

CHALMERS UNIVERSITY OF TECHNOLOGY

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Solvency II

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1 Background

European insurers are the largest institutional investors in the financial markets within Europe [1]. A step in the direction of harmonizing the insurance supervision in the European Union was made in the 1970s. By then, 14 directories known as Solvency I was introduced to the insurance and reinsurance companies within EU with the aim of establishing a minimum capital requirement for the companies.

Even though Solvency I was an improvement compared to the previous solvency regimes within the union, it still showed some inadequacies. The regime did not take into account the risks, such as market risk, credit risk and operational risk, that the companies were facing and hence it did not differ between high-risk based and low risk-based undertakings. Due to the fact that the framework was not risk sensitive, a simple model was used to calculate the capital requirements, by calculating the requirements as a percentage of the provisions [2], and hence it did not establish each insurer's risks accurately [1]. Other weaknesses showed by Solvency I was that it did not provide full transparency on the financial positions and the intervention by supervisors. This made it uncertain if the company would be able to meet their obligations or not.

To further harmonize the consumer protection, a risk-based framework was desired and in January 2009 a new framework formally called Solvency II Framework Directive 2009/138/EC, or simply Solvency II, was approved. At first, the plan was that this new framework would take affect as of January 1, 2012 but due to some unanticipated implications it took until January 1, 2016 before the new regimes was fully applicable.

2 Solvency II

Solvency II is a framework-based directive, this implies that the set of regulations does not give detailed rules on how the requirements should be fulfilled but only states main principles that are open for interpretation and application as long as the requirements are fulfilled. The aim of Solvency II is to ensure the policyholders throughout the European Union that they have the same level of protection, no matter where they are insured. Solvency II is applicable to life insurances, non-life insurances and reinsurance [4].

The framework applies to medium- and large-sized insurance and reinsurance companies within EU. This implies companies with a gross income of at least EUR 5 million and/or technical provisions exceeding EUR 25 million and/or non-negligible activities abroad [3]. Small insurance companies may choose to apply for Solvency II if they wish, otherwise they will use Solvency II Basic, a simplified framework at national level.

The main difference compared to Solvency I is that, in comparison to Solvency I where the idea was one-way-fits-all, Solvency II includes risk-based capital requirements. This is done since, besides harmonized standards across the European Union, Solvency II also strives to adapt the capital requirements depending on the company's risk profile. This gives that under Solvency II, undertakings with high risk will have higher capital requirements than undertakings with low risk, this is a big improvement compared to its predecessor Solvency I.

The Solvency II framework is built on three pillars, where pillar one covers the capital requirements, pillar two the supervision of the company and pillar three covers reporting.

2.1 Pillar I - quantitative requirements

The first pillar covers the quantification of the risks and requires two distinct capital requirements, the Solvency Capital Requirement (SCR) and the Minimum Capital Requirement (MCR) that

both must be held in addition to the company's technical provisions.

2.1.1 Solvency capital requirement (SCR)

The SCR is the amount of capital required when taking all quantifiable risks the company is exposed to into account. A consequence of this is that companies investing in high-risk investments, such as equities, must maintain higher SCR than companies investing in low-risk investments such as government bonds. The level for this risk-based capital is determined such that the company can ensure that it can meet its obligations to policyholders and beneficiaries within the next year with a probability of at least 99.5%. This limits the risk of a financial ruin to one over 200 in the upcoming twelve months and is seen as a 99.5% value at risk measure. If the capital falls below the SCR, regulators have to be involved. The SCR has to be recalculated on a yearly basis and covers the existing as well as new business expected over the upcoming twelve months. If the regulators believes that the requirement does not reflect the company's risks in a proper way, they can adjust the requirement higher.

To calculate the capital requirement, either a standard model developed by the legislators can be used or the companies can develop their own full or partial model.

The standard model developed for calculating capital requirements is built on risk modules where each module focus on a specific group of risks. The main modules covers market risk, non-life and life underwriting risk, health underwriting risk, counter party default risk and operational risk. The outcome of these modules are then aggregated into a single capital requirement. Such an outcome can be calculated as how the company's balance sheet would be affected if a possible scenario would occur. For example, in the case of equity risk the resulting outcome could be how the balance sheet would be affected if there would be a big fall in the stock market. For other modules the outcome is a factor-based approach, meaning that the outcome is the result of a predefined calculation [5]. The outcome from the operational risk module is an example of such a factor-based module.

Due to the fact that the standard model is intended to work for all insurance and reinsurance companies and therefore is standardized in some sense, it can not be tailored for every individual risk profile. This may lead to, in some cases, that the model does not reflect the risk profile of the company in an optimal way [2]. To deal with this, many companies have chosen to use their own full or partial model. Developing an own, full or partial model, often results in less capital required and is therefore a valuable investment to the company. To use their own model, it needs to be approved by the national regulator to ensure quality and accuracy. This is an expensive process and hence favors larger companies. Hence large companies tends to cope better with the new framework since they have the resources to develop their own model and therefore can end up with a lower value of the capital required.

2.1.2 Minimum capital requirement (MCR)

In addition to the SCR, the company also have to calculate a minimum capital requirement. The MCR has to be in the range of 25%-45% of the company's SCR or seen as a 10% value at risk measure. This threshold value is the smallest amount of capital the company is required to maintain before it is considered to be exposed to an unacceptable level of risk. As mentioned earlier, regulators will intervene if the capital falls below the SCR level. As the amount of capital approaches the MCR, the interfering of the regulators increase and if it falls below the threshold, the company's authorization may be withdrawn.

2.2 Pillar II - qualitative requirements

Pillar II is known as a qualitative review of the quantitative results from pillar one. Aiming to secure adequate risk management and governance, Solvency II requires all insurance companies to have an effective governance system in place. The principal provisions of Pillar II cover two main components, the System of Governance including Own Risk and Solvency Assessment (ORSA) and Supervisory Authorities and General Rules.

2.2.1 General and governance system

The requirements imposed on governance systems are part of Pillar II, and contain written policies for certain functions that are set out in nine articles. The requirements are focused on the structure of the four key functions: risk management, compliance, actuarial, and internal audit that have been tightened.

General governance requirements above all emphasize that all firms should have in place an effective system of governance that provides for sound and prudent management of the business [8]. All firms should be able to ensure that the people who run the undertaking meet the professional qualifications, knowledge, experience and possess appropriate reputation and integrity. What also should be mentioned is that the nature, scale and complexity of a firm can also play a role here. Bigger and more complex companies require stricter governing structure.

What concerns one of the core component, the Risk management system, insurance and reinsurance undertakings are obliged to have in place an effective risk-management system. The system must at least include the following risk categories: underwriting and reserving, investments, risk acceptance, asset and liability management. Effective risk-management system should aim at the risk to which the company could be exposed, and shall comprise strategies, processes and reporting procedures necessary to identify, measure, monitor and report the risk. The system should be documented, regularly reviewed and integrated into the entire organization. For the risk management system to be acceptable, Solvency II requires a specific Risk Management Function (RMF).

The next sections state that all firms must have an effective internal control system that comprises at least accounting and administrative procedures, compliance with the law, an internal control framework and reporting arrangements. Estimation of the adequacy and effectiveness of the internal control system and other elements of the governance system should be included in the independent internal audit function. Actuarial function is described as an assessment function and aim to ensure that decisions that are made by undertakings are based on expert actuarial advice. As for outsourcing fraction, it is the company's full responsibility to discharge all of their obligations when they outsource functions or any insurance activities. The outsourcing of activities has to be conducted in a way that they have no impact on the governance system, operational risk or the possibility of the supervisory authorities to monitor compliance [8].

2.2.2 Own risk and solvency assessment (ORSA)

In the time frame of at least once a year, every insurance or reinsurance undertaking is obliged to conduct its own risk and solvency assessment (ORSA) as a part of the risk-management system. The task of the ORSA is to give the insurer and its stakeholders information about how strategy takes account of material risks that may threaten the insurer, the possible impact of this on its financial position and what the insurer can do to deflect or mitigate risks [7]. The main aim of the ORSA is also to use not only the internal model with the standard formula, but to think about additional risks the company might be exposed to in the long term perspective, considering that in the standard formula those risks are not necessarily covered.

The ORSA is an integral part of the business strategy and essentially covers the following major points. As applied, ORSA's task is to show whether or not the risk-management processes of a firm are considered to be appropriate. What is more, it must be integrated into the business strategy and taken into account in the process of organization of all the strategic decisions. The assessment that are being conducted can be performed with any change in the risk profile of the company.

As stated, ORSA should also include a specific risk profile and the significance with which it deviates from the assumptions underlying the SCR in Pillar I as well as continuous compliance with capital and technical requirements as mentioned in Pillar I. Companies are obliged to show that they have the capital which may be higher than their SCR in order to use it to support their own economic capital needs. If a regulator do not find the risk management process sufficient, it can require the company to hold more capital.

2.2.3 Supervisory Authorities and General Rules

The supervisory review process states that supervisory authorities are the ones being responsible for estimating how the capital adequacy needs relative to the risks are assessed. In order to perform this role, supervisors have the power to require immediate and remedial actions from a company when capital seems to be not adequate.

2.3 Pillar III - reporting requirements

Pillar III includes the requirements imposed on the information that is reported by the undertakings. The aim of the predefined disclosure requirements is to enhance market discipline among insurance undertakings through public disclosures and to provide additional non-public information to the supervisors [2]. This has been achieved by introducing qualitative or narrative reporting requirements and quantitative reporting requirements.

2.3.1 Narrative (qualitative) reporting requirements

The narrative or qualitative reporting requirements are such that the insurance company is required to provide two reports, a solvency financial conditions report (SFCR) and a regulatory supervisory report (RSR).

The public solvency financial conditions report (SFCR) should be made on a yearly basis and is aimed to give a qualitative description of the business and the performance of the undertaking. It should also include the system of governance and evaluation of its adequacy regarding the risk profile of the firm, the capital management and the assessment of assets and liabilities should also be included.

The regulatory supervisory report (RSR), on the other hand, provides the same information as the SFCR but is a report to the supervisor. In contrary to the SFCR, the full RSR report should be performed once every one to three years. However, a summary RSR, highlighting the most important changes that have been made, should be conducted at least annually by the insurance undertaking.

2.3.2 Quantitative reporting requirements

In addition to those reports, the company is also required to provide a quantitative report where they state all the figures of the undertaking. The company is required to report some of the figures on a quarterly basis and all of the figures on a yearly basis. The figures are provided to the national supervisor through an extensive set of quantitative reporting templates. For all

European undertakings, these templates are standardized and harmonized. This is essential for comparison of data between countries, and allow authorities to exchange the information. Quantitative reporting templates should include the balance sheet, asset values, technical provisions and capital requirements. Only a limited number of annual reporting templates is added to the public solvency financial conditions report [2].

3 Conclusions

Our conclusion is that the Solvency II framework is an improvement compared to its predecessor Solvency I. Instead of having one-way-fits-all as in Solvency I, Solvency II is a step in the direction of adapting the rules to the individual company by taking risks into account when calculating the company's solvency. What feels natural, that if a company is taking on high risk investments compared to low risk investments it should also be required to hold more capital, is now being implemented. This is done to ensure its policyholders that unexpected expenses can be covered. With not only one but two warning signals, capital thresholds, that the company is in need of interfering from a regulator gives the policyholders a clear insight in how well the company is doing.

In contrary to Solvency I, in Solvency II risk management is seen as a core element of business strategy of the insurance company, which additionally should also form an integral part of company's managerial functions. Subsequently, insurance companies are obliged to regularly and individually review their policies, strategy and risk appetite in an own risk and solvency assessment (ORSA). It also includes a thorough evaluation of additional risks that the company can be exposed to in the long term, which might not always be covered in the internal model and standard formula. Thus, Solvency II and ORSA in particular, gives insurance companies a chance to optimize their management and increase operational process efficiency, while providing the security that company's capital is consistent with its risk profile and business ambitions.

What also should be mentioned is that Solvency II aims to guarantee transparency by virtue of the solvency financial conditions report (SFCR), which is public, and the regulatory supervisory report (RSR), which is confidential. These disclosure requirements are introduced to enhance market discipline among insurance companies.

Reading guide

For readers who want deeper knowledge in the Solvency II framework we recommend the article *Solvency II in a nutshell* written by Tim Vandenaabeele for the company Milliman. The article covers main difference compared to Solvency I, the basic principles of Solvency II, the process used for setting up Solvency II and the three pillars it is built on.

In addition, the article *Solvency II: A new framework for prudential supervision of insurance companies* written for De Nederlandsche Bank is recommended. It answers the main questions asked about the new framework in an understandable way.

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