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STEPHAN SCHRECKENBERG, Zurich

## Solvency II development in Europe

### 1 Introduction

#### 1.1 *Time for change*

A reform of the regulatory system for the insurance industry is fully underway. The UK and Switzerland have already initiated and partly introduced revisions; the European Union is discussing reform ideas under the heading of Solvency II. Asia and America are observing the development of the new European regime with great interest.

The idea of managing the financials of a firm with the aid of modern risk management techniques has been promoted over the last decade: notions of balance sheet management, a better understanding of the role of insurance to mitigate risks, improved insight into and measurement of risks, the idea of replication of financial claims as well as shareholder concepts like cost of capital have emerged hand in hand with a better recognition of the demands of various stakeholders, like policyholders or investors. Competition and comparison with the banking sector has certainly increased the transfer speed and the development of economic thinking to the insurance sector.

In every accounting regime losses on financial or insurance exposures, even though not materializing immediately as cash payments, are readily recognized—usually with some lag—as value losses. The idea therefore to consider “economic value changes” as the common denominator of risks has introduced a move to a comprehensive, integrated view across all risks impacting on the value of the company. This move initiated an important debate about meaningful steering instruments for leading an enterprise on an economic basis which in turn raised questions about the appropriateness of using current financial statement information for this purpose.

Shareholders demand information from companies mainly about profitability, i.e. how profit relates to the risk that is borne. Policy holders focus on the ability to provide financial compensation at the time when it is needed. Rating agencies are concerned about the assessment of financial strength and market standing. Regulators are concerned, in part on behalf of policyholders, about the proper running of the firm in order to ensure obligations are met. It is evident that a company must strike a balance between being successful in competing for capital,

and providing a service and security at a level that is attractive to policyholders whilst meeting the requirements of the law.

The rise of risk management as a discipline over the last decade is testimony that it is considered to add substantially to the proper conduct of the firm: this relates not only to its quantitative contribution but also to areas of risk governance, e.g. questions of detecting and addressing conflicts of interests via proper separation of roles and responsibilities. This has, in general, resulted in a move to increase transparency, not least with a view to rebuilding reputation in the wake of industry events of the past years. The insurance industry is now more visibly recognized as an integral part of the financial service industry, with corresponding expectations on transparency and excellence.

These considerations will not be at the forefront of the attention of the majority of the ca. 5000, mainly non-listed, insurance companies in Europe. Indirect implications however, like the competitive environment, efficiency of scale promoted by increasing consolidation as well as increasing globalization, that manifests itself through, for example, faster movement of capital in and out of industries, promote the recognition of these market forces and an alignment of interests among all players.

The basic mechanism of producing insurance cover is traditionally described by way of “pooling”. By pooling a large number of sufficiently independent risks across risk types and geographies and sharing them and the corresponding risk capital requirement internationally, the insurance market is able to fulfill its role as absorber of the financial consequences of adverse events. Recently, also financial markets have contributed to this role via the rise of insurance linked securities. Coping with todays risk landscape draws even more on this ability to pool, transfer or spread risks with efficient provision of capital support in times of need to the policyholder. And, of course, companies want such prudent risk management activities to be adequately recognized when capital requirements are being formulated.

While the ability to spread risks and to transfer risk capital funds is necessary to fulfill the role of insurance, national regulatory regimes usually inhibit the functioning of this mechanism to some extent. This has given rise to particularities in the legal framework in which business is conducted. As regulation impacts the implementation of the business model and the economic cost of doing business, e.g. by having to set up many national carriers, a regulatory reform affects either in a favorable or unfavorable way the market standing of insurance business.

There is general agreement among the industry and regulators that current solvency rules in Europe need to be revised to adequately cope with today's environment. Solvency II provides the opportunity to reshape these conditions. A clear view of the regulatory objectives of such a reform will be an important

guide to striking a balance among the various demands of stakeholders relevant for the industry. The European Commission (EC) has set out such goals; they are stated below. It is expected that as a result companies' and regulators' views will converge.

The European Union (EU) is not self-sufficient from an industry perspective: risk emanating from the EU countries are transferred to third countries and vice versa. Laying out conditions for acknowledgement of a third country's regulatory regime as being "equivalent" thus form part of the debate. These conditions will, for example, affect how risk transfer to and from those countries will be reflected in capital requirements.

Switzerland is a large insurance market in Europe; a significant part of the Swiss companies' premiums originate in Europe. The industry provides major service and expertise to its clients all around the globe. Smaller companies are important for the local market, in respect of innovation and setting risk management competence standards for companies that can, in general, not draw on a relatively large pool of resources.

Switzerland, while not being a member of the EU, has thus a close economic interest in the Solvency II development. It is of direct concern for the industries' business practice, its competitiveness and thus its market opportunities.

## *1.2 Aim of the article*

This overview article aims to describe and explain developments at a European level and to indicate how Switzerland or the Swiss industry, while not being a member of the European Union, is engaged in these discussion. It is directed at a reader who has not been much exposed to Solvency II, is curious about the current status of the debate and might want to find a starting point to follow the discussions.

The first part of the article provides an overview of the Solvency II project goals, the set up and some terminology. It describes the way in which the shaping of the regime takes place.

This is followed by an overview of the status of the project, its relevant issues and a sense of the contentious points at the current time. This will facilitate some comparison with Swiss Solvency Test (SST) concepts.

Switzerland has been one of the thought leaders on particular topics, both from a pragmatic and conceptual viewpoint. This is reflected in the way the Swiss regulator and the industry contributes to the discussion which I will try to sketch throughout the article. The main organized stakeholders are briefly introduced.

A summary concludes this overview with some further references provided.

Two concerns need to be addressed from an actuarial perspective: first, do the proposed risk and capital models align well with the aims of such a regime revision and second, given those aims, is the model implementation, incl. calibration etc., adequate to capture the respective risk or valuation characteristics.

Knowing the context in which statements are made and models are proposed, in particular when they are still sketchy, is as important as an adequate understanding of the mathematical characteristics. This enables the profession to address the right issues at the right time in a legislative process that is now being prepared. The right advice or guidance provided too late will not serve the purpose in a process where sometimes timelines or other interests take priority.

## 2 Solvency II

### 2.1 *Objectives*

The European Union has committed itself to establish a single, integrated European market with state of the art prudential rules and supervision. The corresponding reforms aim to remove obstacles to the free movement of services and capital as well as to the freedom of establishment of operations throughout the European Union, [European Commission (2005)].

The goal of the “better regulation” agenda for insurance is to deepen the integration of the EU insurance market, to increase the competitiveness of the industry and to improve protection of policyholders.

The new solvency regime should thus address all three aspects. By involving governments, finance ministries and national supervisors in the decision making, the varying emphases among those groups are reflected.

From these goals properties of the new system are being derived: it should be based on economic principles, be risk adequate and flexible enough to accommodate future product innovation, give reasonable assurance to policyholders about the company’s financial strength to absorb significant losses and incentivise companies to improve their internal risk management in line with best practice. It should be applicable to large groups as well as smaller players, ensure a comparable treatment of companies with similar risk profiles and be able to be applied throughout the EU. It should be as simple as possible under these constraints, not extremely costly in the long run and add to the efficiency and competitiveness of the industry via a more risk adequate capital allocation.

## 2.2 Who is involved?

The legislative process for solvency will follow a “Lamfalussy process”. Describing this process provides a good overview on how the regime is shaped and stakeholders become involved.

There are four hierarchical levels, linked to decision powers:

- Level 1: European Parliament and European Council (level of governments). They need to agree together with the EC on the high level ‘insurance directive’, which outlines the framework and thereby provides some level of coherence across national regimes.
- Level 2: EIOPC<sup>1</sup>, committee at the level of finance ministries and supervisors. It needs to consent to more detailed, technical measures implementing the directive (“implementing measures”). Its brief is to further cross-sectoral regulatory cooperation together with the delegation of tasks and responsibilities aimed at efficient supervision; for example, the treatment of “insurance group supervision” across national borders. Consent of the European Parliament is also required for the adoption of level 2 measures.
- Level 3: CEIOPS<sup>2</sup>, committee at the level of national supervisors: They will determine standards in areas not covered by EU legislation, e.g. by supervisory co-operation and peer reviews. Their brief is to compare supervisory practices and to enhance their convergence.
- Level 4: Enforcement of the application of legislation in member states by the European Commission.

At the same time the EC acts as a project manager that must propose the directive and the implementation measures at level 1, 2; the EC must engage CEIOPS as a consultant to prepare advice on those issues before any directive is proposed. The commission specifies in its “calls for advice” to CEIOPS the relevant topics to be advised on, [CEIOPS (2006a)].

Before any of CEIOPS’ advice is submitted to the EC and the EIOPC, it has to go through a “public consultation process”. This provides stakeholders with an opportunity to comment on the draft advice, i.e. the “consultation papers” (CPs) issued by CEIOPS, during a certain “consultation period”. A “consultative panel” from industry and consumer representatives must be involved. After adjusting for comments the advice is labeled as final and submitted to the commission.

<sup>1</sup>“European Insurance and Occupational Pensions Committee”

<sup>2</sup>“Committee of European Insurance and Occupations Pensions Supervisors”; composed out of representatives from the supervisory authorities of EU and EEA member states.

The EC can deviate from the final advice of CEIOPS, i.e. is not obliged to follow it when formulating the proposal for the directive or the implementing measures.

For this reason, the industry and other stakeholders also engage actively with representatives of the parliament and council, the EIOPC as well as the commission itself to inform or lobby as those parties might place different emphasis on issues than CEIOPS does on the level of national supervisors. Together with rather short consultation periods this poses some challenge to address issues consistently.

Finally, any such proposal has to be accompanied by an “impact assessment”, outlining costs and benefits in an economic and social dimension. The resulting report needs to include an impact analysis on financial stability, proper functioning of markets and consumer protection. For example, any significant shifts of insurance companies’ investment books resulting from a change of regulation might influence the demands on capital markets. For such reasons the European Central Bank also contributes this analysis.

### 2.3 *Timelines*

At the time of writing, December 2006, the commission is drafting the insurance directive and will present it to the parliament and council in July 2007. During this period the corresponding impact assessment report is formulated. A third preparatory quantitative impact study (QIS 3), testing calibration issues of the proposed solvency capital & risk models, is now prepared and will be conducted between April and June 2007 with companies residing in the EU. CEIOPS will be finalizing its response to the EC’s current calls for advice early 2007. Final Advice on the standard formula is expected in Spring 2008. Introduction of the new regime is planned for 2010.

The calls for advice, and consequently CEIOPS’ advice, span an incredibly large and complex subject matter, [CEIOPS (2006 a)]. These issues (including technical issues) neither need to, nor will all be finalized in time for the directive proposal in July’07. By the time this article is published relevant high level decisions will have been taken.

At the moment there is uncertainty which topics will be decided on in level 1 or level 2, 3. This allocation has a bearing on the level of harmonization of the interpretation and implementation of the reform principles across national regimes: the flexibility of local regulators/supervisors to interpret the guidance provided at the previous level increases from 1–3. As a result, during the run-up, a mix of detailed issues and high level principles are being addressed.

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## 2.4 Content

While developments are still under way a regime is nonetheless emerging that will be based on a three pillar structure.

1. The first pillar determines a quantitative assessment of an adequate capitalization for a solvency assessment period spanning 1 year, based on a standard or an internal model. Apart from available capital (AC), a solvency capital required (SCR) will be derived from the models specifying the capital amount needed to ensure that the company is able to withstand significant losses. The quantitative assessment should cover the company's net exposure to market-, credit-, insurance underwriting- and operational risk. Determination of a minimum capital required (MCR) as the ultimate point of intervention for the supervisor, completes the formal set up.
2. In the second pillar, qualitative issues, like company internal governance and process issues will be addressed. Supervisors will presumably be granted powers to demand capital add-ons to the SCR or deductions from the AC to address process issues or items not sufficiently covered in Pillar I. A supervisory "ladder of intervention" will determine the nature of consequences of available capital falling somewhere in between SCR and MCR.
3. The third pillar addresses mainly transparency, supervisory reporting and public disclosure.

The industry has argued consistently for an economic, market consistent approach. In light of the three pillar structure the arguments and comments mainly center around three themes:

- Keep to an economic approach in valuation as well as risk assessment matters. Address assets and liabilities on the balance sheet in an integrated, consistent manner. Ensure a true and realistic assessment of companies. Avoid distortion of this picture through scattered introduction of prudence elements. Ensure that even simplified, standard approaches adhere to these principles.
- Ensure convergence of discretionary supervisory powers and practices across Europe to provide comparability as well as legal- and operating security to companies to build an efficient market.
- Ensure that supervisory collaboration is addressed in an efficient, international manner, to contribute to a cost-efficient supervision that is proportionate to the undertaking.

### 2.4.1 Available Capital

Available Capital will be determined as the difference between a market consistent value of assets and liabilities. It is proposed that liabilities be valued according to the price of the instruments that are available in deep, liquid markets, that can be used to replicate or hedge the financial claims on the company stemming from the portfolio.

For those risk characteristics of the liabilities that cannot be hedged a “risk margin” needs to be added to account for this risk. CEIOPS recommends the use of the “cost of capital” approach that interprets the risk margin as costs incurred to secure provision of risk capital for those unhedgeable risks in future years. This is similar to the SST approach, [FOPI (2006)].

The alternative discussed is the “percentile approach”: instead of determining the cost of providing risk capital for the risk in future years, this approach aims to quantify the risk capital amount itself. After some discussion, the industry argued strongly for the cost of capital approach, not least for having all items that contribute to the risk, i.e. the fluctuations around the best estimate value during the solvency assessment period, dealt with in the calculation of SCR.

The notion of a deep, liquid market, and assumptions entering into the “cost of capital” approach calculation to determine the economic liability, i.e. assumptions relating to a going concern or run-off assumption, the use of company specific information, projection methods as well as the cost of capital rate to be used by companies will be subject to further investigation.

Assets values should be market consistent. The industry argues that, where the risk characteristics are captured appropriately by the respective risk models, no further restrictions or limitations should apply to avoid double counting of risk. However, admissibility-, eligibility criteria as well as investment rules are proposed by CEIOPS, i.e. a selection and qualitative classification of assets eligible for the solvency assessment with constraints or limits on the amount admissible within each class. A clearer view is needed of what qualities risk models should possess such that these restrictions are not needed.

There is general agreement to pursue a “total balance sheet” approach, that is considering assets and liabilities of the total balance sheet when setting up the economic view.

For the SST this total balance sheet forms the basis for the calculation of SCR. However, some argue that when calculating the SCR one should consider risks on a specific sub-balance sheet that includes the liabilities, but assets only to the extent that the resulting SCR of this sub-balance sheet equals the corresponding available capital of the sub-balance sheet. It is argued that remaining assets (“free assets”) would thus not need to be included in the SCR calculation for the

company. Logically, however, any leverage in this remaining part, resulting in the possibility of reducing these “free assets” below the value of zero, may affect policyholder protection negatively, i.e. it may increase the likelihood of the value of assets falling below the SCR level of the sub-balance sheet.

The time horizon for solvency considerations is proposed to be one year, covering the risk and expected profit from new business during this period. The exact understanding of the time horizon for the assessment of solvency, its relation to the period during which the portfolio is at risk as well as to the period during which revisions of best estimate projections can materialize, has given rise to some discussion.

For the SST, changes to the economic value of assets and liabilities that are caused by the arrival of new information during the solvency assessment period (i.e. 1 year) are relevant; this includes, for example, considering resulting changes to expected cash flows in future years.

#### 2.4.2 Required Capital-Standard Approach

At the time of writing this article, the calculation of required capital for the company, SCR, under the standard approach is suggested by CEIOPS to be based on a modular, kind of multi-factor, approach. Risks are divided into the categories “market risk”, “default risk”, “life risk”, “non-life risk”, “special risks” (e.g. health risks), and “operational risk”.

These categories are further divided into sub-categories, i.e. market risk is partitioned into interest rate-, equity-, property-, currency-, spread- and concentration risk; life risk into biometric-, lapse-, expense-, mortality-, longevity- and catastrophe risk; non-life into premium-, reserve- as well as catastrophe risk.

In preparation for QIS3 the following type of formula has been suggested by CEIOPS:

$$\begin{aligned} \text{SCR} &= \sqrt{\sum_{i,j} \rho_{i,j}^0 * \text{SCR}_i * \text{SCR}_j + \text{SCR}_{\text{OpRisk}}} \\ \text{SCR}_i &= \sqrt{\sum_{k,m} \rho_{k,m}^i * C_k^i * C_m^i} \end{aligned}$$

$\text{SCR}_i$  refer to a capital requirement of a category excluding operational risk, and  $C_i$  to the capital requirement of its sub-categories;  $\rho^0$ ,  $\rho^i$  correspond to prescribed correlation matrices at the appropriate hierarchical level.

Calibration level for the sub-categories might be either the 99.5% quantile or TailVaR at a lower level, possibly at 99%. While some CEIOPS members favor TailVaR, the European industry at large has voiced its preference for VaR.

Catastrophe risk assessment on the insurance side is proposed to cover natural- and man made catastrophes per line, respectively per group of risks that can be considered suitably “homogeneous”. The assessment would be based on independent scenarios of a certain probability, prescribed by supervisors with partly market shares or sums at risk measures quantifying the companies’ exposure. Premium and reserve risk is dealt with by single factors per line that sometimes allow for a certain portfolio diversification effect due to the size or number of policies.

Market risk assessment is based on simple factors that represent negative returns of selected indices. For interest rates the higher loss resulting from a stress test of an up- or downward movement of interest rates across different maturities is selected. Accumulation of exposure to single counterparties, is accounted for as “concentration risk” in addition to the risk captured by mapping to an index only; this assessment is rating dependent and determined by an additional charge upon exceeding certain “concentration limits” per sub category. Default risk considers default of a counterparty to risk mitigating contracts. Some form of KMV type ansatz is suggested, which also considers the number of counterparties involved in risk mitigation.

Risk arising out of new business over the assessment horizon (1year) should be incorporated in the SCR. The corresponding expected profit out of non-life is suggested to be treated either as an increase in available capital of a certain eligibility class or be subtracted when calculating the required capital. The possibility of reducing future profit sharing for profit sharing business in life insurance is suggested to be incorporated in a simplified way by adjusting the category level  $SCR_i$ , e.g.  $SCR_{market}$ .

The operational risk capital calculation is also proposed to be factor based with earned premiums or technical provisions as volume measures; the overall magnitude is limited by a percentage of  $\sqrt{\sum_{i,j} \rho_{i,j}^0 * SCR_i * SCR_j}$ , before any adjustment of the category level  $SCR_i$ .

For further details, see CEIOPS consultation paper CP20 and its supplemental comments, [CEIOPS (2006 a)].

Problematic issues are well known for such formulaic approaches based on factor models that, e.g., take only premium or provision volume as exposure measure and only historical or market wide information as basis for calibration: for example the difficulty to interpret the formula as being derived from a simplified stochastic risk *model*, or the inability to properly reflect dependencies and diversification

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effects on a company level, to realistically take account of risk mitigation or to appropriately reflect the current risk profile of the company.

However, in comparison to the first proposals of CEIOPS, this latest suggestion incorporates diversification, albeit in the form of correlation only. It incorporates some limited flexibility to choose among techniques-factors or scenarios-for some risk classes, to take in some limited way non-proportional risk mitigation into account, to partly determine company specific parameters, e.g. introducing “size factors” to reflect diversification at portfolio level when determining factors for premium- or volatility risk and to partly incorporate some forward looking information.

There is certainly a wide gap between the proposed standard model and today’s best practice risk measurement. The industry and the profession is asking for further improvements to the standard formula for incorporation in QIS3.

Current actuarial practise, though, seems to vary widely across Europe. It could be argued that the review of the systems provides an opportunity to significantly broaden the use of appropriate actuarial techniques across Europe; in particular as the introduction of the system leaves still some time for education. Nonetheless using well known actuarial models, like compound poisson models, to better address non-proportional risk mitigation, was deemed to be too difficult to be acceptable at the moment for use in a standard model for insurance across Europe.

In part these issues could be addressed through the partial use of internal models substituting for components of the standard model. The conditions of use are still under discussion, including addressing concerns of “cherry picking” by companies, i.e. use of partial internal models only when capital requirements would fall. Aligning regulatory models with internal steering instruments is one way to provide an incentive to use the appropriate models

The standard approach will presumably become the default approach unless an internal model is approved. Applying an internal model might not replace the need for the standard model entirely: it is still open whether or not an SCR calculated via the standard model has a role to play when determining a floor for the capital requirements derived from internal models.

#### 2.4.3 Group Issues

Diversification results in an SCR at consolidated group company level that will, in general, be smaller than the sum of the standalone SCR requirements for the entities belonging to a group. Acknowledging this effect and its economic implication from the start in the Solvency II framework calls for a balance of

holding some capital locally and at group level while ensuring availability in times of need locally.

The MCR should also provide an absolute floor to the capital requirement, determined in a simple, auditable, objective way. How the MCR will be derived is still being discussed; it could be derived in the same way as the SCR but at a lower confidence level, it could be a percentage of the SCR, or it could be calculated via some simplified standard formula. As the MCR most likely has to be held locally, this puts a bound on the magnitude of MCR: the sum of local MCR's should, in general, not exceed the SCR at group level.

CEIOPS has discussed options of either increasing available capital at the standalone entity ("solo level") through contingent capital support from the group to cover a possible gap between available capital and SCR at the solo entity or reducing required capital in each entity to allow for the diversification effect. Recently the UK Treasury and Supervisor have taken this a step further, [HMT, FSA (2006)]. An insurance group would have to hold capital in each entity to cover only technical provisions, incl. risk margin, and local MCR; the sum of local MCR's would form the floor for an SCR that is calculated for the whole group. The group must hold capital covering the difference between SCR and the sum of all local MCR's in its legal entities; it must ensure that capital is transferable within and across national borders such that for each entity unexpected losses up to the local, solo SCR level can be met timely. Again, how much diversification could effectively be taken into account depends crucially on the locally required MCR's.

The Swiss supervisor requires for the quantitative assessment of the capital adequacy of groups an adequate capitalization of the group's legal carrier. Subsidiaries are treated on the parent's balance sheets as assets which may default. Each regulated Swiss entity must be adequately capitalized when taking all contractual obligations into account, including the contractual support it may receive from its parent or may need to give to its subsidiary.

The concept of a "lead supervisor" for international groups should facilitate dealing with these inter-national issues. This immediately opens a debate on the distribution of tasks and responsibilities among the local- and the lead supervisor, e.g. regarding approval for internal models on group level. Becoming acknowledged as an equivalent supervisory regime would certainly be advantageous in those discussions.

Without doubt, any solution will affect the organizational set up of companies in the future.

#### 2.4.4 Calibration

CEIOPS has conducted two preparatory quantitative impact studies (QIS1 and QIS2). QIS1 dealt with the valuation of technical provisions, tested various actuarial reserving methods to determine “best estimates” and aimed at quantifying the percentile approach. QIS2 tested the cost of capital approach as well as various formulas for the standard approach to SCR and MCR, [CEIOPS (2005), CEIOPS (2006 b)].

Structurally, QIS2 proved that even within the standard approach flexibility is needed, i.e. that applying scenario modelling techniques for some risks is better suited than the use of factors to calculate SCR. It showed problems with some methods for the MCR, indicated some issues with the treatment of profit sharing business, showed that the cost of capital approach was feasible and that it resulted in values comparable to the 75<sup>th</sup> percentile under the percentile approach<sup>3</sup>. While not resolving conceptual issues, this result relieved some of the supervisors concerns.

While QIS2 was not aimed specifically at parameter calibration it clearly showed that calibration of factors will be of major concern. In preparation for QIS3 the industry has been asked to provide their views. As discussed above, the structure of the formula implies that, among other things, some correlation parameters would need to be company specific instead of market wide. From this point, standardizing or harmonizing methods to arrive at parameters, rather than standardizing parameters themselves, would go some way to resolve this issue.

#### 2.4.5 Pillar II, III

CEIOPS directly links Pillar I and Pillar II by considering a trade off concerning on the one side risk sensitiveness versus simplicity of the standard approach, and between simplicity and the need for “capital add ons” to the capital requirements, SCR, on the other.

Pillar II is thus a very important tool within a comprehensive supervisory system. It will not only address governance, process and infrastructure issues, comparable to the internal control system currently discussed in Switzerland, but also address issues that are not sufficiently captured in Pillar I or require supplementary analysis, like effects of business plans.

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<sup>3</sup>There is some uncertainty about the level of consistency in the interpretation and implementation of QIS2 across companies.

The considerations under Pillar II are thus likely to often link to quantitative models, like criteria for the approval of internal model or validity of supplementary analysis. In order to ensure that similar issues are treated similarly across Europe discretionary powers of supervisors should be transparently defined and applied. This relates to decision criteria for capital add ons or capital reductions, their possible size as well as form and strength of supervisory intervention. Here, discussions have just begun.

The same holds true for pillar III. The current proposals cover a large area of reporting requirements but do not distinguish sufficiently among information needs for different stakeholders. Policyholders' needs differ from those of supervisors, and all of the information for supervisors may not be disclosed publicly, for example for reasons of retaining competitive advantages. Reporting requirements should be aligned and streamlined for groups but also for small and medium sized companies in line with the principle of a supervision proportionate to the undertaking.

#### 2.4.6 Impact report

At the time of writing, preparatory studies by the EC are being conducted. The CEA, the European insurance association, for example, is also preparing a study that is concerned with likely implications of the introduction of the new regime with respect to product innovation or supply, investment behavior, funding need and the cost of raising capital. Such information will contribute to the overall impact report.

A study commenting on possible effects of the introduction of the SST was recently released in Switzerland, [Universität St. Gallen (2006)]. For example, one conclusion of this paper was that a change in demand for longer term financial market instruments was likely in the wake of better asset liability management.

### 3 Main contributors

The industry and other stakeholders are organizing themselves and trying to join forces in an attempt to form a common position that can be communicated to decision makers. This is a huge task: while all concerned share the common aim of reform, diverse opinions on specific matters make arriving at a common view across Europe challenging.

About two years ago the industry awoke to the urgency of the subject; this was due to recognizing that only little time was left until the start of the

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legislative process. Since then the Committee European des Assurance (CEA), has been instrumental in uniting and formulating industry positions. The Swiss insurance association along with other nation's associations is a member of the CEA. Representatives participate regularly in Solvency II relevant bodies, like the "Economics and Finance Committee", the "Solvency II Steering Group" or the "Reinsurance Advisory Board". CEA provides industry commentary to CEIOPS' advice, formulates industry position papers, sometimes including concrete technical proposals (like a solvency risk model, called "European Standard Approach"), and actively engages in direct contacts at all levels, [CEA (2006 a), CEA (2006 b)]. The "Pan European Insurance Forum", composed of company CEOs, developed out of the former "CEA contact group".

While CEA represents the European insurance industry as a whole, the "Chief Risk Officer Forum" (CROF) comprises a group of about a dozen larger international companies including Zurich, SwissRe, Winterthur and Converium. Due to their international character and size some issues are particularly important, for example, recognition of diversification, risk transfer, valuation methods, and issues related to group (rather than local entity) supervision or disclosure. They provide their perspective in close collaboration with the CEA [CROF (2006)]. On the opposite side, small and medium sized companies are particularly invited by the EC to bring forward their views.

The new solvency regime will require balance sheets to be available that are drawn up on principles closer to economic valuation principles than today. The international accounting standards board (IASB), is currently revising accounting standards for insurance contracts. As the objectives for financial reporting are not necessarily identical to those of solvency assessment, for example, regarding the timing of profit recognition, one aims for at least reconcilable statements. The IASB project is likely not to be concluded before Solvency II is formulated. The "Chief Financial Officer's forum", addresses both developments and thus performs an important function of aligning the industry views in both contexts.

The Group Consultatif Actuariel Europeen, the association of actuarial associations in the EU, provides the profession's perspective on some of the developments, [Group Consultatif (2006)].

The IAIS, the international association of insurance supervisors – which includes Switzerland –, takes an active part in formulating global standards for insurance supervision as set out in a series of papers outlining core principles for a new solvency regime, [IAIS (2005), IAIS (2006)]. The European Commission is mindful to create a regime that is aligned with developments at the non-European level.

Single countries contribute to the debate by way of example. In particular, the experiences in the UK and Switzerland are being closely monitored. Both

countries have already introduced a new, risk based solvency standard, that possess some of the qualities sought. They represent, at the moment, some of the most advanced regulatory regimes, [CEA (2005)].

The Federal Office of Private Insurance of Switzerland (FOPI), and the Swiss industry has communicated on numerous occasions the SST framework and the results obtained from the test runs. This information – which was also provided by smaller companies – provided important evidence in favour of the argument that concepts, like the cost of capital approach or risk modeling that can reflect non-trivial risk transfer characteristics adequately, are feasible and practicable. It proved that small companies can have sufficient expertise and know how to work with a risk based economic solvency framework that is more principle based. This “use-test” helped the Solvency II debate to more clearly separate the goals or principles of the reform from what might turn out to be short-term, temporary implementation difficulties.

Recently, in April 2006, FOPI and CEIOPS have signed a so called “Memorandum of Understanding”, that is designed to facilitate co-operation and information exchange among supervisors, which is relevant to achieve supervisory objectives; it does not directly affect FOPI’s involvement in Solvency II.

Single companies contribute via the preparatory “Quantitative Impact Studies” to testing the effect of the proposed capital and risk models. While the Swiss insurance market does not participate, some of the larger Swiss Groups take part via their EU based subsidiaries.

#### **4 Summary and Outlook**

We have provided an overview of the current status of the development of Solvency II. While the emerging system shares many of the objectives of the SST, important differences may occur in the concrete implementation and calibration. Regarding quantitative modelling, this project has increased the visibility of the actuarial profession and lead to an intense discussion of what best and standard actuarial practice across Europe is or should be. It aims to assess the risk of an insurance company in an economic, integrated, comprehensive way and thus reaches beyond areas of traditional actuarial expertise.

In the wake of the reform new research topics of both a theoretical and applied nature arise that are relevant to practice, addressing for example the structure of portfolio modelling, modelling of inter-portfolio dependency characteristics, aggregation methods or the optimization of risk sharing arrangements across a network of legal entities. Academic contributions are becoming more relevant. Supervisory proposals for ensuring comparability and quality of risk assessment

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among companies across supervisory regimes indicate the demand for developing more widely accepted methods or standards for such portfolio risk aggregation models.

The debate that has started now among the industry, the profession and supervisors has lead to some convergence of views; this is encouraging. We must make sure that contributions arrive in time to be relevant for molding the new solvency system.

## References

CEA (2005) *Solvency Assessment Models Compared*.

CEA (2006 a), commentary and papers available at [www.cea.assur.org](http://www.cea.assur.org).

CEA (2006 b), *Working document on the standard approach for calculating Solvency Capital Requirement*.

CEIOPS (2005), *QIS 2 technical specifications*, [www.ceiops.org/content/view/118/124](http://www.ceiops.org/content/view/118/124).

CEIOPS (2006 a), calls for advice and consultation papers CP1–20 ff can be found at [www.ceiops.org](http://www.ceiops.org). The site provides also stakeholders comments to regarding the CPs.

CEIOPS (2006 b), *QIS 2 Summary report*, *CEIOPS-SEC-71/06S*

CROF (2006); for more information see [www.croforum.org](http://www.croforum.org)

European Commission (2005) *White Paper, Financial Service Policy 2005–2010*.

FOPI (2006) *The Swiss Experience with Market Consistent Technical Provisions—the Cost of Capital Approach*; further material on the SST available at [www.bpv.admin.ch](http://www.bpv.admin.ch).

Group Consultatif (2006), commentary available under [www.gcactuaries.org/documents](http://www.gcactuaries.org/documents).

HMT, FSA (2006) *Supervising insurance groups under Solvency II – A discussion paper*.

IAIS (2005) *Towards a common structure and common standards for the assessment of insurer solvency: Cornerstones for the formulation of regulatory financial requirements*.

IAIS (2006) *Issues arising as a result of the IASBs insurance Contracts Project (Phase II), Second Set of IAIS Observations; more on [www.iaisweb.org](http://www.iaisweb.org)*.

Universität St.Gallen (2006), *Volkswirtschaftliche Implikationen des Swiss Solvency Test*.

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## Abstract

We provide an overview of the current status of Solvency II, the project for introducing a comprehensive reform of the supervisory system for insurance in the European Union. This project is characterized by an ambitious goal, high complexity and a tight time schedule. The emerging system shares many of the objectives of the SST although important differences may occur in the concrete implementation and calibration. Providing timely, constructive comments to the proposals will help to ensure that they more closely match the aims of the reform. Aligning opinions across industry and profession is key to influencing the course of the debate.

## Zusammenfassung

Wir präsentieren eine Übersicht über den aktuellen Stand von Solvency II, dem Projekt zur umfassenden Reform des Aufsichtssystems für Versicherungen in der Europäischen Union. Dieses Projekt ist gekennzeichnet durch ein ehrgeiziges Ziel, durch hohe Komplexität und einen straffen Zeitplan. Das entstehende System hat viele gemeinsame Gesichtspunkte wie der SST, obwohl wichtige Unterschiede in der konkreten Realisierung und Kalibrierung auftreten können. Mit rechtzeitig abgegebenen konstruktiven Kommentaren zu den Vorschlägen wird angestrebt, dass die Ziele der Reform so gut wie möglich erreicht werden können. Das Angleichen der Ansichten von Industrie und Beruf ist der Schlüssel, um die Richtung der Beratungen zu beeinflussen.

## Résumé

Nous donnons un aperçu de l'état actuel du projet de l'Union européenne Solvency II, consistant en une réforme profonde du système de surveillance des assurances. Ce projet est caractérisé par un but ambitieux, une complexité importante et un calendrier serré. Le système en élaboration partage plusieurs des objectifs du SST mais présente des différences importantes dans l'implémentation effective et le calibrage. En commentant à temps, de manière constructive et explicative les propositions de Solvency II on aidera à garantir que celles-ci cadrent mieux avec les objectifs de la réforme. La conciliation des opinions de l'industrie et de la profession est essentielle pour influencer les débats.