

Institute of Insurance Economics



University of St.Gallen

Principles-Based Regulation



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August 20th, 2010



Agenda

1. Safety level and regulation in the insurance sector

- Why regulation?
- Principles- versus rules-based regulation
- Crisis in the insurance industry
- Systemic risk within the insurance market and first implications

2. Selected forms of regulation in the insurance industry

- Solvency regulation
- Main differences between Solvency II and SST
- Insurance Guaranty Funds (IGF)
- Some questions unanswered so far

3. Some implications of regulation for primary P&C insurers

1. Safety level and regulation in the insurance sector

Why regulation?

- Solvency regulation has a special importance in the insurance sector
- Insolvency of an insurer can lead to a "ruin" of the policyholder
- Safety level of the insurance company directly influences the product quality
- Willingness to pay depends highly on the safety level of the insurance company
- Safety level is in the focus of regulators (SST; Solvency II) and rating agencies

1. Safety level and regulation in the insurance sector

- However: Safety is not a goal in itself
- Do we really need regulation here?
- Third party problem
- Asymmetric information regarding the different stakeholders (in particular: Management versus policyholders)
- Hence: Reducing "signaling costs" for insurance companies
- Very little information can be derived regarding the cost-benefit-ratio of regulation



1. Safety level and regulation in the insurance sector

Principles- versus rules-based regulation

	<i>Standard rules-based regulation</i>	<i>Principles-based regulation</i>
Idea	Regulator provides a detailed set of rules to follow and a model to implement	Regulator provides only a set of principles to follow and no information on how to implement
Example	Solvency I	Swiss Solvency Test
Systemic risk	Pro-cyclicality and similar behaviour problematic	Pro-cyclicality and similar behaviour less problematic
Reflection of risk	One-size-fits-all model cannot capture the full spectrum of individual risk profiles	Individual model to capture true, individual risk profile of the insurer
Flexibility	Low flexibility for handling individual situations	Higher flexibility for handling individual situations
Innovation	Little room for innovation	Might trigger innovation, for example, internal risk models (insurers need to develop to some degree their own risk models based on the principles)

Cf. Eling/Schmeiser
 GP 2010

1. Safety level and regulation in the insurance sector

	<i>Standard rules-based regulation</i>	<i>Principles-based regulation</i>
Integration in risk management	No integration, regulatory requirements and insurers RM are mostly separate systems	Integration of regulatory requirements into the risk management process
Model arbitrage	More effective	Less effective
Predictive power	Low	High
Complexity	Low	High
Implementation costs	Low	High
Data requirement	Low	High
Implementation	Easy	Difficult
Practical application	Easy	Difficult
Comparability	High	Low
Model risk	High	Low
Up-to-dateness	Low	High
Systemic risk	High	Low

Cf. Eling/Schmeiser
 GP 2010

- Trend: From principles-based regulation back to rules-based regulation?

1. Safety level and regulation in the insurance sector

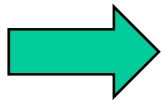
Crisis in the insurance industry

- Three quite different cases
 - Mannheimer Lebensversicherung
 - Equitable Life
 - AIG

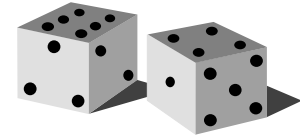


1. Safety level and regulation in the insurance sector

- Reasons for the current financial crisis
 - Propensity to consume and global financing policy of the U.S.?
 - Intransparent cross-linked capital markets?
 - Incentive structures in corporations led by managers?
 - Stochastic models and their interpretation?
....
 - Search for a "culprit"



1. Safety level and regulation in the insurance sector



- Model risk
 - Stochastic models are all about probabilities
 - Typically only the pure randomness is modeled
 - Stochastic phenomena stay stochastic (with or without risk modeling)
 - Using similar models (IFRS, Solvency II, etc.) forces systemic risk within the market

"All models are wrong, but some are helpful"

George Box

1. Safety level and regulation in the insurance sector

Systemic risk and first implications

- Differences in the business model: "Insurance run" is rather unlikely to happen
- Cross-linked relationships between insurance companies are not comparable to the banking industry
- However, asset volatility as the main risk source of an insurer affects insurance companies in a similar way
- Including similar standards in large insurance markets may reduce competition in the regulation sector and may lead to similar behavior within the insurance industry

2. Selected forms of regulation in the insurance industry

Solvency regulation

- Important part: Risk Based Capital Standards in the context of Asset Liability Management and Enterprise Risk Management (Group Solvency)
 - Other tools of regulation: E.g., product design in the life insurance sector, accounting
 - Trends to a re-regulation of the insurance sector (partly because of the financial crisis); Example: EU-Insurance Guaranty Funds (IGF)
 - In which respect solvency testing and other forms of regulation are in the interest of policyholders is widely unknown

2. Selected forms of regulation in the insurance industry

- Overview Solvency

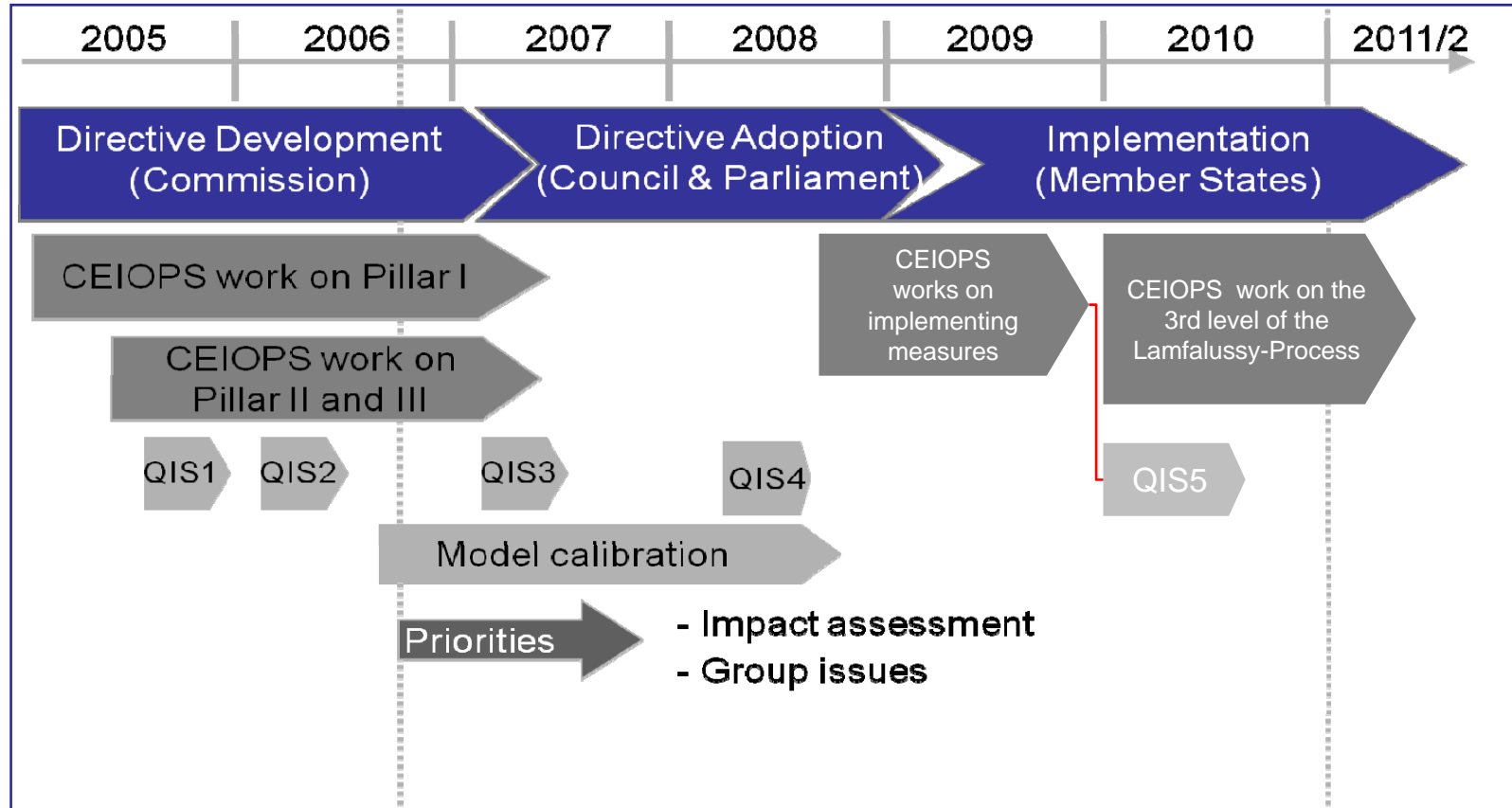
Model Typology		Model Name	Introduced	
			by	in
No Model		Fair Insurance Code, Insurance Companies Act	New Zealand	2001, 1994
Static Factor Models	Not Risk-Based	Solvency I	EU	2004
		Insurance Reform Act	Australia	1973
	Risk-Based	General Insurance Reform Act	Australia	2001
		Risk Based Capital Standards	USA	1994
		Solvency Margin Standard	Japan	1996
		Financial Analysis Solvency Tools	(Proposal of) NAIC	1994
		Capital Adequacy Ratio	(Proposal of) AM Best	1994
		GDV-Model	(Proposal of) GDV	2005
Dynamic cash flow based models	Scenario based	Stress Testing	BaFin	2002
		Financial Assessment Framework	Netherlands	2006
	Principles-based	Cash Flow Model	(Proposal of) Cummins, Grace and Phillips	1999
		Cash Flow Model	(Proposal of) Schmeiser	2004
Combination of Static Factor Models and Dynamic cash flow based models		Enhanced Capital Requirement, Individual Capital Assessment	UK	2004
		Swiss Solvency Test	Switzerland	2006

Eling/Schmeiser/Schmit, RMIR 2007

- Clear implications in respect to market premiums

2. Selected forms of regulation in the insurance industry

- Timetable Solvency II



The Actuarial Profession (revised)

2. Selected forms of regulation in the insurance industry

- Solvency II: Three pillar structure

1st pillar

Two level approach:

- MCR
- SCR
- Internal models:
Lower requirements?
- Impulses for the risk management of the insurance company?

2nd pillar

Control by the supervision

- Accreditation
- Review process
- Organizational consequences?
- Re-regulation?

3rd pillar

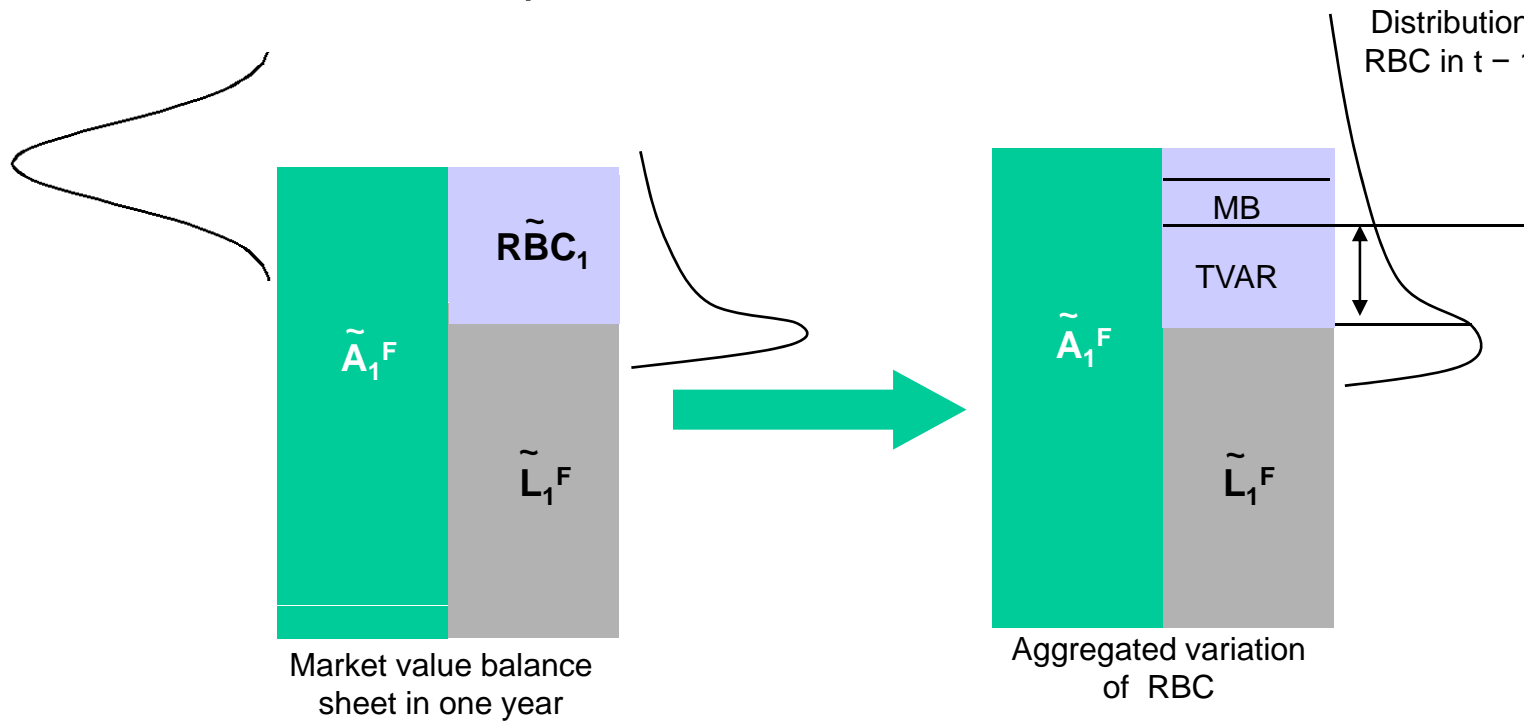
Market discipline

- Market transparency
- Disclosure
- In principle:
Product rating
- Problematic incentive effects?

Internal models

2. Selected forms of regulation in the insurance industry

- SST: Comparison of RBC with SCR



TVAR = Risk measure "Tail-Value-at-Risk" based on distribution of the RBC in $t = 1$ (1% level)
 MB = Minimum amount (run-off costs in case of an insolvency)
 SCR = TVAR + MB

$RBC_0 > SCR$ Requirement

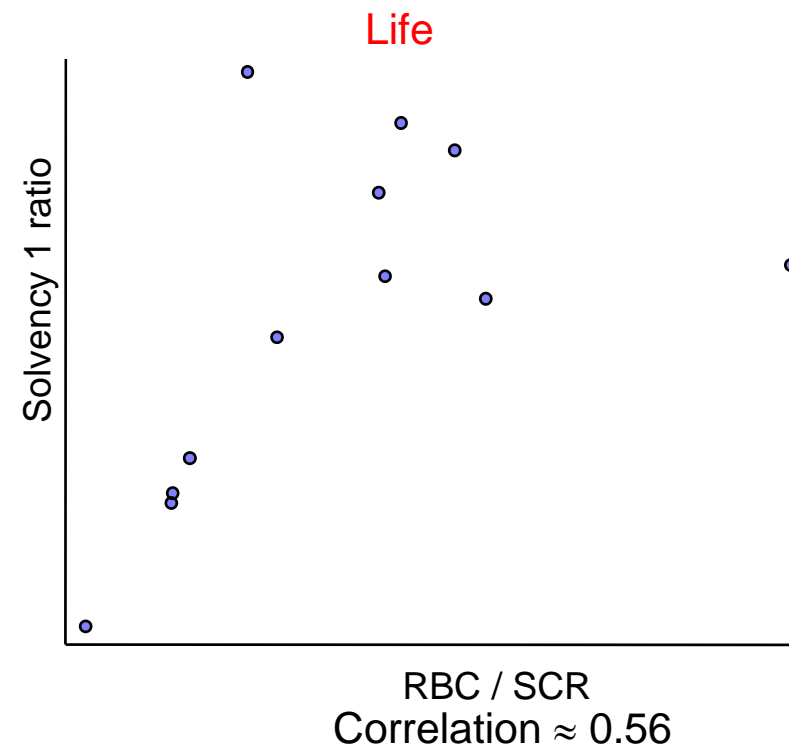
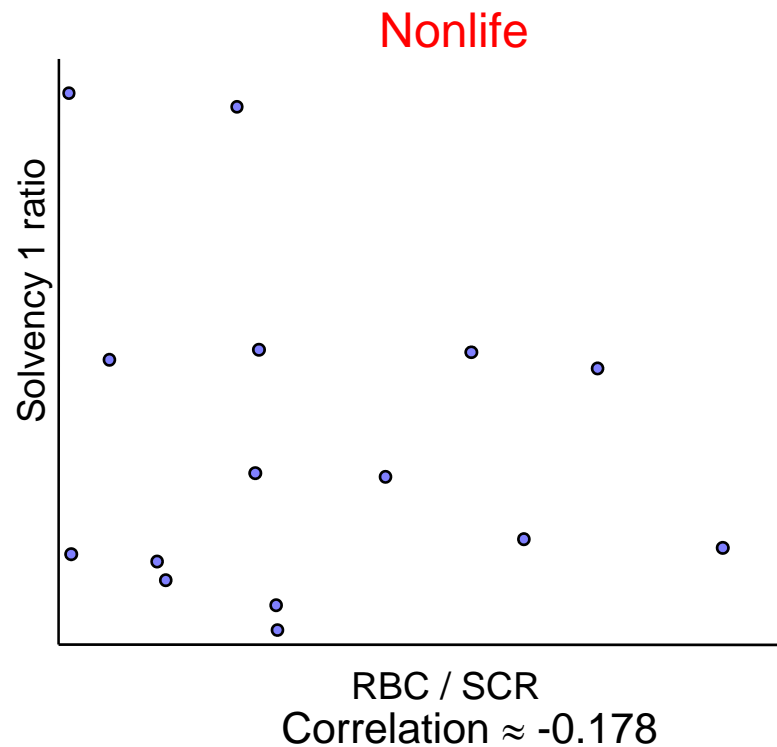
2. Selected forms of regulation in the insurance industry

Main differences between Solvency II and SST

- Risk measurement (TVAR versus VAR)
- Solvency II: Internal models will rather be the exception
- SST standard approach is much more advanced
- Handling of operational risk
- Group Solvency testing: Consolidated approach (Solvency II) versus legal entity approach (SST)
- Measurement of diversification: Legal entity approach (SST) versus business segment modeling (Solvency II)
- Role of stress testing

2. Selected forms of regulation in the insurance industry

- Very little correlation between the Solvency I results and the results given by the SST

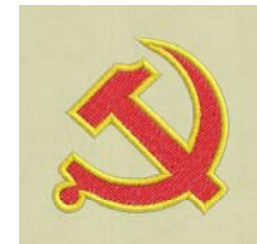


2. Selected forms of regulation in the insurance industry

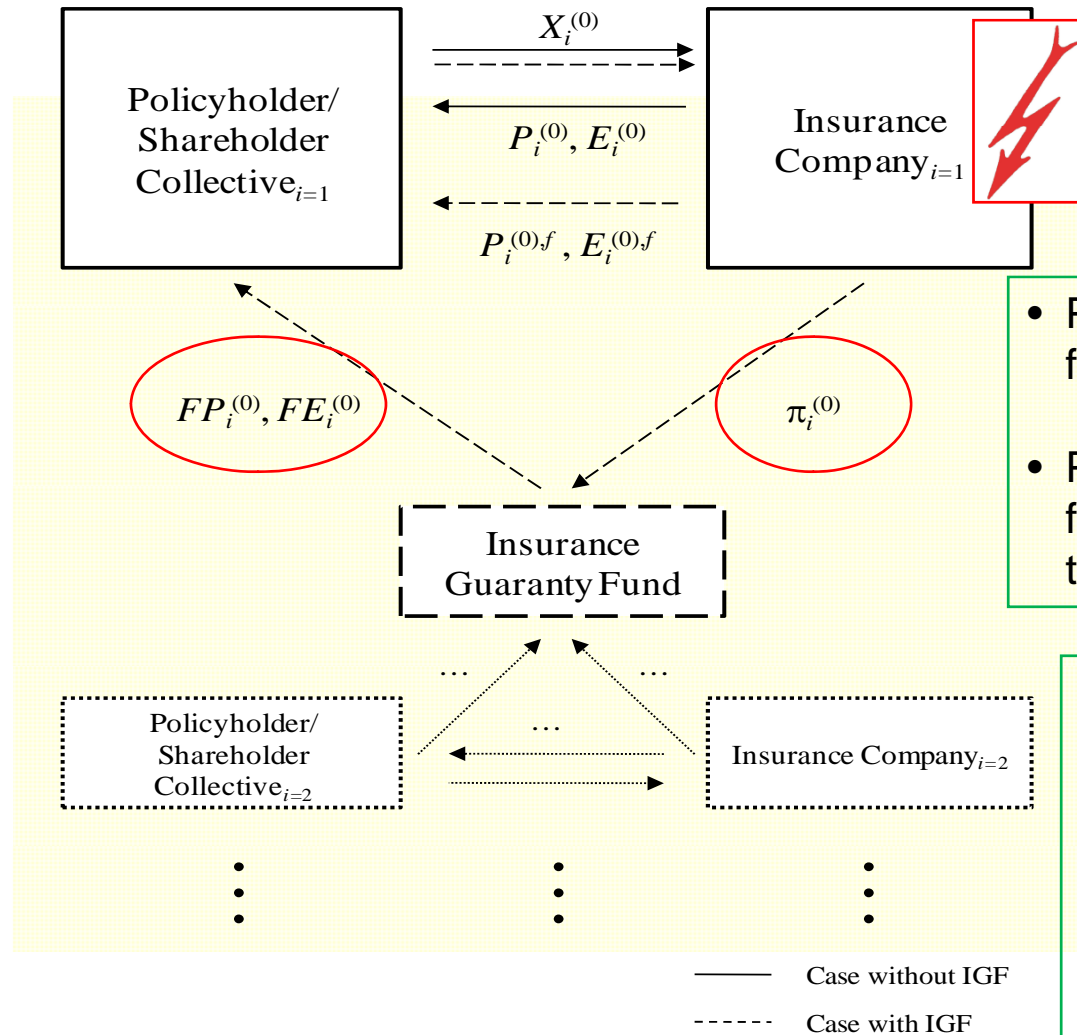


Insurance Guaranty Funds (IGF)

- Insurance Guaranty Funds (IGF)
 - With respect to the current financial crisis: Search for a solution for an orderly run-off
 - Currently discussed in the EU
 - Problem: Present systems are not risk-based regarding payments to and from the fund
 - Effect: Subventions and wealth transfers between insurers



2. Selected forms of regulation in the insurance industry



- Premiums and payouts of the fund need to be defined
- Premiums and payouts of the fund affect the safety level of the insurer (cf. Solvency II !)

- Finding of a recent paper by the I.VW: There exists in general no risk adequate distribution scheme
- An IGF might cause bad incentives in the market



2. Selected forms of regulation in the insurance industry

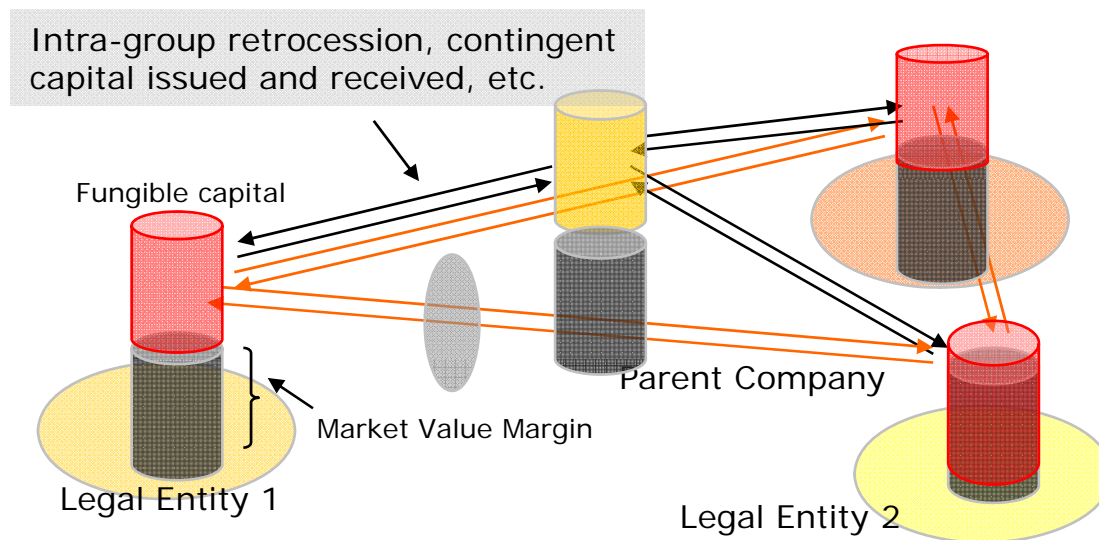
Some questions unanswered so far

- With respect to the financial crisis there are several questions that need answering
 - The handling of systemic risks (banking sector)
 - Group solvency and integration of CRTIs (Capital and Risk Transfer Instruments)
 - Organization of orderly run-offs



2. Selected forms of regulation in the insurance industry

- Group solvency
 - How is an adequate and at the same time not too complex assessment of capital and risk interdependencies (CRTI-approach) within a financial group possible?
 - Integration of non-regulated entities of the group?



3. Some implications of regulation for primary P&C insurers

Outlook

- Extensive regulation may introduce additional systemic risk in the insurance market
- Safety level gains more importance as a competitive factor (cf. the transparency rules within the 3rd pillar)
- Ambitions to re-regulate increase transaction costs of insurers and the price of insurance products; thereby, cost-benefit-ratio of regulation is mainly unknown
- Appropriate impulse for risk management through Solvency regulation (?); increasing importance of reinsurance
- In general: Different regulatory concepts lead to highly different signals and hamper the management of an insurer

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