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Eidgenössische Finanzmarktaufsicht FINMA
Autorité fédérale de surveillance des marchés financiers FINMA
Autorità federale di vigilanza sui mercati finanziari FINMA
Swiss Financial Market Supervisory Authority FINMA

Swiss Solvency Test – Where to from now?

PRMIA Zurich

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Agenda

- Comparison SST and Solvency II (Pillar 1)
- Internal model review
- Equivalence Swiss Supervisory System – Solvency II

Comparison SST – Solvency II Valuation (1/3)

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Risk-free interest rate

The relevant risk-free interest rate term structure shall be the sum of

\+ Basic risk-free interest curve

- *derived on the basis of swap rates*
- *adjusted to take account of the credit risk (10 bps in QIS5)*
- *extrapolated beyond the last reliable data point ("last liquid point") towards a long term interest rate ("ultimate forward rate")*

\+ Counter cyclical premium [Proposal for Germany's "QIS6": 84 bps]

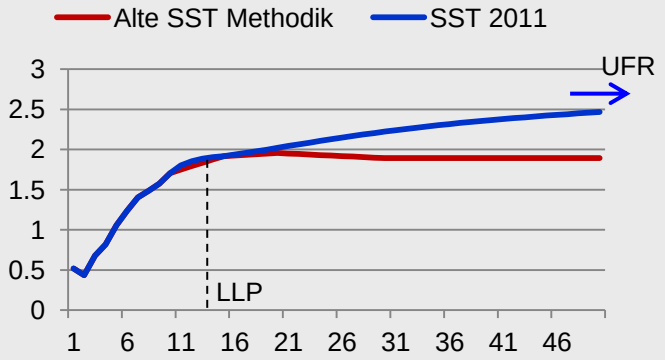
\+ Matching premium

The relevant risk-free interest rate term structure is based on *government bond yields* (Appendix 3 ISO) and currently extrapolated to an UFR

The Solvency II risk-free interest rate curve has many degrees of freedom which allow EIOPA to take action in periods of stressed financial markets

Synthetic interest rate curves may endanger the overarching principle of market-consistency

Inspired by the QIS5 methodology, FINMA defined the risk-free interest curve based on observable market data (government bond returns) up to a LLP, defining the starting point into extrapolation (towards an UFR)



Challenges for Risk Managers

- dealing with potential inconsistencies in the context of
  - valuation of assets and liabilities
  - valuation and risk measurement
  - the discount rate, the replicating instruments / replicating portfolio and the market value margin

Challenges for FINMA

- ensure that the proper market-consistent values of insurance liabilities are not *underestimated*
- ensure that their regulations do not become inconsistent

Comparison SST – Solvency II Valuation (2/3)

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Boundary of an insurance contract	
	Insurance obligations shall only be recognized within the *boundary* of the contract • Example: when the insurance company has the unilateral right to terminate the contract, then any obligations after that date *do not belong* to the contract • Future *premiums, benefits* and *expenses* relating to insurance obligations that fall *outside the contract boundary* shall be *ignored,* i.e. new business arising from the "rolling-over" of the existing contract is excluded!
	Current regulation requires that the *contractually binding insurance* obligations shall be recognized. Insurance obligations in *group life* are recognized *beyond* the contract boundary (e.g. 40-year projection horizon)
△	Solvency II is stricter. Note that the IAIS paper[1] ICP 14 "Valuation for Solvency Purposes" requires contract boundaries!

1) www.iaisweb.org/__temp/Insurance_Core_Principles__Standards__Guidance_and_Assessment_Methodology__October_2011.pdf

Comparison SST – Solvency II Valuation (3/3)

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Classification of own funds – Tiering of capital

Own funds are categorized in Tier 1, Tier 2 and Tier 3, depending on the quality of capital

- Tier 1: - includes *reconciliation reserve,* which in turn comprises *expected profits included in future premiums*
- Tier 2: - Basic own funds
  - ancillary own funds
- Tier 3: - Basic own funds
  - ancillary own funds

Risk-bearing capital is the sum of

+ Core capital
+ Supplementary capital

In the SST, there is no “tiering” of capital. The basis for the “SCR” and the “MCR” calculations are the same, irrespective of the quality of capital

Comparison SST – Solvency II
Risk measurement (1/6)

Solvency capital requirement	
	Value-at-Risk (VaR) measure with a 99.5% confidence level
	Expected Shortfall measure with a 99% confidence level
△	For normally distributed risks, the Expected Shortfall measure is slightly more conservative at the 99% level ($2.665 \cdot \sigma$) than the VaR-measure at the 99.5% level ($2.576 \cdot \sigma$).

Comparison SST – Solvency II
Risk measurement (2/6)

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Market risk: property, spread and concentration risk		
	• Property:	- capital requirement corresponds to an instantaneous decrease of *25%* in the value of real estate. - correlation between property and interest rate risk equals[1] 0 or 0.5
	• Spread:	- spread risk for bonds and loans depending on the *duration.*
	• Concentration:	- capital requirement based on *excess exposures*
	• Property:	- capital requirement is based on *real estate index returns* plus a *real estate scenario* - correlation between property and interest rate risk *based on historical data*
	• Spread:	- spread risk for bonds and loans independent of duration
	• Concentration:	- If the model *understates* the impact of risk concentrations, then *specific scenarios* are to be defined and evaluated and taken into account in the target capital (FINMA Circular 08/44)
	No statement can be made as to the different effects	

1) depending on whether an *increase* or *decrease* in interest rates results in a loss

Comparison SST – Solvency II
Risk measurement (3/6)

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Scenario-based calculations	
	Solvency Capital requirement is based on the impact of scenarios on the basic own funds Examples: • instantaneous decrease of 25% in the value of real estate • instantaneous decrease of 22% in the value of equity investments • …
	Target capital is based on the impact on the risk bearing capital of • “normal” market movements *plus* • stress scenarios
△	SST capital requirements likely to be stricter (depends on the stress scenario specifications)

Scenarios aim to correct model deficiencies

Stress scenarios aim to correct the deficiencies of an analytical model. In particular, by addressing tail-severity and tail-dependency issues

- A scenario is defined via events of the form

$$S = \left\{ X_{k_1} \in A_{k_1}, X_{k_2} \in A_{k_2}, \ldots, X_{k_n} \in A_{k_n} \right\}$$

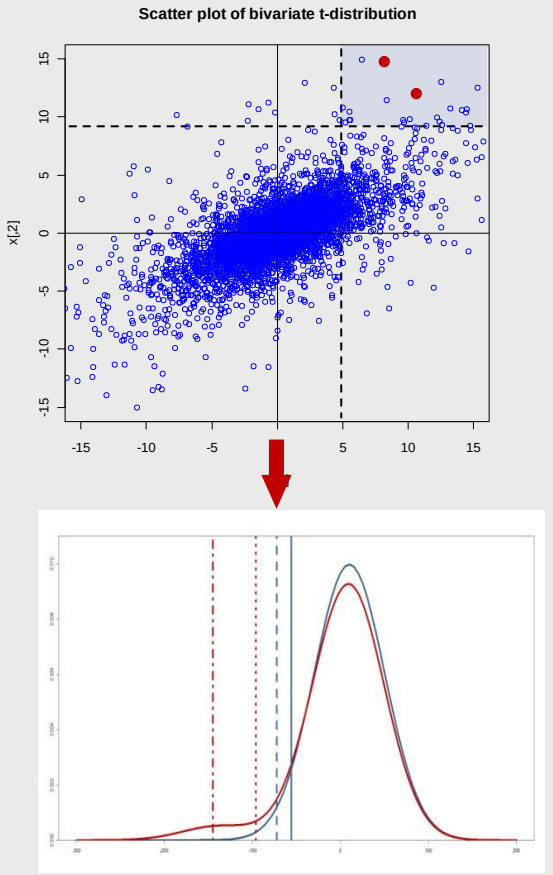
where the sets A are intervals of the form

$$(-\infty, x] \quad \text{or} \quad [x, \infty)$$

- Thus, the object of study is the following:

$$P\left[X_{k_1} \in A_{k_1}, X_{k_2} \in A_{k_2}, \ldots, X_{k_n} \in A_{k_n} \right]$$

➔ An insurance undertaking needs to demonstrate that its risk model assigns sufficient mass to the quadrants specified by the scenarios.



Increasing resistance against the concept of scenarios

- **Pre-financial crisis area**: The SST scenarios were introduced at the very beginning of the SST as a means to overcome the deficiencies of analytical models. In the pre-financial crisis area, the concept of scenarios was unquestioned.

- **Post-financial crisis area**: In the post-financial crisis area, however, the scenario concept is being criticized because of alleged
  - misspecification
  - double-counting
  - arbitrary return periods
  - competitive disadvantages with EU-insurers

- **Next steps**:
  - In the course of the year 2012, FINMA will review the scenario concept [number of scenarios, probabilities of occurrence, criteria for exclusion, …]

Comparison SST – Solvency II
Risk measurement (4/6)

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Credit risk	
	Capital requirement for credit risk includes: + counterparty default risk + *risk of deterioration in the credit standing* + market risk concentrations + [spread risk → market risk] – risk-mitigation effects of future discretionary benefits
	Capital requirement for credit risk includes: + counterparty default risk + *migration risk* + specific scenarios to take account for risk concentrations + [spread risk → market risk] – risk mitigation effects of future discretionary benefits
△	We expect no significant differences between SST and Solvency II capital requirements

Comparison SST – Solvency II
Risk measurement (5/6)

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Operational risk	
	The capital requirement for operational risks equals • 4.5‰ of the technical provisions for life insurance obligations • 3% of the premiums earned during the past 12 months (non-life)
	*No quantitative consideration* of operational risks in the SST. Operational risks are treated *qualitatively* (SQA; Swiss Qualitative Assessment)
△	Solvency II capital requirements stricter

Comparison SST – Solvency II
Risk measurement (6/6)

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Non-life underwriting risk

- Non-life insurance risk includes
  - premium risk (PR)
  - reserve risk (RR)
  - CAT risks (similar to the scenarios in the SST)
- $Corr(PR_k, RR_k) = 0.5$, $Corr(RR_j, RR_k) = 0.5$

- Non-life insurance risk includes
  - current-year risk (CY)
    - *normal claims*
    - *large claims*
  - previous-year risk (PY)
  - scenarios
- $Corr(CY_k, PY_k) = 0$, $Corr(PY_j, PY_k) = 0$

△ Solvency II capital requirements stricter. FINMA is currently reviewing the correlation assumptions

Though SST and Solvency II coincide in their core principles, implementations vary

- It is very difficult to compare the SST and Solvency II capital regimes and to isolate the contribution of individual effects
- Risk models and valuation methods must be further developed, taking into consideration the insights from the financial crisis
- Solvency figures likely to become meaningless if models and principles are simply twisted here and there

➔ The overarching market-consistent, risk-oriented principles should not be distorted!

Outlook:

- In the course of 2012 FINMA is reviewing the SST with regard to
  - scenario concept
  - non-life underwriting risk module
  - anti-cyclical measures

FINMA‘s internal model review process (1/2)

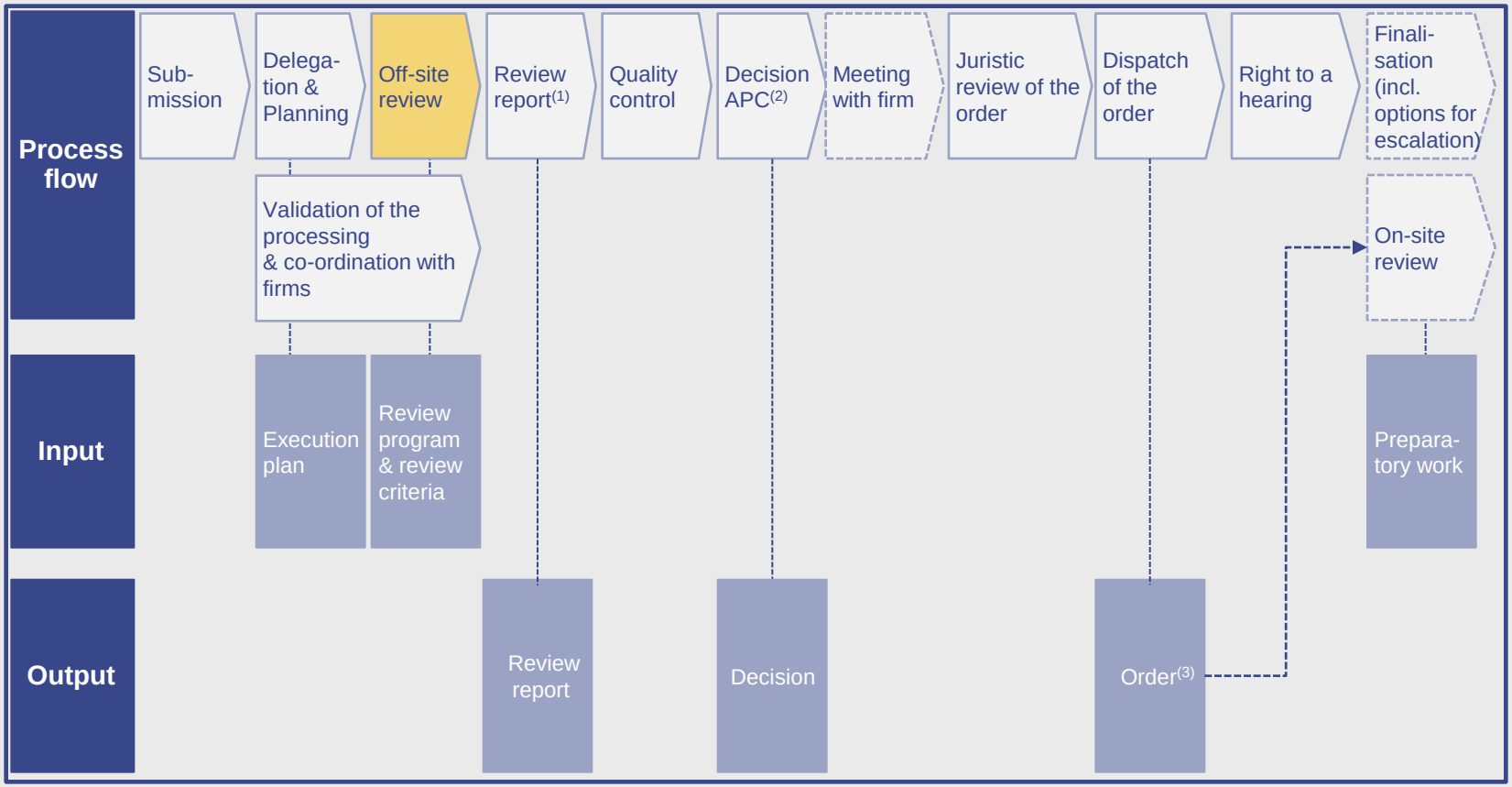
A The Insurance Supervision Ordinance allows firms to elect to calculate their target capital by using a **standard model** provided it matches the company-specific risk situation

B If the standard model is not suitable, then FINMA requires insurers to develop and use an (partial) **internal model**(1)

- There is no standard model for reinsurers and insurance groups
- About 70 companies (out of 140) applied to use an (partial) **internal model** for SST calculations
- **Important**: there is no pre-application phase. Once a firm submits a formal application to use an internal model under SST, the review process begins (no restrictions regarding review period).

(1) According to Article 43 of the Insurance Supervision Ordinance.

FINMA's internal model review process (2/2)



On-site reviews will be postponed (2012 and beyond)

(1) Includes the findings of the off-site review. Findings are categorized as follows: "serious", "moderate" and "slight"
(2) APC: Approval Committee
(3) The order can be: acceptance, conditional acceptance or a rejection of an internal model. Conditions under which a model can still be accepted are, among others: usage for a limited period of time or aggregation with additional stress scenarios

Up to date, FINMA has completed 27 model reviews

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- The result of a model review can be
  - Unconditional acceptance
  - Conditional acceptance [e.g. permission for a restricted period, increase of certain risk weights, ...]
  - Rejection
- Status as of 25.02.2012:

Sector	Unconditional acceptance	Conditional acceptance	Rejection
Life	1	3	1
General insurance	2	6	2
Health	1	0	0
Reinsurance	2	4	2
Insurance groups	0	0	3
Total	**6**	**13**	**8**

Challenges regarding the internal model review: equal treatment of what is identical…

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… and unequal treatment of what is not identical!

- Challenges regarding internal model review:
  - **Comprehensive model** documentations, but often incomplete and inconsistent in terms of language, style, level of granularity,…
  - **Equal treatment** of what is identical (in particular, equal treatment of comparable insurance undertakings)
  - **Treatment of applications for model *variations*** (only weeks or days after first authorization, or even weeks after the application for using an internal model …)
  - Dealing with **political interests** (game theory!)

John von Neumann

Equivalence Swiss Supervisory System – Solvency II

- On **26 October 2011**, The European Insurance and Occupational Pensions Authority (EIOPA) published three equivalence reports
- The goal of an equivalence assessment is to ensure that the third country regulatory and supervisory regimes provide a similar level of policyholder / beneficiary protection as the one provided under the Solvency II Directive.

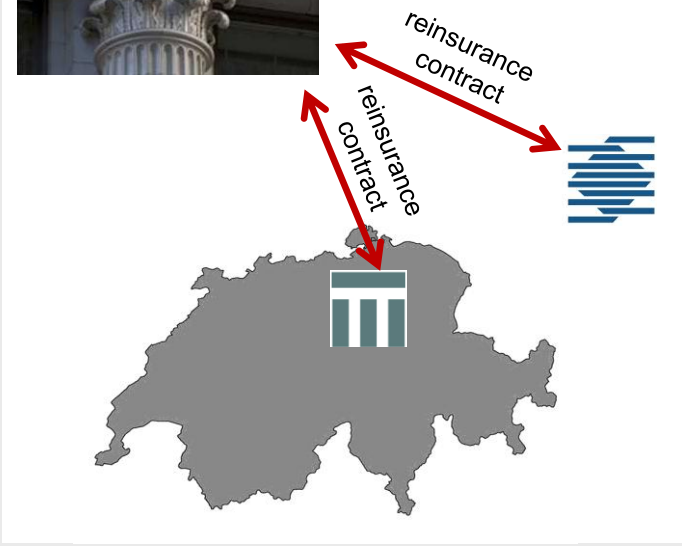
- **EIOPA advice on Switzerland's equivalence under Article 172, 227 and 260:**
- *Switzerland meets the criteria set out in EIOPA's methodology for equivalence assessments under Solvency II, but with certain caveats.*
- The caveats are:
  - *Public disclosure requirements not as extensive as under Solvency II*
  - *Not all insurers have a compliance and internal audit function*
  - *Solvency regime for insurance captives exempted from SST inadequate*

Implications of equivalence: Art. 172 «Reinsurance»

Working hypothesis: Swiss supervisory system is equivalent to Solvency II in relation to Art. 172, 227 and 260

- Art. 172 relates to equivalence wrt the *reinsurance activities* of insurers with their head office in the 3rd country concerned

Reinsurance contracts with insurers in the 3rd country would – from a supervisory perspective – be *treated in the same* way as reinsurance contracts with EEA insurers

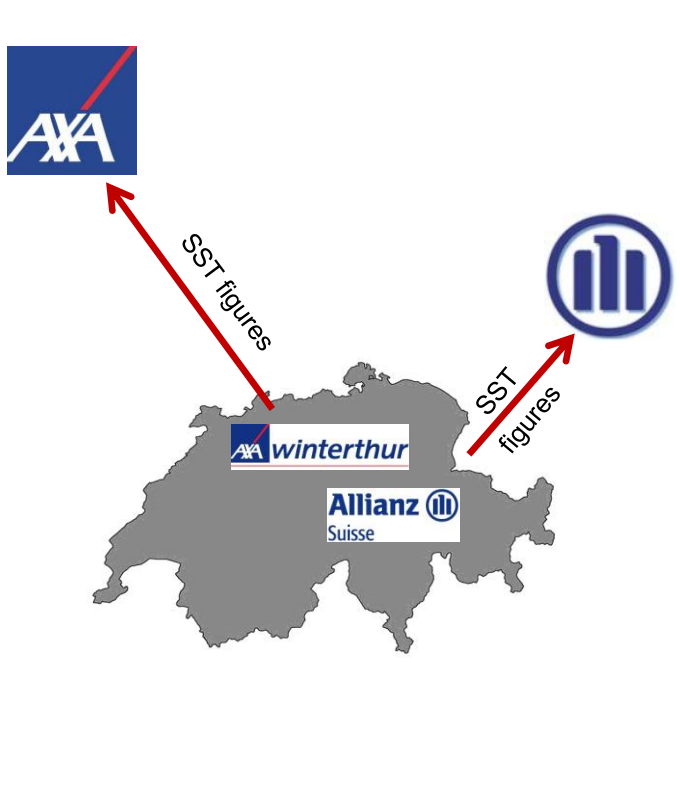


Implications of equivalence: Art. 227 «Group solvency calculations»

Working hypothesis: Swiss supervisory system is equivalent to Solvency II in relation to Art. 172, 227 and 260

- Art. 227 relates to equivalence wrt 3rd country insurers which are part of EEA groups and the way local solvency calculations are taken into account for group solvency purposes

EEA domiciled insurance groups would be allowed to take into account the SST figures when assessing the group's solvency[1] position



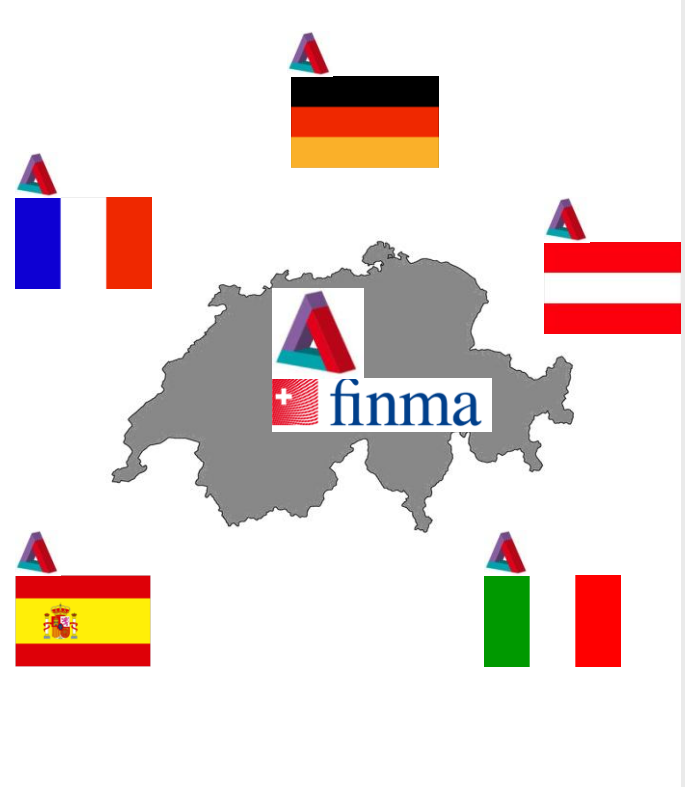
1) according to the deduction and aggregation method

Implications of equivalence: Art. 260 «Group supervision»

Working hypothesis: Swiss supervisory system is equivalent to Solvency II in relation to Art. 172, 227 and 260

- Art. 260 relates to group supervision of EEA insurers with parents outside the EEA

- Equivalence would mean EEA supervisors would rely on FINMA's group supervision
- no need for a "sub"- group supervision including the EEA-based subsidiaries
- Uncertainties surrounding the role of the "EU group supervisor" though



Conclusions

- The smooth implementation of the SST as per 01.01.2011 was a challenge for all involved parties
- The foreshadowing of Solvency II has a big impact on the SST
  - Swiss (life) insurance companies seek to align the SST with Solvency II, but only in areas where it is beneficial to them (e.g. risk-free yield curve)
  - It is very difficult to compare the two capital regimes and to isolate individual effects
- FINMA has a very critical attitude towards the point-wise adoption of elements from Solvency II. Taking over only certain elements will result in an inconsistent SST framework
  - All stakeholders should have an interest in a proper and consistent solvency framework
  - The overarching market-consistent, risk-oriented principles should not be eroded
- At the end of the day, it must be a political decision as to how much risk there should be in the financial system (confidence level)