



ANALYSTS' DINNER SOLVENCY II – THE NEXT REVOLUTION

London, 19 November 2009

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Munich RE 



Solvency II – Overview

Potential impact on the insurance industry

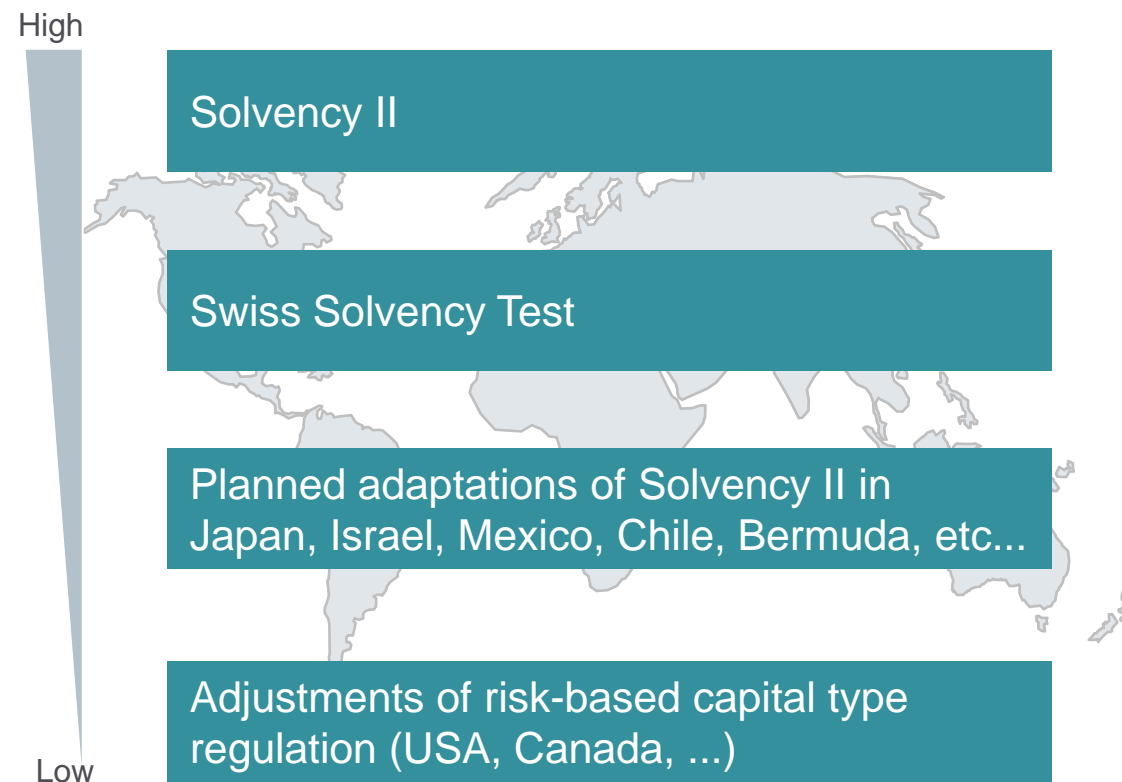
Business opportunities for Munich Re

Solvency II will substantially change the industry – Munich Re well-positioned to benefit from these changes

- Insurance industry will be required to significantly **improve their enterprise risk management**
- Challenge mainly for small and medium-sized primary insurance companies to meet the Solvency II requirements as the implementation will be a **major effort in terms of resources and knowledge**
- Specialised insurers will face **higher capital requirements**
- **Global, well-diversified reinsurers with good credit ratings** will benefit from top- and bottom-line growth opportunities
- **Munich Re in a good position** to seize these business opportunities:
 - Strong capital position with a well-diversified business portfolio
 - Proven expertise in risk management
 - Long-term partnerships with attractive client base and extensive market knowledge
 - Unique solvency consulting unit with high expertise and credibility

Solvency II is the regulation that comes closest to an enterprise risk management system

Relative implementation level of enterprise risk management concept



Solvency II objectives

- Overall goal: Consumer protection
- Creation of a harmonised supervisory system throughout Europe based on the actual risk situation of each insurance company
- Extending the existing quantitative supervisory system through development of companies' own internal risk models and risk management processes
- Adding a qualitative aspect to the supervisory system through internal risk management system requirements

Solvency II motivates the insurance industry to fully adopt stringent risk-based economic steering

3 pillars of Solvency II

1 Quantitative

Solvency requirements

Standard approach or internal model

2 Qualitative

Supervisory process

Efficient risk management and control

3 Transparency

Market transparency

Disclosure requirements to strengthen market discipline

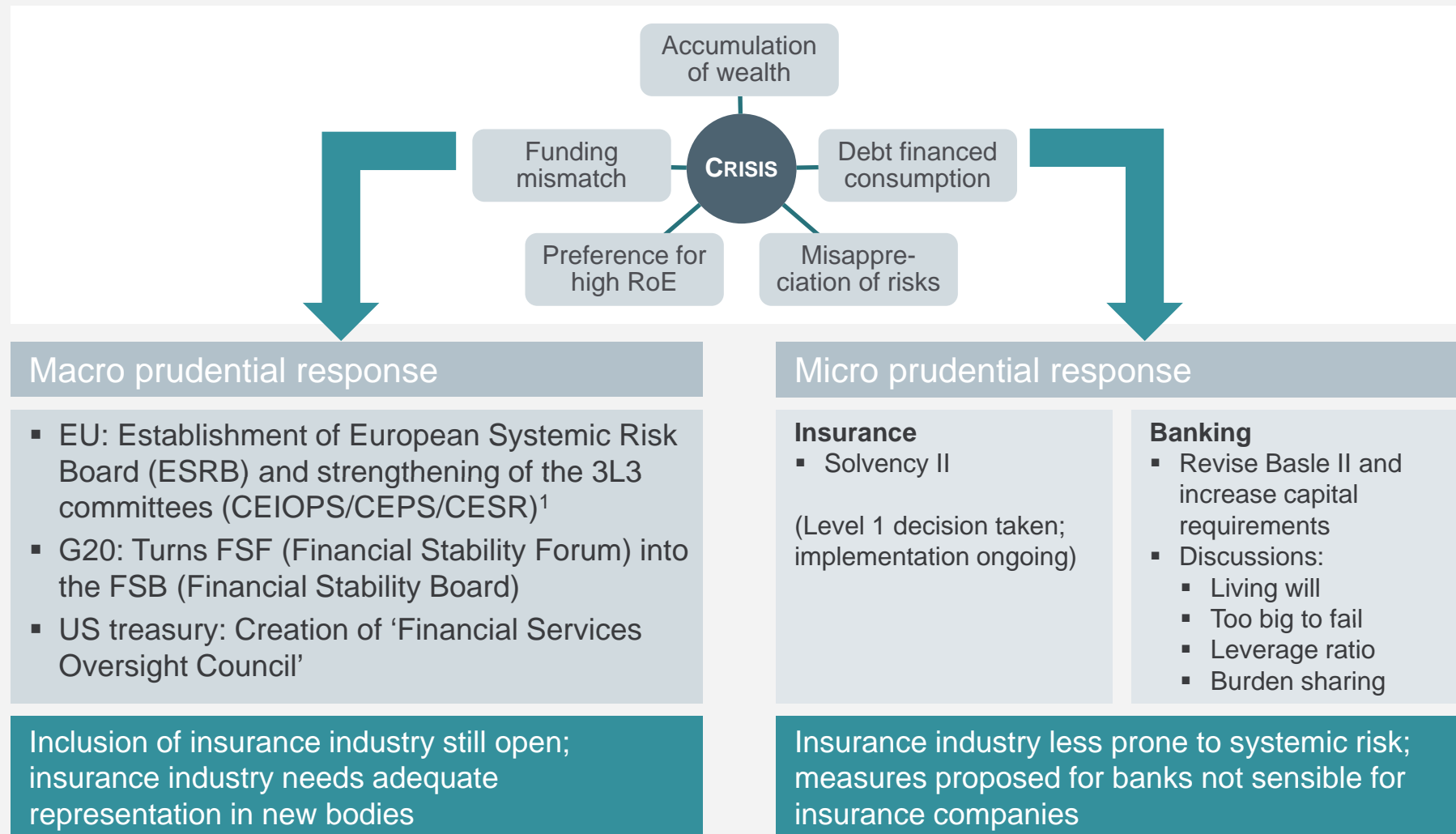
Enterprise risk management to replace the traditional accounting-based focus facilitating a stringent economic and holistic approach to manage risks

Changes compared to Solvency I

- Principle-based (in contrast to Solvency I rules)
- Economic and market-consistent valuation of all material risks
- Reinsurance and other risk mitigation instruments fully applicable under Solvency II (no more 50% cap on non-life reinsurance)
- Some issues remain, especially with regard to non-proportional reinsurance
- Consideration of diversification effects
- Investment risks are comprehensively taken into account

**In the past success was measured by combined ratio and investment income –
In the future the focus will be on return on risk capital**

Solvency II - the regulatory response to the financial crisis for the insurance industry



¹ European supervisory boards for insurers, banks and securities trading (CEIOPS: Committee of European Insurance and Occupational Pensions Supervisors, CEPS: Centre for European Policy Studies, CESR: Committee of European Securities Regulators).

Divergence in opinion between CEIOPS and insurance industry at Level 2 (selected issues)



Level 1		CEIOPS & insurance industry	
		CEIOPS and the insurance industry agree on a Level 1 Framework Directive that represents an adequate compromise which must be respected as a basis for the further Implementing Measures consultation process	
Level 2/3		CEIOPS perspective	Insurance industry perspective
Pillar 1		<ul style="list-style-type: none"> Government bonds as risk-free rate No consideration of diversification between classes of business in risk margin Limited recognition of hybrid capital Increased elements of prudence in valuation and capital requirements 	<ul style="list-style-type: none"> Swap rates plus liquidity premium Use company's own dependency structure to derive the risk margin Recognition of hybrid capital Preferential treatment of certain risks (e.g. equity)
Pillar 2		<ul style="list-style-type: none"> Strict requirements for the approval process for internal models 	<ul style="list-style-type: none"> Approval of internal models to be an achievable option without incurring excessive costs
Pillar 3		<ul style="list-style-type: none"> Comprehensive reporting requirements to permit efficient supervisory review 	<ul style="list-style-type: none"> Content and degree of detail of reporting requirements excessive, leading to high costs

The current stage of Level 2 discussion indicates a level of restriction which goes beyond the intentions of the Framework Directive

Munich Re actively participates in shaping the future Solvency II framework

Munich Re's core positions on Solvency II...

- Reasonable capital requirements for all risk categories (no preferred treatment of individual risks, no over-prudence)
- Volatility of available financial resources inevitable; but no pro-cyclical behaviour of capital requirement
- Supervisors to use full range of measures in the 'supervisory ladder of intervention'; temporary failure to meet capital requirements should not automatically lead to insolvency
- Realistic and achievable requirements for the approval process for internal models
- Comparable requirements for own funds for all participants to ensure a level playing field

... and ways to lobby them

- Actively commenting all phases of the consultation process
- Member of the CRO and CFO Forum
- Information exchange with national and European industry associations (CEA, GDV)¹
- Topic specific working groups (e.g. consideration of non-proportional reinsurance in the standard formula)
- Information dissemination and education of various stakeholders by Solvency Consulting team

Munich Re advocates an approach based on economic principles that appropriately addresses risks

¹ CEA: European insurance and reinsurance federation. GDV: Gesamtverband der deutschen Industrie (German insurance association).



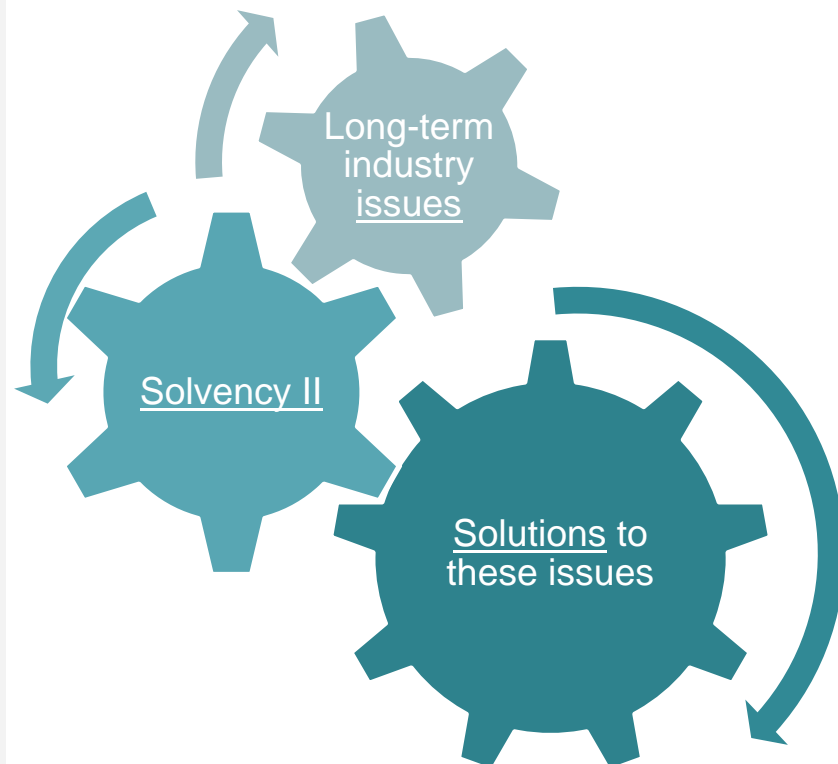
Solvency II – Overview

Potential impact on the insurance industry

Business opportunities for Munich Re

Solvency II brings more discipline to the industry

Solvency II acts as a catalyst...



...to resolve some old industry issues

Example: Primary life insurance

- Issue: Long-term guarantees and options often not properly priced and hedged
- Solvency II: Requires capital for mismatch; demonstrates where return is insufficient for risk taken
- Solution: Improving ALM, product design

Example: Reinsurance

- Issue: Reinsurance programmes not always optimal in terms of risk transfer
- Solvency II: Reinsurance matters for capital requirements
- Solution: Impact of reinsurance structures can be measured and optimised

Example: Investments

- Issue: Insufficient profitability of underwriting compensated by taking high investment risks
- Solvency II: Risk capacity places limit on this strategy
- Solution: Focusing on profitable underwriting

Solvency II introduces a new era changing the setup of the insurance sector

Potential solutions

Primary life insurance

- Improving asset-liability-matching (e.g. lengthening of asset duration, use of interest-rate options)
- Changing products to reduce sensitivity of liabilities to capital markets and unpredictable claims volatility
- Charging for embedded options
- Development of new product categories (e.g. variable annuities)

Reinsurance

- Budget or tradition-driven reinsurance programme structure to be replaced by optimised risk transfer
- Line or segment of business-driven reinsurance programme structure to be replaced by whole portfolio risk transfer approach
- Combining traditional reinsurance with capital-market-oriented solutions

Investments

- Towards lower risk and better diversified investment strategies (away from typical 'equities and government bonds' strategy)
- Focus on profitability of underwriting
- Requires improvements in value-based-management (pricing based on risk-free interest rates and present value of cost for non-hedgeable risk capital)

Munich Re will benefit from its business mix and client structure

Underwriting business

Positive changes

- More business from
 - small and medium-sized companies
 - highly specialised insurers
 - capital-intensive lines of business
 - insurers with tight capitalisation
- Higher reinsurance demand for volatile business and new or complex risks which are difficult to assess
- Higher demand for insurance-linked securities (risk transfer for catastrophe exposures; attractive combination with traditional covers)

Negative changes

- Potentially less business from large, well-diversified insurers
- Less business from market-wide standard reinsurance structures which, in many cases, show a low risk intensity

Net effect: We expect on average a positive effect on top- and bottom-line growth

Having already implemented a cutting-edge enterprise risk management, Munich Re will benefit as a global, well-diversified reinsurer

Munich Re's investment portfolio is well positioned for the new challenge

Investment portfolio

Positive changes

- Clear separation of investment and underwriting risk: More disciplined underwriting making cash flow underwriting less attractive
- Each asset category will be allocated its specific risk capital, thus improving the assessment of investment risks (e.g. bonds vs. equities)
- Further improvements in determining settings of counterparty risk limits and hedging against inflation risk

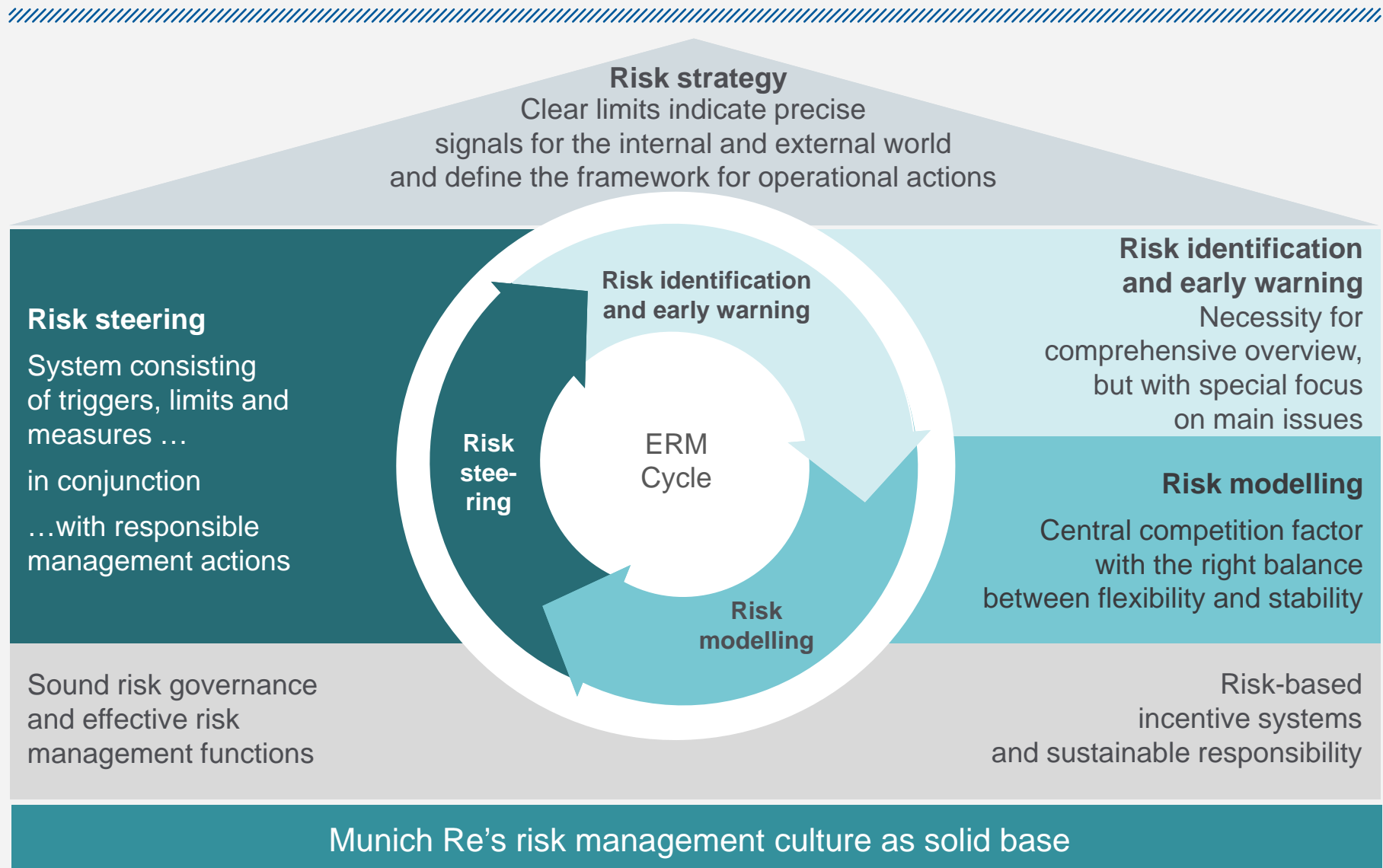
Negative changes

- Decrease in risk profile as a result of higher capital charges will induce lower (but less volatile) investment income
- Net income increasingly affected by hedging costs (mainly life insurers)

Net effect: There are no major changes in our investment strategy

Munich Re has already changed the investment portfolio in accordance with its risk appetite defined in the strategic risk management framework

The effects of Solvency II will lead to sophisticated enterprise risk frameworks



Recent model enhancements of Munich Re already anticipate standards under Solvency II

Munich Re's experiences with risk models

- Year 2008 demonstrated validity of Munich Re risk model
 - Heavy tail probability distributions and tail dependencies a necessity!
 - Calibration not only based on recent history, but considering stress events
- Risk model embedded in relevant business processes, not only in risk management process (e.g. pricing, planning, performance measurement)
- Disclosure of risk capital for several years
- Munich Re in the process of certification of risk model in the context of Solvency II

Pre-crisis model adjustments

Change of risk measure

- Risk measure adjusted to facilitate current developments in Solvency II: $ERC = 175\% \times VaR_{99.5\%}^1$
- Multiple of 175% used to determine target capitalisation

Change of aggregation methodology

- Consistent aggregation of risks and their diversification across all business units due to enhanced modelling capabilities, also reflecting fungibility restrictions

Other model enhancements

- Use of replicating portfolios based on MCEV² models
- Stronger tail dependency between asset and event risks
- Scenario based model for operational risk

Anticipated changes for year-end 2009

- Capture implied volatility risk by an explicit risk category
- Review credit spread volatility risk in the light of the crisis
- Examine credit default and migration risk and address pro-cyclicality issues

¹ ERC: Economic risk capital. ² MCEV: Market consistent embedded value.



Solvency II – Overview

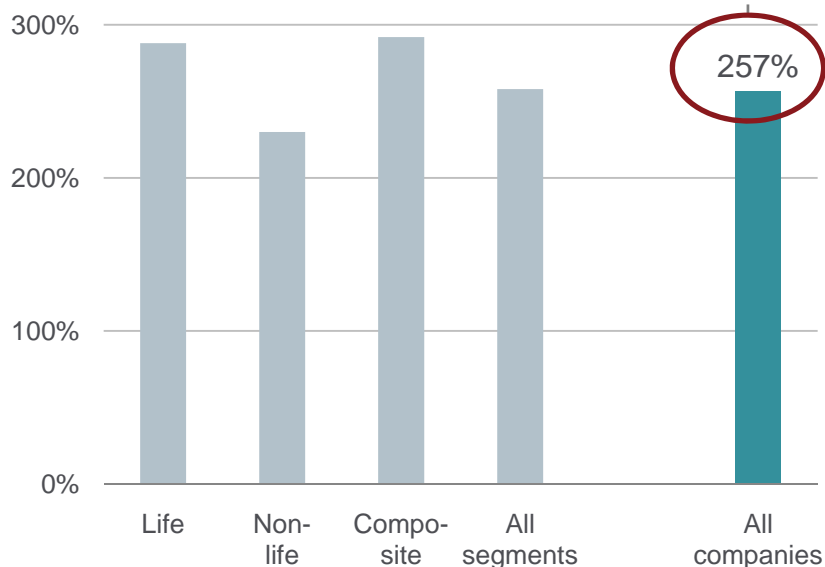
Potential impact on the insurance industry

Business opportunities for Munich Re

Being a 'winner' or 'loser' is neither a question of activity nor dependent on company size

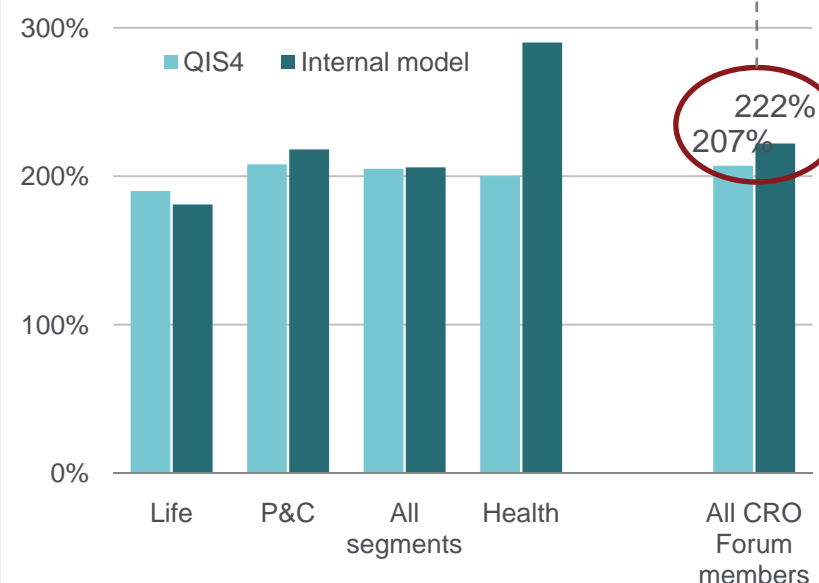
Lines of business: Mean QIS4 coverage ratio¹ (total industry)

Coverage ratio



Company size: Weighted average QIS4 solvency ratio² (members of the CRO Forum)

Coverage ratio



Based on 2007 data no significant difference in the coverage ratios between the lines of business – financial crisis will have an impact on 2008 data

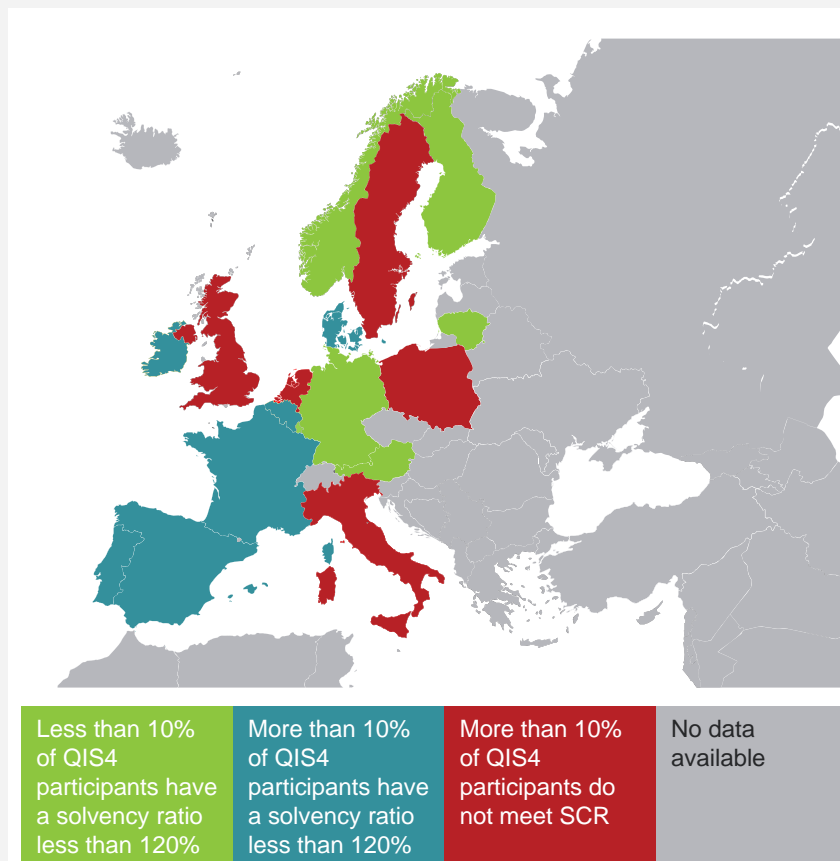
The consolidated group-wide coverage ratios of CRO Forum members is lower than the weighted average coverage ratio over all participants

¹ Source: CRO Forum benchmark study. Average of solo coverage ratios.

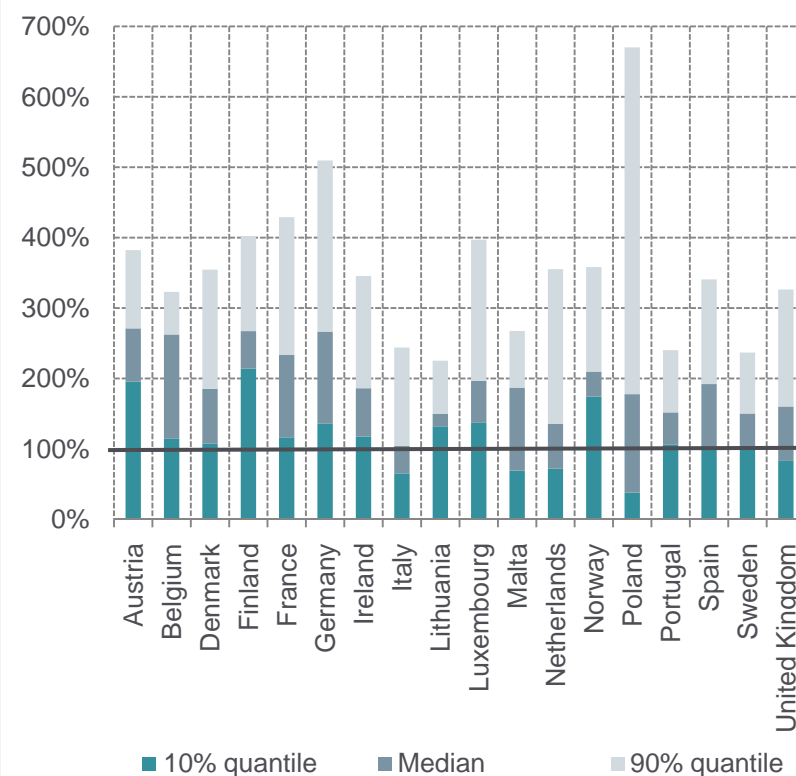
² Source: 'CEIOPS' Report on QIS4 for Solvency II, annex of selected tables, table 4, overview solo and group EU member countries consolidated coverage ratios. Weighted average of group coverage ratios.

Regional or national factors show a wide variety and no clear picture

QIS4 – Solvency II ratios (non-life)¹



Solvency II ratios for different countries²



¹ Source: QIS4, summary results and main messages, stakeholder meeting, Frankfurt, 20 October 2008.

² Source: "CEIOPS' Report on QIS4 for Solvency II, annex of selected tables, table 27. Solvency Ratio (Eligible Capital (QIS4) to SCR) for all lines of business segments.

Large variety of risk capital drivers – But: Diversification is key

QIS4 shows

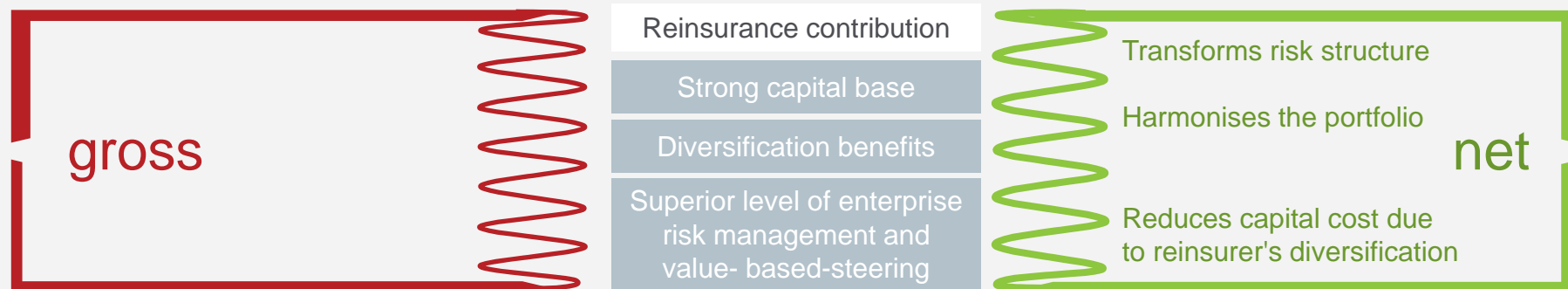
- For life insurers market risk is dominant in most markets
- For non-life insurers the variety of risk drivers is large and only becomes visible with a harmonised approach to regulation:
 - Different capital drivers for product, lines of business, markets and legal environments (volatility of line of business: NatCat exposure, existence of national pools for NatCat/terrorism, long-tail/annuity exposure, asset-liability-mismatch)
 - Diversification and size
 - Risk and capital management strategy including reinsurance
- For both, life and non-life companies, the diversification effect can vary from 5% to 40% of the BSCR¹: Diversification matters!

**Controlling risk drivers demands multiple strategies, but one key challenge:
Leverage diversification benefits ⇒ strategy shifts and/or reinsurance**

¹ BSCR: Basic solvency capital requirements.

Clients' needs under Solvency II: Reinsurance functions reloaded

Reinsurance – From risk transfer to risk transformation



Client's objectives have changed

- Optimising risk capital
- Stabilising financial resources
- Smoothing earnings volatility
- Harmonising net portfolio
- Risk mitigation
- Adequate reserving
- Pre-funding

Munich Re as holistic solutions provider

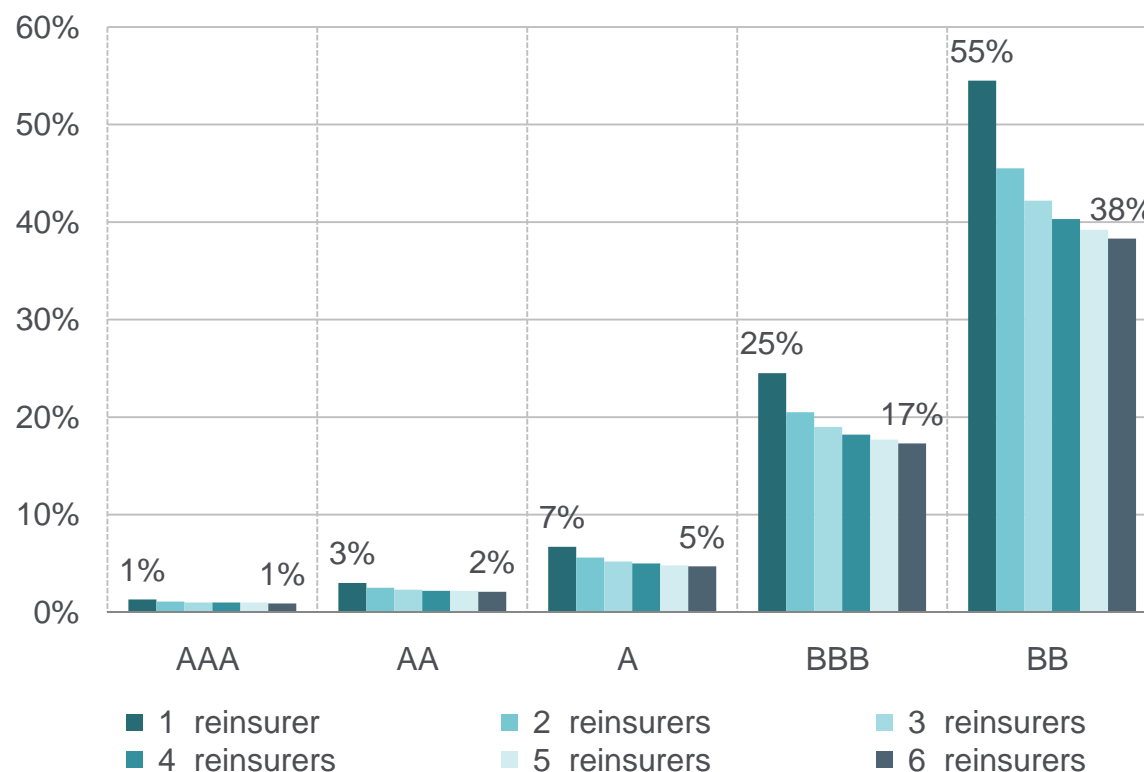
- Excellence in assessing and modelling risk
- Active capital management
- Fine-tuned traditional reinsurance covers
- Combining traditional and ILS¹ coverage
- Retrospective products (e.g. LPT², ADC³)
- Combined covers for reserve and ALM risk
- Life: Pre-funding, monetisation of MCEV

Munich Re's core competencies match its clients' needs

¹ ILS: Insurance-linked securities. ² LPT: Loss portfolio transfer. ³ ADC: Adverse development cover.

Strong capital base provides a clearer competitive edge – Reinsurers' rating the decisive factor

Deduction on capital relief for the counterparty default risk¹



Impact of rating vs. number of reinsurers

- Explicit consideration of reinsurance credit risk through a deduction from capital relief
- Example: Capital relief from a reinsurance treaty with only one AA-rated reinsurer greater than with a panel of six A-rated reinsurers

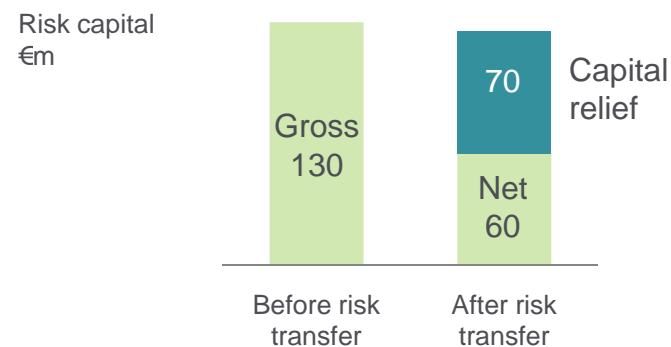
Financial strength of reinsurers more important than diversification by number of counterparties

¹ Graph based on Consultation Paper No. 51: SCR standard formula – further advice on the counterparty default risk module A.9.

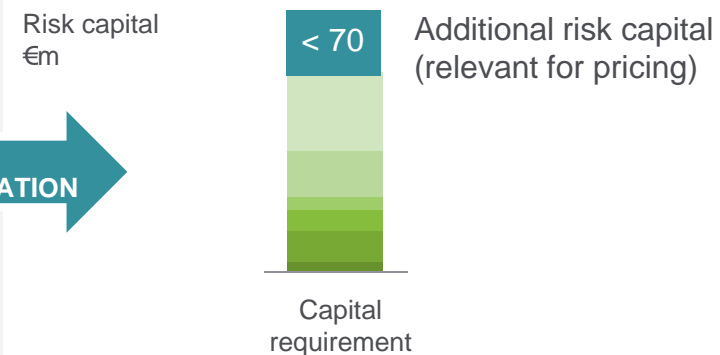
Well-diversified reinsurers will benefit from Solvency II while cedants can improve their risk-adjusted return

Illustrative

Primary insurer's portfolio



Reinsurer's portfolio



RISK
TRANSFORMATION

Usually diversification for reinsurers is higher than diversification for insurers due to

Number of individual risks

Geographical spread
(global business model)

Product / line
of business mix

Capital relief for insurer exceeds
capital requirement of reinsurer

Clear win-win situation
and not a zero-sum game

Munich Re well positioned for future growth: Tapping business potential which arises from Solvency II

The three cornerstones of Munich Re's refined positioning

1

A high level of security and individual solutions

- Efficient reinsurance of standard risks
- Customised solutions for risk and balance-sheet management
- Service for Solvency II / ALM, enterprise risk management
- Risk transfer to capital markets

2

(Re)insurance of complex and new risks

- Expanding the limits of insurability by developing new coverage concepts
- First-class modelling
- Investing substantially in actuarial and underwriting skills

3

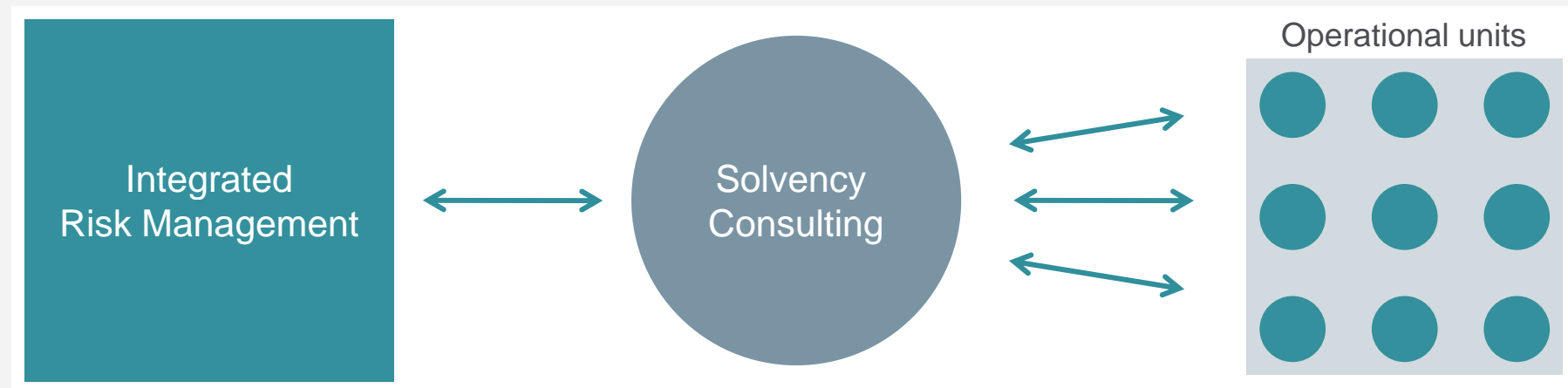
Tapping into new client groups

- Highly specialised primary insurance niche business; cooperation with MGAs
- Public-private partnerships
- Insurance pools

Recent cases of solvency-driven business

- Life and health: Financial crisis triggers pre-Solvency II demand from 2009: Premium volume €2.5bn (several cases in continental Europe, North America, and Asia)
- Non-life: Several cases in continental Europe in 2009
- All lines of business: Demand surge expected from 2011, mainly for European Union markets

Munich Re offers services using its own expertise to help clients meet Solvency II requirements



Solvency Consulting is a subdivision of Munich Re's Integrated Risk Management

- Preparing Munich Re's operational units for the 'new world' of reinsurance purchasing: Risk modelling, enterprise risk management, IT tools, ...
- Transparent modelling services: Every calibration step is shared with the client, data and software free of charge available for further use by the client
- Expertise from own Solvency II preparation facilitates impact analysis and solution design for clients
- Service products: Quicker development, client-oriented through ongoing contact with operational units
- Combined set-up for life and non-life business
- Profound market and industry expertise from our underwriting database helps compensate for lack of client data

Business enabling under Solvency II – From quantitative capital relief ...



Quantitative

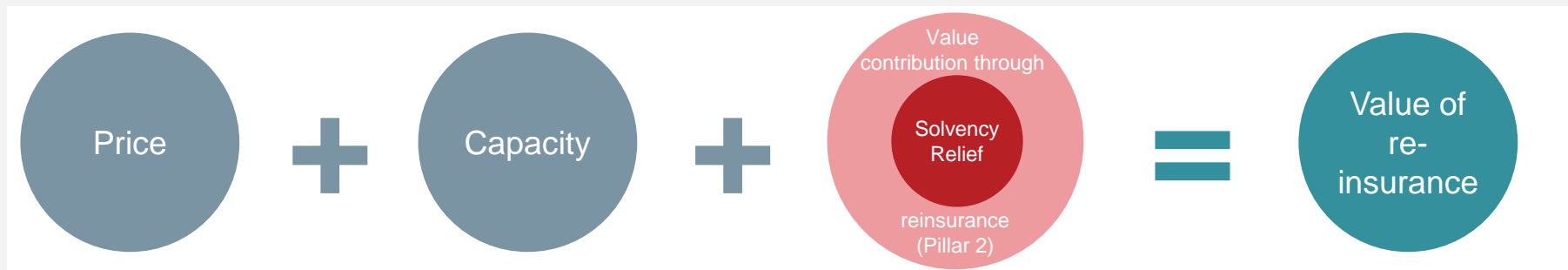
- Analysis and calibration of risk and claims profiles. Specific risk analysis (NatCat, biometric, industrial, etc.), **in-depth product and market expertise**
- Stochastic modelling of the underwriting risk: **Open source software platform (PillarOne)**
- Analysis of Solvency Capital Requirement (SCR): Optimisation of portfolio and of reinsurance structure (**PODRA² service**)

- Design and provision of **tailor-made risk transfer solutions**: Traditional reinsurance in combination with alternative concepts, e.g. securitisation and portfolio swaps
- Beyond risk transfer: **Asset-liability-matching (ALPHA)**
- Life: **Stochastic modelling of biometric risks (BRiSMA)**

Independent, fully transparent analysis – no black box
Munich Re's position strengthened by superior risk expertise

¹ VBM: Value-based management.

² PODRA: Pillar One Dynamic Reinsurance Analysis.



Qualitative

- Assisting with **Solvency II preparation**: Advise on prioritisation of ERM measures: ‘first and second steps’
 - Promoting **strategic development**: Turning new, emerging, complex risks (technology, demography, ...) into business potential
 - Asset management: **ALM, MEAG services**
 - **Liquidity** risk: Advise on retentions, NatCat covers, appropriate cash calls
- Support **quality assurance** for insurance operations:
 - **Product design**: Innovation, attractiveness, legal compliance
 - **Pricing**: Provision of statistics, rating structures
 - **Underwriting**: Risk selection
 - **Claims**: Handling procedures, reserving

Expert service for Pillar 2 increases Munich Re’s competitive edge



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Discussion

Munich RE 

Financial calendar



FINANCIAL CALENDAR

1 December 2009	Cheuvreux Financials Conference, London
10 March 2010	Balance sheet press conference for 2009 financial statements
28 April 2010	Annual General Meeting
29 April 2010	Dividend payment
7 May 2010	Interim report as at 31 March 2010
4 August 2010	Interim report as at 30 June 2010; Half-year press conference
9 November 2010	Interim report as at 30 September 2010

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