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Solvency II: changes within the European single insurance market

Maciej Sterzynski*   Jan Dhaene**

April 29, 2006

Abstract

The changing global economy makes the European single market to be urgently reformed and adjusted to the new trends. It is of the special importance for the financial sectors determining a competitive development within the common structures. To respond successfully the Member States decided to reconstruct financial services in a way to make them much more flexible and better reacting towards the wider economic alterations. Therefore, the banking and insurance markets are undergoing revolutionary reforms in order to create a level playing field for the prudential supervisors and the companies by the same time fostering the integration processes within the EU.

Keywords: European Insurance Law, Financial Institutions and Services, Insurance, Insurance Companies, Banking

JEL classification: G2, G21, G22, G3

* Maciej Sterzynski is a senior researcher at the Accounting, Finance and Insurance Research Group, Faculty of Economics at the K.U.Leuven, Naamsestraat 69, 3000 Leuven, Belgium, Phone; +32.16.32.67.71, e-mail;: maciej.sterzynski@econ.kuleuven.be.

** Jan Dhaene is a professor at the Accounting, Finance and Insurance Research Group, Faculty of Economics at the K.U.Leuven, Naamsestraat 69, 3000 Leuven, Belgium, Phone; +32.16.32.67.50, e-mail: jan.dhaene@econ.kuleuven.be.

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1. Introduction

The Solvency II project reflects foremost elements included first in the banking New Basel Accord (Basel II) and following in the Capital Requirements Directive (CRD) developed for the EU market. The insurance reform implements a risk-based capital system replacing the existing solvency margin approach. Solvency II will therefore adopt the three pillars approach already established for the banking sector. The proposed structure is believed to better match capital requirements with the insurer's market position, more efficiently protect consumers and shareholders of the companies and finally to increase the level of harmonization within the single insurance market.

The purpose of the paper is to give a brief overview of the keystones determining Solvency II. It will, starting from the short description of the current solvency system for insurance undertakings, analyse the proposed changes introduced by the new directive. The special emphasis will be given to Pillar I of Solvency II dealing with the capital requirements and other financial elements constituting the insurance business. Furthermore, one provides a short description of the proposed approach to the governance of the companies and more unified supervisory process developed under Pillar II. Finally, the last chapter presents an introduction to Pillar III concerned around the market transparency and disclosure. It is also worth to mention that at the current stage the Solvency II project has not been completed yet what makes a number of detailed issues remain still under discussion.

2. Current solvency regulation for insurance companies

An insurer's core activity is the assumption of risks.[1] Due to the inversion of the production cycle, insurance operations are liability driven. In exchange of a fixed premium that is paid now, the insurance company accepts the risk to pay the future random claims related to the insured events. This makes the nature of the insurance contracts is highly specific and different from the other financial services providing more material products. Concluding the contracts the policyholders receive a protection (=they decided to transfer own risks on the chosen insurance companies). First the insured event appears the consumers are entitled to claim their potential compensations. The complicated and abstractive nature of the insurances services requires the policyholders and the shareholders are granted a special protection determined by the prudent assessment of the insurer's solvency position.

Nowadays, the solvency framework for EU insurers is determined by so-called ***solvency margin system***. This model arises from the First Generation of Insurance Directives (1970s) and has been confirmed by the Third Generation of Insurance Directives in 1992.[2] The construction comprises of (1) the technical provisions representing the insurer's liabilities and founded by premium payments as well as the insurer's own capital funds, (2) the minimum guarantee found as an ultimate security level of capital the company cannot fall below and finally (3) the solvency margin which is meant as a buffer against unforeseen or unexpected increase in losses. On top of that, insurance companies may hold a free surplus.[3]

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[1] Kaas,R., Goovaerts, M., Dhaene, J., Denuit, M. : Modern Actuarial Risk Theory, Kluwer Academic Publishers, Boston, Dordrecht, London, 2001, pp. 309.

[2] The EU is provided with the unified economic zone including financial services called the internal market. One of its parts is a Single Insurance Market that relays on the three generations of insurance directives. In general they cover the rules on running the insurance activity including the financial structure of undertakings. More about the Single Insurance Market in Sterzynski, Belgian Actuarial Bulletin 3/2003.

[3] P. Lescrauwaet, M. Sterzynski, The new European solvency framework for insurance companies, *working paper*.

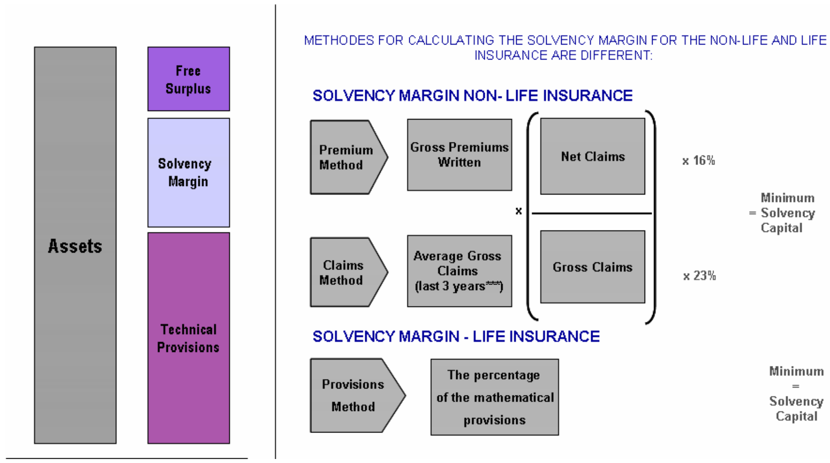

Chart 1. Current solvency framework for the EU based insurers

The calculation of the technical provisions relays on the probability measures supplemented by the statistical data pools.[4] Life insurance undertakings, given the special nature of the concluded contracts, are exposed to difficult to estimate and long term liabilities. The most common method to value the life liabilities is using the present value of the expected cash flows from the concluded contracts. This method, called the prospective reserve valuation method, leading to a current estimate relies on a very prudent approach, as a result of the use of outdated mortality tables for instance.[5] The apparent restrictions in a more flexible approach to the technical provisions make the EU-based insurers are less competitive by holding overestimated reserves.

Also a calculation of the solvency margin is far from being market oriented. The solvency margin is estimated using a fixed ratio set on the basis of the underwritten volume (premiums) or the level of claims (non-life) and the liabilities towards policyholders (life insurance). This means that a number of risk categories are not included in the calculation.

The supervision authority assesses the solvency position of undertakings only in relation to the quantifiable risks, i.e. financially measurable risks determining capital requirements (technical provisions and solvency margin on top of them). The other risk categories (the qualitative risks) such as the corporate governance risk, the internal control quality, the risk management as well as the market disclosure are not taken into account so far.

Since the beginning of 2000, the European Commission, together with Member States, has been active in a fundamental and wide-ranging review of the solvency requirements of insurance undertakings. This review has, given its complexity, been split in two phases however. In the first phase, which was finalised by 2002, some intermediary changes to the framework were introduced to improve the quality of the policyholders' protection as well as to make solvency requirements for European insurers more robust and harmonized.

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[4] In case of life products where the time horizon might range for multiple decades, the actuaries artificially extend the average length of life on which the calculation of the technical provisions is based. This leads to an increase in the technical provisions, which makes the policyholders benefit from an additional protection. The technical provision calculated in life business nowadays are thus unrealistic.

[5] Dhane, J: Life insurance, *a book in preparation..*

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The new requirements developed within the first phase and incorporated in so-called Solvency I Directives[6], have already been implemented in European countries, although there exist transitional periods (up to 7 years in some special cases). The new regulation increases the capital requirements, revising the method of the solvency margin calculation and introduces an adjusted supervisory tool in frames of the modified 'early warning mechanism'.[7] Especially the later one should improve the level of integration providing more detailed regulation on certain supervisory tools. However there remains a lot of gaps in the EU legislation being an obstacle on the path to the thoroughly harmonized single insurance market.

The clear disadvantage of Solvency I is its solely quantitative approach without involving any qualitative assessment of the company financial position. The existing solvency framework is also subject to a number of other serious weaknesses consequently repeated after the previous regulations. First, the current capital requirement is exclusively calculated on the basis of the liabilities, thus only taking underwriting risk into account. Other quantifiable risks, such as interest rate risk and other market risks, are not or not adequately incorporated. The current method of calculation may moreover create dangerous incentives as an insurance company can lower its capital requirements by reducing its premiums or technical provisions, while safer companies, having ample provisions and demand higher premiums have to hold a higher amount of capital. Second, the current framework does not include detailed rules on the harmonisation of the valuation of assets and liabilities. Therefore, assets and liabilities may currently be valued on the basis of different rules, which gives a distorted view of the solvency of an insurance company and burden the fair competition along the EU.

3. The new solvency framework for insurance companies in Europe

3.1. A short description of Solvency II

Contrary to the Solvency I Directive, the planned reform goes much beyond the existing capital framework. The principal goal of Solvency II is similar to the one pursued by the banking New Capital Agreement (Basel II) and its European implementation act the Capital Requirements Directive (CRD). It aims at introducing a risk-sensitive supervision for insurance companies relying on a risk-based framework for their solvency assessment. The framework includes five risks categories capturing credit risk, market risk, operational risk, liquidity risk and of course underwriting risk. Consequently, the new approach allows to better match a capital structure of a company with its risk profile what should result in a reduction of capital requirements. This change is meant to grant insurers more flexibility and to boost the competitiveness of the EU insurance sector in the global scale.

However, Solvency II is not only about capital requirements because no capital amount can replace a well designed and implemented risk management system supported by a good understanding of the provided business. Therefore Solvency II will also induce insurance undertakings to improve their internal risk management systems according to the simple principle: *'the higher quality of risk management in your company the less capital you are obliged to hold.'*

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[6] Originally Solvency I has been meant as two directives regulating the non-life and life business respectively. Since the three generations of life directives have been unified in a Life Recast Directive the Solvency I Life directive was implemented in the integrated text. Therefore currently there exists only Solvency I Non-life directive.

[7] The early warning mechanism is a supervisory tool allowing an authority to act before the solvency margin is breached. It means the supervisor might require an insurance undertaking provide a recovery plan for its solvency position once there appears first symptoms about deteriorating of the overall capital position of a company.

Finally, Solvency II aims to increase a level of integration within the single insurance market by applying more unified supervisory standards and introducing a new legislative procedure.

Following the Basel II and the CRD schemes Solvency II adopts three pillar structure:

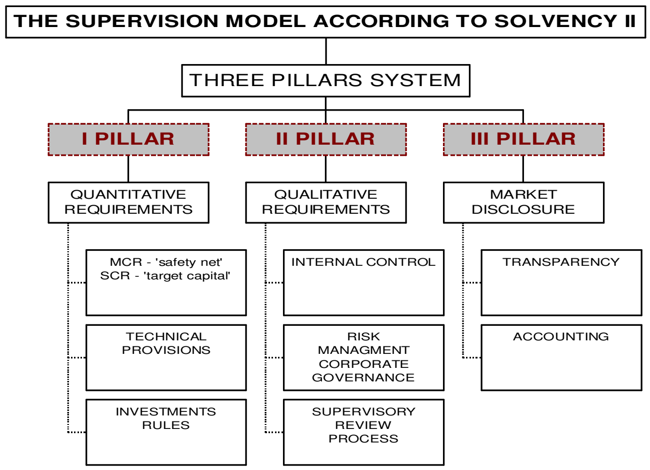

Chart 2. Three pillars system according to the Solvency II project

- The Pillar I covers the quantitative requirements i.e. those calculated using the available actuarial methods. It includes a new approach to a treatment of the technical provisions and the capital requirements split into a Minimum Capital Requirements (MCR) and a Solvency Capital Requirements (SCR). Furthermore the Pillar I deals also with the revised rules on the investment principles.

- The Pillar II covers non- quantitative requirements (qualitative). These include those risk exposures that cannot be measured using available mathematical methods (e.g. wide understood governance of a company) and also those ones that might be calculated according to the existing models but will be treated separately in Pillar II to highlight their importance for an overall solvency position of undertakings (e.g. the assets-liabilities management).

- The Pillar III is concerned to regulate the market disclosure in terms of the information' availability as well as in terms of the new accounting standards basing on the fair value assumptions.

The risk-based capital system, although unknown for the EU insurance industry yet, has been successfully developed in some other countries such as the Australia, Canada, Japan and USA.

As already mentioned, the EU decided to accelerate the integration process on the market and applies the new legislative procedure called the Lamfalussy procedure for the development of the Solvency II Directive and the future projects. This procedure, originally designed for the securities market, has been extended by the European Council on the insurance market. The four-levels regulatory approach is believed to simplify the legislation process and to make the implementation means more efficient.

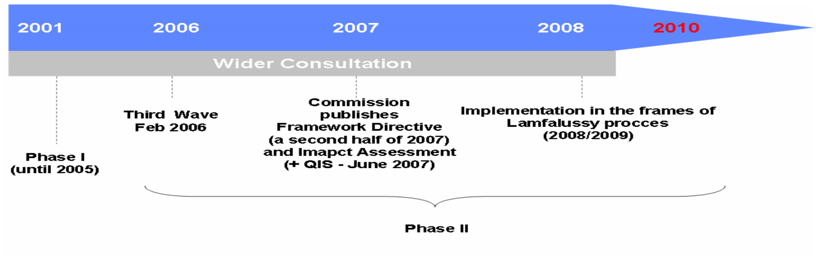

Chart 3. Timetable for the Solvency II project

Under the Lamfalussy procedure, the legislative procedure has been split into the development of a Framework Directive by the European Commission, and the elaboration of the technical issues supporting the Framework Directive by the Committee of European Insurance and Occupational Pension Supervisors (CEIOPS, the counterpart of Committee of European Banking Supervisors in the banking field). According to the latest official statement, the European Commission is planning to issue the Framework Directive in the second half of 2007.

Similar to the banking Capital Requirements Directive, the publication of the Framework Directive will be preceded by detailed quantitative impact studies (QIS). The goal of the QIS is to estimate possible economic consequences of the new regulation on the insurance industry and to calibrate the new solvency requirements. There are following QIS to be provided: on the new approach to the technical provisions, on the Minimum Capital Requirements (MCR) and on the standardized models for the Solvency Capital Requirements (SCR). Completing the inputs from the QIS, the EC will also provide an Impact Assessment. This is a wider analysis on the consequences of Solvency II for the EU financial markets.

3.2. The risk-based capital framework under Solvency II – Pillar I

As already mentioned, Pillar I replaces the current solvency margin system with a risk-based capital framework. It means the reform does not provide only a modified capital approach driven by previous models but it contains a new valuation method for the technical provisions and introduces recently developed capital categories such as a Minimum Capital Requirement (MCR) and a Solvency Capital Requirement (SCR). Finally, Pillar I covers the new rules regarding investment portfolio.

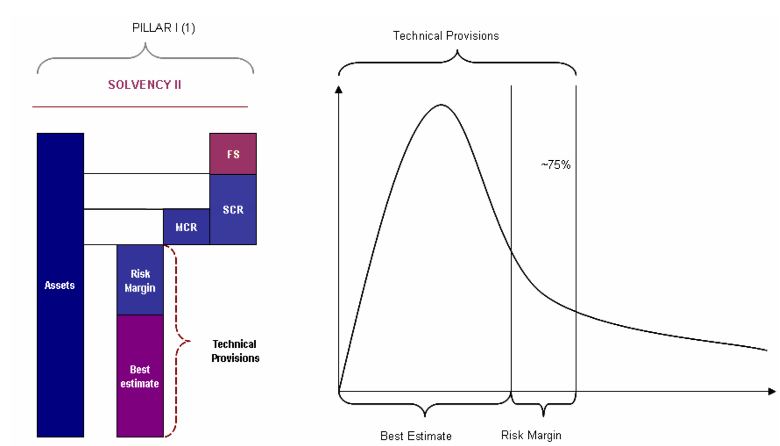

Chart 4. New approach to capital requirements under Solvency II

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3.2.1. Technical provisions

The new approach to the technical provisions aims all liabilities and assets covering them to be calculated accepting a realistic estimation, i.e. a best estimate. The proposed way of valuation is clearly relying on market values and replaces the current conservative valuation resulting in overrating of capital requirements. Therefore, Solvency II will allow to use fair value techniques developed by the International Accounting Standards Board (IASB) where assets and liabilities represent the amount for which these assets could be exchanged, or the liabilities settled, between knowledgeable, willing parties in an arm's length transaction.

The main concern of the supervision is the ability of insurers to meet their future obligations with a large probability. Since the new valuation of technical provisions might result in a decrease of required capital there is a need to protect policyholders in case of any miscalculation of the liabilities. Therefore, Solvency II proposes to establish an additional 'security buffer' as a margin for risk and uncertainty over the technical provisions, which would increase the prudential confidence level. The possible solutions for the confidence level of the technical provisions, including the additional margin, currently vary between 60 p.c., 75 p.c. and 90 p.c. The confidence level will indicate with what probability the technical provisions of an insurance undertaking allow fulfilling its obligation towards the policyholders in the time period until the expiration of the last contract (a long time horizon). This is of the crucial importance for life insurance, since those kinds of contracts are concluded for longer periods, sometimes ranging up to 35 and 40 years. Although the debate is still ongoing and the final decision concerning the confidence level might be first taken after the conclusion of the QIS, one can assume the confidence level should be settled for 75 p.c.

3.2.2. New capital layers - MCR and SCR

The Minimum Capital Requirements (MCR) and the Solvency Capital Requirements (SCR) are the other characteristics of the proposed reform. They constitute a new capital system located on the top of the technical provisions and replace the solvency margin structure. Contrary to the existing model the MCR and the SCR especially, will represent a capital covering all risks exposures the companies face on the market. It means new capital requirements will reflect not only underwriting risk, which is a solvency margin determinant, but also credit risk, operational risk, market risk and liquidity risk.

As the technical provisions cover the expected claims arising from the concluded contracts, the MCR and the SCR serve to protect policyholders and other beneficiaries against unexpected losses like e.g. unfavorable investments or unforeseen claims concentrations. Moreover, whereas the technical provisions are analyzed in a longer time horizon, the SCR will be estimated for much shorter time period but supplemented with a higher confidence level.

Finally, Solvency II following Basel II and the CRD will allow the SCR to be calculated using internal models, i.e. established on a basis of the risk factors developed by a company itself. Nowadays capital requirements for the insurance undertakings are estimated using a fixed ratio (=solvency margin) and the technical provisions are valuated according to the external methods. Solvency II applies more sophisticated methods for the SCR calculation what is believed to adjust the capital requirements to the market position of undertakings.

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3.2.2.1 Minimum Capital Requirements (MCR)

The MCR is designed as a regulatory capital (safety net) representing the level below which the capital of a company cannot fall without causing an unacceptable risk to policyholders. If an undertaking's capital drops below the MCR the local supervisory authority is obliged to react immediately using the most ultimate supervisory tools, including the withdrawal of the license. The supervisory action in this case is immediate and rule-based. [8]

The MCR is a fundamental for the prudential supervision in the future Solvency II. It is destined to be evaluated as EU-wide harmonized standardized formula applying to insurance undertakings in all Member States. The MCR cannot be calculated using internal models, since those imply a market volatility determining the risk factors that the regulator wants to avoid with respect to the bottom capital level. Moreover, the MCR should be robust and transparent in order to minimalize the compliance costs. Additionally, the MCR as the ultimate prudential level should be lower than the SCR.[9]

There are two approaches analyzed that could be used to calculate the MCR. Firstly, the MCR might be estimated in a similar way as the solvency margin nowadays. The advantages of such an approach are obviously its simplicity, robustness and transparency, avoiding high compliance costs. This calculation method is, however, not entirely in line with Solvency II and for this reason it should be rather minimalized in the future Framework Directive. Therefore the solvency margin calculation's method will be only used as a transitional approach to let the undertakings adopt more sophisticated models further proposed in the regulation. Secondly, the MCR might be calculated as a fraction of the SCR. The new method would be in line with the market-oriented approach of Solvency II and should apply as a post-transition model. This approach generates certain difficult to estimate compliance costs and therefore might be introduced into the practice after the first phase of the Solvency II has been implemented.

There was also the third possibility considered to calculate the MCR above and over the technical provisions. A certain advantage of this approach is the transparent and harmonized way to estimate the MCR throughout the whole EU. There are however no entirely unified standards for valuating the technical provisions so far and one does not know to what extent Solvency II will harmonized them.

3.2.2.2 Solvency Capital Requirements (SCR)

The SCR reflects the capital level a company needs to hold in order to have a sufficiently low risk of failure. The solvency capital is therefore the acceptable capital for a good and save functioning on the insurance market. It reflects a level of capital that enables an insurance company to absorb significant unforeseen losses and gives reasonable assurance to policyholders that claims will be realized as they fall due. The SCR will be estimated using standardized or internal models. These new methods allow for the calibration of the capital requirements in accordance with an undertaking's profile.

The SCR will be also provided with a confidence level, which will be related to that of in the technical provisions. As already mentioned, the time horizon of both items is however different. While the provisions cover, with a certain probability, all claims up to the expiration of all policies, the SCR provides a buffer against losses within a period of one

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[8] CEIOPS, Answers to the European Commission on the second wave of Calls for Advice, CEIOPS-DOC-07/05, para. 15.6.

[9] SCR = MCR x j ($j \geq 1$).

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year. Therefore, the level of prudence rises up and might be established at 99,5 p.c., what depends also on the political decision made within the EU. It means that the probability that a company will be able to absorb unforeseen losses without falling insolvent within a one-year time period is 99,5 p.c. It means also that the ruin probability is equal to at most 0,5 p.c.

On the contrary to the MCR, the SCR is a flexible control level. It means that once a company approaches the bottom line of the SCR, the supervisor will have the choice between a number of tools suitable to urge the company to increase its capital in a reasonable time horizon (a mechanism of gradual supervisory intervention). The use of this intermediate level might avoid problems with procyclicality in terms of selling assets and rise capital in inopportune times.

3.2.3. Investment policies

One of the main problems of the current solvency framework is that the eligible assets covering the technical provisions and the solvency margin are not thoroughly harmonized. The existing differences lead to a potential unequal competition on the market. In addition to this, there have appeared a range of new financial instruments, for which it is not clear whether insurers might invest in them or not.

Solvency II will therefore include new rules on insurance companies' investments policies to achieve an increased level of harmonization among the EU. It is proposed that the assets covering the technical provisions, the SCR and the MCR should be subject to the same rules.

There is still an ongoing discussion about what investments will be allowed to do and how they should be structured either in a list or as the principles applying to identify the eligible elements. The quantitative approach to the investments, which is a part of Pillar I, deals with the exposures to a single counterparty as well as to single asset' categories. The qualitative requirements implemented in Pillar II are characterized by so-called 'Prudent Person Plus' approach concerning the assets management in general (e.g. the qualitative approach involving the ALM assessment).

3.3. New approach to the risk management and supervisory practices – Pillar II

As already mentioned, Pillar II is designed to cover mostly qualitative requirements within Solvency II. Therefore it focuses on the governance of the insurance undertakings involving the risk management structures as well as the internal control. Also the ALM techniques from their qualitative perspective will be included in a scope of Pillar II what creates the interaction with the Pillar I quantitative regulations.[10]

The major of Pillar II is a new approach to the wide understood governance of a company. Solvency II put a special emphasis on a high quality of management processes and the professional human recourses together with a well developed internal control system. An effective management and supervision should guarantee that an exposure to the operational risk is limited. For that reason Solvency II promotes a transparent governance model highlighting the role of the Board of Directors and Senior Management simultaneously clearly distinguishing their responsibilities. Furthermore Solvency II also encourages companies to introduce a permanent supervision over the day-to-day operation, efficient

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[10] As Pillar II also deals with certain quantitative risks there is obvious interaction with Pillar I. It is best pictured on the example of the ALM, where the qualitative approach has been incorporated to Pillar II and the quantitative regulation applies under Pillar I.

reporting, controlling and audit. The incentive for the insurers to modify their governance system is a reduction in capital requirements applying for the operational risk exposure.

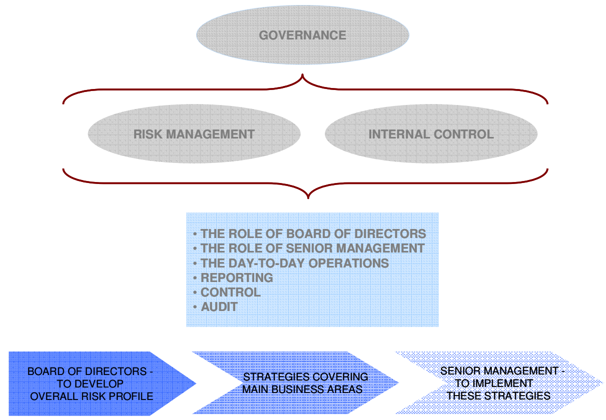

Chart 5. Governance of the insurance undertakings - Pillar II

The other aspects of Pillar II are investments management rules and ALM. As already mentioned, the quantitative policies covering limits on assets, assets-liabilities mismatching as well as assets concentrations are developed under Pillar I. Therefore one can say the Pillar II regulation complements Pillar I requirements in this respect.

So far, the EU based companies are subjected to the local policies basing on a very general regulation arising mostly from the Third Generation of Insurance Directives. The lack of unified and detailed regulation in the matter implicates dangerous effects such as breaching of the principle of the fair competition on the single market. Solvency II will therefore place high-level general requirements on insurance undertakings to manage their assets and liabilities as well as to invest appropriately. These requirements applying for both life and non-life business will be supplemented by a detailed regulation developed by CEIOPS.

Furthermore, Pillar II covers a regulation on the discretion of supervisors and applies the peer review process for the local supervisors to increase the harmonization level on the single insurance market. According to the proposed shape of Pillar II, a supervisory authority evaluates the risk profile, adequacy of financial resources and corporate governance of the insurance undertakings in relation to the nature of the provided businesses.

It is obvious that the harmonization level on the single insurance market depends strongly on a common framework for assessing corporate governance and overall financial position of undertakings. Therefore, the goal of Solvency II is to increase a convergence of the supervisory process supported by the application of best practice. This will diminish any further local misinterpretations resulting in so-called competition of supervisors. Moreover, Solvency II proposes to review the supervisory process on a regular basis in the frames of the EU supervisory conference.

3.4. Transparency and market disclosure – Pillar III

Solvency II implies more transparency and disclosure to the single insurance market. The companies will be obliged to provide all market players with a larger scope of information about their business activity. This is believed to improve a security granted for both the policyholders and shareholders. Moreover, Pillar III sets the requirements for new

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international accounting standards supported by market oriented capital estimations to investigate the overall solvency position of the undertakings efficiently.[11]

4. Conclusions

The Solvency II Project is obviously a revolution on the insurance market inspired by Basel II and the CRD for the banks. Solvency II following the banking reform implies the three pillars framework with a goal to make the European single insurance market more transparent, stable and competitive. The proposed changes are about the supervisory structure and the calculation of the capital requirements. Therefore, the new rules on the technical provisions, modern policies on the capital buffers introducing the MCR and the SCR as well as the modified investments policies will be crucial for the efficient risk-based system.

Solvency II means also a revision of the traditional approach to a governance of the insurance undertakings. The Framework Directive will encourage the companies to develop more qualified risk management systems covering all aspects of the insurance activity supported by the internal control mechanisms. This is meant to increase a level of the general security on the market granting all players a better and more efficient protection. Finally, to improve the transparency and disclosure among the undertakings Solvency II will provide the modified reporting standards supplemented by the new developments in the insurance accounting.

Summarizing the presented overview one has to remember that the Solvency II Project is still under the developing phase. Only elementary features have been fixed. A lot of smaller details are not decided yet. It concerns mostly the technical sphere starting from the calculation methods for the MCR and the SCR, the treatment of operational risk as well as the confidence level for the technical provisions. It is also worth to mention that some of the issues will be decided on a political basis strongly influenced by the EU insurance lobby.

References

1. CEIOPS, Answers to the European Commission on the second wave of Calls for Advice, CEIOPS-DOC-07/05.

2. Dhaene, J: *Life insurance*, a book in preparation.

3. Lescrauwaet P., Sterzynski M., *The new European solvency framework for insurance companies,* working paper.

4. Kaas,R., Goovaerts, M., Dhaene, J., Denuit, M. (2001), *Modern Actuarial Risk Theory*, Kluwer Academic Publishers, Boston, Dordrecht, London.

5. Sterzynski M. (2003), *Single Insurance Market*, Belgian Actuarial Bulletin 3/2003.

[11] Best estimates versus current estimates – as analyzed in the chapter 3.2.1.