via IFRS annual statement
- Markets & Clients:

Solutions in place, further development supported by experienced staff

- Internal Solvency II training in place since 2010 with sections especially targeting underwriters
- Expert teams offer specific products suitable for Solvency II and similar solvency regimes

#### Well diversified across business groups Hannover Re's risk profile



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As at December 2014

#### Business growth supports diversification Other factors: model strengthening, changes in interest and fx rates

Required capital, VaR 99.97% in m. EUR	Q4/2014	Q4/2013	Delta	Delta mainly due to
Underwriting risk P&C	5,023	4,460	563	Business growth, decreasing interest rates, EUR weakening and model strengthening
Underwriting risk L&H	3,327	2,607	720	Business growth (mortality and longevity), decreasing interest rates and EUR weakening
Market risk	5,142	3,610	1,532	Model strengthening, increase in asset volume
Counterparty default risk	756	740	17	Increase in future positive cash flows from L&H
Operational risk	595	511	85	Increase in all business groups
Diversification	(5,687)	(3,905)	(1,782)	Diversified growth
Tax effects	(1,370)	(1,125)	(245)	Increase in pre-tax risk due to the reasons given above
Hannover Re Group	7.787	6.897	890	Diversified growth, interest and f/x rates, model strengthening

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Required capital at a confidence level of 99.97% (assumed AA-rating equivalence)

#### Well diversified within each business group Balanced asset and liability portfolio

Risk capital for the 99.5% VaR (according to economic capital model)



in m. EUR

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As at December 2014

somewhat diµerent

# Appendix
# About 46% related to general liability Driven by premium volume in recent U/Y

#### **Gross P&C reinsurance loss reserves**

EUR 15,516 m.



HR and E+S as at 31 December 2014, consolidated, IFRS figures

#### I Group risk management update

# Estimation system & bulk IBNR Roughly one half of own IBNR is self-made

#### "Home-made" IBNR

### EUR 15,516 m.



HR and E+S as at 31 December 2014, consolidated, IFRS figures

# **US/Bermuda liability non-proportional: looks promising** On average still ~6%pts higher ULRs than mature years suggest



in %



■ ULR (as 12/2014) ■ + ■ realised + projected part to complete 13th-year paid ratio ■ ULR ("as if": 64% - 57% + ■ + ■)

# Individual aspects Special A&E<sup>1)</sup> reserves

- 2014 A&E reserves are prudent best estimates and exceed the corresponding internal reserve study estimates reviewed by Towers Watson<sup>2</sup>)
  - IBNR factor of 5.6 compared to 5.9 at previous year-end
  - Paid Survival ratio of 28.2 years remains at a high level

Financial year	Case reserves	HR additional reserves for A&E (in TEUR)	Total reserve for A&E (in TEUR)	3-year-average paid (in TEUR)	Survival ratio	IBNR factor = add. reserves/case reserves
2008	22,988	127,164	150,152	6,008	25.0	5.5
2009	26,216	171,363	197,579	8,130	24.3	6.5
2010	29,099	182,489	211,588	9,270	22.8	6.3
2011	28,422	193,957	222,379	8,574	25.9	6.8
2012	27,808	182,240	210,049	7,210	29.1	6.6
2013	28,839	170,805	199,643	6,224	32.1	5.9
2014	33,755	189,306	223,061	7,922	28.2	5.6

1) A&E = Asbestos & Environmental

2) More details of Towers Watson's review are shown in slide V (Appendix)

# **Details on reserve review by Towers Watson**

- The scope of Towers Watson's work was to review certain parts of the held loss and loss adjustment expense reserve, net of outwards reinsurance, from Hannover Rück SE's consolidated financial statements in accordance with IFRS as at each 31 December from 2009 to 2014, and the implicit redundancy margin, for the non-life business of Hannover Rück SE. Towers Watson concludes that the reviewed loss and loss adjustment expense reserve, net of reinsurance, less the redundancy margin is reasonable in that it falls within Towers Watson's range of reasonable estimates.
  - · Life reinsurance and health reinsurance business are excluded from the scope of this review.
  - Towers Watson's review of non-life reserves as at 31 December 2014 covered 97.9% / 97.8% of the gross and net held non-life reserves of €20.8 billion and € 19.7 billion respectively. Together with life reserves of gross €3.3 billion and net €3.0 billion, the total balance sheet reserves amount to €24.1 billion gross and €22.7 billion net.
  - The results shown in this presentation are based on a series of assumptions as to the future. It should be recognised that actual future claim experience is likely to deviate, perhaps materially, from Towers Watson's estimates. This is because the ultimate liability for claims will be affected by future external events; for example, the likelihood of claimants bringing suit, the size of judicial awards, changes in standards of liability, and the attitudes of claimants towards the settlement of their claims.
  - The results shown in Towers Watson's reports are not intended to represent an opinion of market value and should not be interpreted in that manner. The reports do not purport to encompass all of the many factors that may bear upon a market value.
  - Towers Watson's analysis was carried out based on data as at evaluation dates for each 31 December from 2009 to 2014. Towers Watson's analysis may not reflect development or information that became available after the valuation dates and Towers Watson's results, opinions and conclusions presented herein may be rendered inaccurate by developments after the valuation dates.
  - · As is typical for reinsurance companies, the claims reporting can be delayed due to late notifications by some cedants. This increases the uncertainty in the estimates.
  - Hannover Rück SE has asbestos, environmental and other health hazard (APH) exposures which are subject to greater uncertainty than other general liability exposures. Towers
    Watson's analysis of the APH exposures assumes that the reporting and handling of APH claims is consistent with industry benchmarks. However, there is wide variation in
    estimates based on these benchmarks. Thus, although Hannover Rück SE's held reserves show some redundancy compared to the indications, the actual losses could prove to be
    significantly different to both the held and indicated amounts.
  - Towers Watson has not anticipated any extraordinary changes to the legal, social, inflationary or economic environment, or to the interpretation of policy language, that might affect the cost, frequency, or future reporting of claims. In addition, Towers Watson's estimates make no provision for potential future claims arising from causes not substantially recognised in the historical data (such as new types of mass torts or latent injuries, terrorist acts), except in so far as claims of these types are included incidentally in the reported claims and are implicitly developed.
  - In accordance with its scope Towers Watson's estimates are on the basis that all of Hannover Rück SE's reinsurance protection will be valid and collectable. Further liability may
    exist for any reinsurance that proves to be irrecoverable.
  - Towers Watson's estimates are in Euros based on the exchange rates provided by Hannover Rück SE as at each 31 December evaluation date. However, a substantial proportion of
    the liabilities is denominated in foreign currencies. To the extent that the assets backing the reserves are not held in matching currencies, future changes in exchange rates may lead
    to significant exchange gains or losses.
  - Towers Watson has not attempted to determine the quality of Hannover Rück SE's current asset portfolio, nor has Towers Watson reviewed the adequacy of the balance sheet provisions except as otherwise disclosed herein.
- In its review, Towers Watson has relied on audited and unaudited data and financial information supplied by Hannover Rück SE and its subsidiaries, including information provided orally. Towers Watson relied on the accuracy and completeness of this information without independent verification.
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# Medium-term growth and profitability in L&H

Dr. Klaus Miller, Member of the Executive Board

18th International Investors' Day Frankfurt, 14 October 2015



# Drivers of future profitability and growth

Life & Health reinsurance



Increasing profits expected from our Life & Health business group

# **Overall positive impact from Scottish Re acquisition**

US mortality - review of past experience



Cumulative EBIT\* 2009 - 2014 in m. USD 150 69 111 100 50 42 0 Scottish Re New business Total \* Excl. impact from ModCo derivatives

### **Overall positive EBIT contribution**

- VoBA of USD 143 m. in 2009
- Deterioration in 2012 2014 due to
  - problematic pre 2005 underwriting years
  - increased suicide rates after the financial crisis
  - higher PLT lapse experience
- Positive effect from recapture in 2013

# Attractive profitability of the mortality solutions business

- Grow new profitable business
- In-force management actions for Scottish Re portfolio

# Improving profitability expected for US mortality business Increasing contribution from new business combined with in-force management

#### Net amount at risk



Collateral costs Scottish Re portfolio in m. USD



### Shift in business mix

- New profitable business is gradually improving the results
- Recapture 2013: positive IFRS effect USD 60 m. (pre-tax), overall MCEV effect of USD 182 m. (post tax)
- YRT rate increases: low- to mid-double-digit million positive effect p.a. from 2015/2016 onwards

### Reducing collateral costs

- Increase in 2012 due to expected contractual changes and growth in the LOC nominal amount
- Reduction of USD 18 m. p.a. in Q3/2013, full effect visible from 2014
- Reduction of USD ~30 m. p.a., full effect visible from 2016 onwards

# Adverse development in group business creates opportunities

Australian disability business - review of past experience



#### Technical result group business (TPD) in m. AUD



### in m. AUD > Legacy DII business

- In run-off since 2009, repricing only possible if the ceding company increases its rates
- Adverse claim termination experience caused valuation basis changes over the period, which led to reserve strengthening
- Current experience in line with the latest reserving level
- Group business (TPD)
  - Historically profitable business
  - Margins decreased, claims inflated (workers comp. coverage in AUS has been limited in recent years + claims farming by lawyers)

# Improving profitability expected for AUS disability business Increasing profits from group business and reduced impact from DII

Legacy DII – reserved loss recognition in m. AUD

2015 2016 2017 2018 2019 2020 2027 2022 2026 2026 2026 2026



### Net premium group business (TPD) in m. AUD 250 200 150 100 50 0 $20^{09}$ $2^{0^{10}}$ $2^{0^{11}}$ $2^{0^{12}}$ $2^{0^{13}}$ $2^{0^{14}}$ $2^{0^{156}}$ $2^{0^{166}}$ $2^{0^{16}}$

- Legacy DII business
  - Claim termination reserving basis appears to be at least adequate (even slightly conservative)
  - Premium rate increases possible in some cases
  - Claim audit resulted in closure of several large claims, positive impact on profitability
  - Treaty management results in an increase in premium payable
- Group business (TPD)
  - Significant repricing opportunities following the adverse industry results in 2013/2014
  - Portfolio is expected to return to profitable levels (and exceeding our minimum margin)

# Good performance for our EA business in recent years Longevity experience

### Actual/expected - Results for Enhanced Annuities (EA)



### Upward trend and smaller confidence intervals

# Good pension block business written since 2008 Longevity experience

### Actual/expected (lives) - 95% confidence interval



# Quoted Pension Block Transactions

Selective underwriting approach: 1 out of 7 deals is finally closed



#### Number of blocks quoted and written

### Increased marketing activities in non-UK markets

# Hannover Re L&H strategy Focus is key



- High growth markets
- Companies in transition
- Alternative distribution channels
- Underserved consumers
- 5 Hard-to-quantify risks

Vitality (2, 4, 5)

1

- Digitalisation (1, 3)
- Microinsurance (1, 3, 4)

# **Vitality** Getting and remaining healthy: a modern lifestyle

Incentivise members to improve quality of life and to reduce long-term medical costs

The world's largest scientific incentive-based wellness program



Encourage policyholders to actively manage & improve their health

# Vitality Impact on mortality, critical illness, lapses



# **Digitalisation in insurance**

Sale and underwriting support for life insurance policies



Integrated automatic process without compromising on business quality

# **ReFlex: a new generation of automated underwriting systems** Key features at a glance

Risk assessment across multiple products and lines of business

Full transparency – all rules are easily adaptable

Advanced reporting and analytical tools – standard reports and web-based dash boards

Fully multilingual and multicurrency enabled

Full migration of existing proprietary knowledge

**ReFlex - a construction kit for U/W solutions around the world** 

# **Growth potential in microinsurance in Asia and Oceania** Health microinsurance growing strongly



India

- Population in 2012: 1,236.7 m
- Estimated potential microinsurance market\* in 2012: 755.4 m.
- 14.7% of microinsurance potential covered
- 2010 2012 coverage CAGR 30.6%
- 66% of all microinsurance premiums of the Asian market
- Pakistan
  - Population in 2012: 179.1 m.
  - Estimated potential microinsurance market\* in 2012: 129.0 m.
  - 4.1% of microinsurance potential covered
  - 2010 2012 coverage CAGR 19.4%

Source: "The Landscape of Microinsurance in Asia and Oceania 2013", Munich Re Foundation \* People living on more than USD 1.25 but less than USD 4 / day

# We will continue on our growth path ...

... and deliver increasing profitability in the future

### Premium development

in m. EUR

#### 5-year CAGR: 7.4%





- Close to EUR 1.5 bn. of VNB over the last 5 years
- IFRS profits will additionally include the capital costs
- Additional profits come from a conservative calculation of the PVFP

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# From the CFO's desk

Investment update and German GAAP particularities

Roland Vogel, Chief Financial Officer

18th International Investors' Day Frankfurt, 14 October 2015



somewhat diµerent

# **Investment update**

# Asset allocation rather stable

Slight increase in governments and high-yielding bonds at expense of covereds

#### Tactical asset allocation<sup>1)</sup>

Investment category	2011	2012	2013	2014	1H/2015
Fixed-income securities	90%	92%	90%	90%	89%
- Governments	19%	19%	19%	21%	23%
- Semi-governments	23%	23%	20%	19%	19%
- Corporates	31%	33%	36%	36%	36%
Investment grade	29%	30%	33%	33%	32%
Non-investment grade <sup>3)</sup>	3%	3%	3%	3%	4%
- Pfandbriefe, Covered Bonds, ABS	16%	17%	15%	14%	12% <sup>2)</sup>
Equities	2%	2%	2%	2%	2%
- Listed	<1%	<1%	<1%	< 1 %	< 1 %
- Private Equity	2%	2%	2%	2%	2%
Real estate/real estate funds	2%	2%	4%	4%	4%
Others <sup>3)</sup>	<1%	1%	1%	1%	1%
Short-term investments & cash	5%	3%	4%	4%	4%
Total balance sheet values in bn. EUR	28.3	31.9	31.9	36.2	37.4

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 800.3 m. (EUR 716.3 m.) as at 30 June 2015

2) Of which Pfandbriefe and Covered Bonds = 80.6%

3) Reallocation of High Yield Funds from Others to Corporates - Non-investment grade adjusted retrospectively

# Portfolio yield supports ordinary income target ... ... but market yields lead to Rol dilution in line with expectation



\* Preliminary analysis as at 15 Aug 2015, excluding short-term investments and cash, governments according to economic view

# Maturity pattern 2015 and 2016 Heterogeneous maturing yield profile per asset class



- Simulation assumptions
  - Maturing fixed-income securities re-invested according to current market yields
  - (Re)investment of short-term investments (STIs) at current low returns
  - New cash flows in 2015 and 2016 reinvested at an average of 1.76% p.a.

# Ordinary return on investments declines at appr. 15 bps p.a. Return sensitivity at 10 bps per 100 bps yield movements

### Expected ordinary yield in 2015/2016 from assets under own management\*

in %



Analysis as at 30 June 2015

\* Excluding special effects from insurance-linked derivates 1H/2015

# Ordinary investment yield development ... ... follows our long-term projections

#### Ordinary investment income (average expectation) from assets under own management

Asset class <sup>2)</sup>	Allocation 06/2015	2015 E	2016 E
Governments	35%	2.2%	2.1%
Semi-governments	7%	3.4%	3.3%
Corporates	36%	3.5%	3.5%
Covered Bonds incl. ABS/MBS	13%	3.2%	2.8%
Short-term investments (ex Short Govies) <sup>1)</sup>	3%	1.0%	1.0%
Real Estate <sup>1)</sup>	4%	5.3%	5.3%
Private Equity <sup>1)</sup>	2%	6.0%	6.0%
Cash In - Second half 2015	+EUR 0,8 bn.	1.8%	1.8%
Cash In - 2016 <sup>3)</sup>	+EUR 1,2 bn.		1.8%
Total	EUR 37.4 bn.	3.0%	2.9%

1) Fixed approximation

2) Economic perspective deviating from accounting/legal perspective

3) Conservative projection

# Hannover Re's real estate portfolio



# Real estate quota of roughly 4% Current strategy defines a target quota of around 5%

### **Diversification of investment programs**



Analysis as of 30 June 2015



# Broad diversification through ...

... real estate sectors, risk-/ return styles, market maturity and manager

- Investments executed through three different managers
- Regional focus on mature and transparent markets
- Direct investments dominate with around ¾ of total portfolio (¼ funds)
- Quota is reflected in risk-/ return profile as well (lower risk ¾ vs. medium risk ¼)
- Diversification also through different real estate sectors with focus on office



# **Direct investments in Germany** Portfolio 1/3 with current budget of EUR 500 million

### **Allocation in Germany**



### Current market value: EUR 311.9 m.

Current market value: USD 617.5 m.

# **Direct investments in the US** Portfolio 2/3 with current budget of USD 700 million

### Allocation in the US



# **Direct investments in Central and Eastern Europe** Portfolio 3/3 with current budget of EUR 500 million

#### **Allocation in CEE**



### Current market value: EUR 336.2 m.
### Attractive performance over all budgets ... ... depending on market timing (entry, dispositions, etc.)

- Returns of real estate portfolios since inception\*
  - between 4.8% and 10.5% (funds) with investments since 2004
  - between 4.4% and 14.2% (direct) with investments since 2008
- Latest annual performance (2014) in line with expectations
  - between 6.4% and 14.9% (funds)
  - between 4.7% and 11.0% (direct)
  - IFRS contribution to ordinary income EUR 100.3 m.
- Increased prices in top-market segment noticeable (significant decline in yields), but still opportunities depending on geography and individual deal character

<sup>\*</sup> IRRs per 30 June 2015 and since inception of the individual investment programme

# German GAAP and equalisation reserve



## Balance sheet Hannover Rück SE as at 12/2014 German GAAP is "somewhat different", too

in m. EUR

Ass	sets	Liabilities	
Investments	22,981	Subscribed capital, capital reserve	1,002
Deposits	18,932	Retained earnings	380
Receivables	2,405	Disposable profit	515
Others	638	Subordinated loans	1,500
		Equalisation reserve	2,812
		Deposit received from retrocessionaires	7,308
		Provisions, other liabilities	31,439
Total	44,956		44,956

## **Good individual results are the basis for an attractive dividend** Hannover Rück SE (German GAAP)

in m. EUR	2010	2011	2012	2013	2014
Retained earnings	379	380	380	380	380
Allocation to equalisation reserve	141	293	341	268	278
Profit for the financial year	406	270	410	367	421
Profit carried forward from previous year	6	25	41	89	94
Allocations to other retained earnings	(110)	(1)	0	0	0
Disposable profit	302	294	451	456	515
Disposable profit + retained earnings					895
Paid dividends	277	253	362	362	513
Dividend payout ratio (German GAAP)	92%	86%	80%	79%	100%
Dividend payout ratio (IFRS basis)	37%	42%	42%	40%	52%

## **Equalisation reserve** Positive U/W results have led to a remarkable increase

#### **Development since 2005**

in m. EUR



Investment update | HR's real estate portfolio | GAAP/equalisation reserve

## Methodology of calculation - legally mandated

- 1. Based on the observation of loss ratios over the last 15 or 30 years (observation period) and their volatility, a standard deviation is determined for each line of business
- 2. This standard deviation is to be multiplied by 4.5 and the earned premium to establish the provisional target amount.
- 3. The provisional target amount is reduced if the loss experience of the last 3 years confirms a sufficient reserve.
- 4. If the target amount is not yet reached, 3.5% thereof is to be allocated to the reserve irrespective of the actual loss ratio.
- 5. If the loss experience in the financial year was better than in the observation period, the difference between the two ratios is to be multiplied by the earned premium in the financial year. The product of this calculation is to be allocated, to the extent that the target amount is not reached.
- 6. If the loss ratio in the financial year is higher than the loss ratio in the observation period a withdrawal is made. This withdrawal is reduced if the loss experience of the last 3 years is more favourable than in the observation period.

## Calculation of the equalisation reserve (simplified example) Complicated and challenging to forecast

Observ. period years	Loss ratio %	Average ratio in the observation period %	Deviation	Squared deviation	
2000	85.00	90.20	5.20	27.04	
:	:	:	÷	:	
2014	96.00	90.20	-5.80	33.64	
		Average squared deviation		30.00	
		Standard deviation (square root)		5.50	
		Standard deviation x 4.5		24.75	
		Earned permium 2015		100,000,000.00	
		Provisional target amount (as % of premium)			24,750,000.00
Threshold loss ratio from 2013 to 2015			86.00		
	Loss ratio in the observation period			90.20	
	Deviation			-4.20	
		x 3		-12.60	
	Shortfall (as % of premium)				-12,600,000.00
		Target amount (maximum amount)			12,150,000.00
		Loss ratio 2015		94.00	
		Loss ratio in the observation period		90.20	
		Excess claims		3.80	
	Reduction due to threshold loss ratio			2.52	
		Withdrawal as percentage of premium, amount		1.28	1,280,000.00

## Outlook impacted by volumes & decreasing standard deviations As volatile years will no longer be considered (2001 in 2017)



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## A dip into newer P&C opportunities

Jürgen Gräber, Member of the Executive Board

18th International Investors' Day Frankfurt, 14 October 2015



## Hannover Re successfully exploits market opportunities ... ... and implements growth initiatives without neglecting cycle management



- Improved diversification and reduced NatCat exposure leading to lower earnings volatility
- Cycle management combined with selective underwriting
- Past and future growth opportunities from global trends
- Increase in 2015 driven by one-offs

hannover re

\* Based on previous segment reporting

## Agenda



- 12 22 | Agricultural insurance
- 23 23 | Conclusion



## **Technological trends** Drivers of the cyber insurance market



A clear trend: always on & (hyper-) connectivity

## An ever-growing technological dependence increases risks Cyber insurance - risks and coverage

## Types of risks

		Ν	Alicious attacks	Defamation
Data breach	Hacker attacks	Viruses	Liability	
Business interruption	Privacy breach	VIIUSUS	Data loss	Property rights infringement
	Trojan a	ttacks		
Who is affected?				
	Everybod	y!		

### What types of cyber insurance are there?

### First party (own losses)

- Data and system recovery
- Network interruption
- Cyber breach remediation & notification expenses
- Cyber extortion

#### Third party (losses caused to third parties)

- Privacy protection liability
- Network security liability
- Media liability

## **Cyber insurance** Standard coverage - first party

- Data & system recovery
  - Covers costs to re-secure, replace, restore or recollect data, applications or systems which have been corrupted or destroyed
- Network interruption
  - Covers loss of income and associated extra expense arising out of the interruption of business due to a network security breach (internal, external [DDoS, active hacking, malware])
- Cyber breach remediation and notification expenses
  - Notification cost
  - Emergency hotline or call centre expenses
  - IT forensics expenses
  - · Identity theft and credit monitoring expenses
  - Public relations cost
  - Legal defence cost
- Cyber extortion
  - Covers extortion payments and associated expenses arising out of a cybercriminal threat to release, encrypt, destroy sensitive information or interrupt the company's network unless consideration is paid

## **Cyber insurance** Standard coverage - third party

- Privacy protection liability
  - Protection from losses arising out of the failure to protect sensitive personal or corporate information, i.e. breach of privacy and security obligations under federal, state, local or foreign statutes, rules or regulations
- Network security liability
  - Covers liability arising out of the failure to protect your network, i.e. unauthorised access or unauthorised use (internal & external) of your systems, or inability of access e.g. due to a (distributed) denial of service attack or transmission of malware
- Media liability
  - Protection against claims arising out of the releasing, gathering and the communication of confidential information
  - Coverage against copyright or trademark infringement, violation of privacy, libel, slander, plagiarism or negligence arising out of various ways of electronic publishing, transmission and distribution of internet content



## Gaps in the coverage of traditional insurance classes

	Property	BI	General liability	Crime	D&O	Cyber cover
Policy trigger:	Physical Damage	Physical Damage	Actual fault	Criminal Act	Breach of duty	Loss of data/ network failure
Direct and indirect financial loss	×	×	×	×		
Hacking	×	$\mathbf{\times}$	$\mathbf{X}$		$\mathbf{\times}$	
Data theft	×	×	×		×	-
Privacy liability	×	×	×	×	×	
BI following a DDoS/Hacking	×	×	×	×	×	-
Reconstruction of network, data, software	×	×	×		×	
Liability following physical loss of data	×	×	×	×	$\checkmark$	
Contractual liability towards PCI	×	×	×	×	×	
Costs following loss of data	$\checkmark$		×	×	$\checkmark$	
Costs following a data security breach	×	×	×	×	×	
Costs for external security specialists	×	×	×	×	×	-
Costs for legal advice	×	×		×	$\checkmark$	-
Public relation expenses	×	×	×	×	$\checkmark$	-
Extortion money	×	×	×	$\mathbf{X}$	$\mathbf{x}$	-

## **Public starts taking notice**



## Loss potentials

Cyber attacks lead to annual losses for global economy > USD 400 bn.\*



\* McAfee, Estimating the Global Cost of Cybercrime, June 2014 HIPAA = Health Insurance Portability and Accountability Act of 1996

HITECH = Health Information Technology for Economic and Clinical Health

## **Development of cyber insurance market in the US and Europe**

### US<sup>1)</sup>

**Regulatory activities** 

- Pioneer in cyber security
- Since 2003, increased regulatory activities in relation to data protection and cyber security

#### Europe<sup>2)</sup>

**Regulatory activities** 

- First EU data protection guideline (Data Privacy Protection Directive) in 1995
- In 2013, tightening of directive due to inconsistent laws in EU, stricter notification rules and penalties
- Implementation of new EU directive, most likely in 2016

#### Premium

- Estimated GWP in 2014 ~USD 1.5 bn. gross
- Expected growth rate: ~38%
- Penetration rate: ~34%

#### Premium

- ▶ Estimated GWP by 2018: ~USD 900 m.
- Expected growth rate: ~50%
- ▶ Penetration rate: ~2%

Rest of World (RoW): increasing awareness creating new demand

2) Der Cyber-Versicherungsmarkt in Deutschland, 2014, Springer Verlag, Marsh UK Cyber Security 2015

## Conclusion

- US is pioneer in cyber security but still has a way to go - strong growth potential
- Most European companies do not buy cyber insurance yet - very strong growth potential
  - Implementation of a new EU directive in 2016?
- Rest of World offer stronger growth potential

- Available capacity (still) exceeds demand (single risk/limit)
- Continual development of attacks
- Premium adequacy not proven yet

Hannover Re sees more opportunities than risks in cyber business

## HR's approach to realise cyber business opportunities

Establish ourselves as a skilful and preferred business partner in cyber reinsurance





## Agenda

- 02 11 | Cyber insurance
- 12 22 | Agricultural insurance
- 23-23 | Conclusion



## Growing population and food demand with less arable land ... ... make agriculture a constant challenge

### Types of risks

Frost	Sickness	Disease	Pests	Equipment	Pricing	Wind
Drought	Heavy rainfalls	Heat	Wind	Equipment	Viruses	
Who is affecte	d?	Governments	Farm	ers		Everybody!

### What types of agricultural insurance are there?

- Single-risk insurance
  - One peril or risk (e.g. hail)
- Named (peril) insurance
  - Two or more risks, mostly with hail as basic
- Farm package insurance
  - A combination of guarantees for crops and farm infrastructure

- Multiple Peril Crop Insurance (MPCI)
  - Losses from natural causes (e.g. wind, drought, frost, rain, pests, disease, etc.)
- Revenue Insurance Plans (e.g. Crop Revenue Coverage (CRC), Income Protection (IP), etc.)
- Index insurance (e.g. weather, yield, NDVI (Normalized Differenced Vegetation Index), etc.)

## **Our global food supply is faced with enormous challenges** By 2050, 9 bn. people require 70% - 80% more food (>1000 calories per day/person)

Envisioned development of future demand vs. land



Risk transfer is necessary to protect the capital investment in agriculture

## Agricultural business - a global megatrend

As world population & income rise, the race is on to meet changing nutritional needs

- 4. There is a need and a trend to invest in, diversify and intensify agriculture
  - Capital is moving into the agricultural sector in emerging markets
  - Technical modernisation requires considerable
    investment
  - Countries worldwide are interested in gaining food self-sufficiency
    - 3. The natural resources are limited
      - Land and water scarcity
      - Changing weather and increasing pollution

- Global population is growing by 210,000 people every day
  - Strongest population growth in Asia
  - People increasingly live in urban centres
  - Life expectancy is increasing

In 1985, meat consumption in China was 20 kg per person per year. By 2000, it had increased to 50 kg. Further increases are projected.

- 2. High economic growth is bringing large part of population out of poverty (Mexico, Brazil, China, India, etc.)
  - What is more, the food consumption pattern is changing increasing the consumption of meat and healthy, high quality food (organic)

On the supply side, environmental pressures and increasing urbanisation are putting further strain on already limited resources.

## High growth potential of insurance premium in... ...emerging markets from USD 3.9 bn. (2009) up to USD 15 - 20 bn. (2025)

### Agriculture insurance premium vs GDP

in %



## Insurance penetration in agricultural crop business Still huge growth potential

#### Ratio of insured vs. cultivated areas

in m. ha



Source: own data

## Our key markets with growth potential - US and China Primary market gross written premium



- in bn. USD > Major market for revenue cover worldwide, where price and yield variability are compensated
  - Key market for HR due to strong support by the state on premium and loss caps, technically sound terms and modelling tools
  - Medium-term stable outlook for the market



- Since 2007, China has become the fastest growing agricultural insurance market
- Medium-term outlook: further growing market

## High growth potential in India and Latin America Primary market gross written premium



Source: own data

## Most important agricultural insurance markets \* Our key markets



## A steady increase in agricultural premium ... ... with further growth potential



## Our agricultural portfolio is well diversified Based on gross premium written in 2014

### By line of business

### 2014: EUR 287 m.

### Forestry



~ 10% of premium is microinsurance

## Our approach for future agricultural business development



## Agenda

- 02 11 | Cyber insurance
- 12 22 | Agricultural insurance
- 23 23 | Conclusion



## **Conclusion ... there is more than just NatCat**

- Growth is safeguarded by expert knowledge
- Specialty lines and products do support growth that is embedded in more traditional segments
- ► There are lines of business with significant entry barriers
- Evolution of products and innovation continues

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## **Concluding remarks and outlook**

Ulrich Wallin, Chief Executive Officer

18th International Investors' Day Frankfurt, 14 October 2015



## **Guidance for 2015 revised upwards** Group net income guidance up from ~EUR 875 m. to ~EUR 950 m.

Hannover Re Group

► G	Gross written premium 5%	<ul> <li>4 - 10% premium growth at unchanged f/x-rates</li> </ul>
► R	Return on investment <sup>1) 2)</sup>	~ 3.0%
► G	Group net income <sup>1)</sup>	~ EUR 950 m.
	Dividend payout ratio <sup>3)</sup>	35% - 40% nsiderations)

1) Subject to no major distortions in capital markets and/or major losses in 2015 not exceeding the major loss budget of EUR 690 m.

2) Excluding effects from derivatives (ModCo/inflation swaps)

3) Relative to Group net income according to IFRS

## Key takeaway

- Hannover Re is positioned to achieve its medium-term earnings growth target
- ▶ We continue to manage our capital in order to achieve an attractive RoE
- On track for Solvency II introduction, internal model approved
- High level of reserve redundancies safeguards profitability of our P&C business
- Increasing profits expected from Life & Health reinsurance
- Low yield environment is manageable
- Growth in Property & Casualty is protected by expert knowledge as well as evolution of products and innovation

Continuing successful development to the benefit of our shareholders

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