7th International Scientific Conference
"Business and Management 2012"
May 10-11, 2012, Vilnius, LITHUANIA

ISSN 2029-4441 print / ISSN 2029-929X online
ISBN 978-609-457-116-9 CD
doi:10.3846/bm.2012.151
http://www.bm.vgtu.lt

SOCIAL RESPONSIBILITY OF SOLVENCY II - THE MAIN CONDITION FOR SUSTAINABLE DEVELOPEMENT OF INSURANCE MARKET

Valentina Peleckienė[1], **Kęstutis Peleckis**[2]

Vilnius Gediminas Technical University, Faculty of Business Management,
Saulėtekio ave. 11, LT-10223 Vilnius, Lithuania
Email: [1]valentina.peleckiene@vgtu.lt; [2]kestutis.peleckis@vgtu.lt

Abstract. The paper aims to present the importance for insurance industry on undergoing significant legislative changes in the insurance market of Lithuania called Solvency II regime, and how implementation measures can influence sustainability of insurance industry. The main objective of the present paper to analyze basic principles and concepts of Solvency II regime, quantitative and qualitative measures under new Solvency II regime, introducing of the Supervisory Review Process, which will enable supervisors for better and earlier identification of failures, evaluation of insurers' compliance with the laws, regulations and administrative provisions. The results of study discovered positive relationship between the effectiveness of Solvency II Directive implementation and financial soundness of insurance undertakings. New framework of Solvency II will enhance insurers to develop more progressive risk management system and new possibilities for policyholders related with internal control and internal audit, greater confidence in the products of insurers.

Keywords: social responsibility, insurance industry, solvency II, risk management, solvency capital requirement, quantitative impact assessment.

Jel classification: G14, G22

1. Introduction

The Directive 2009/138/EC of the European Parliament and of the Council on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II) was approved on 25 November 2009 and shortly is called Solvency II. The objective of this paper is to stress the importance of successful implementation of Directive and about significant changes undergoing in the insurance industry. Insurance industry must be supplied with recent literature an review of the new Solvency II regime which was provided by Eling *et al.* (2007), Liebwein (2006) Schubert and Grieÿmann (2007) and others.

Solvency II introduces a new, harmonised EU-wide regulatory regime, which replaces 14 existing Directives of insurance. The main objectives of Solvency II are:

- better regulation and deeper integration of EU insurance market;
- protection of policyholders and competitiveness of EU insurers.

Given that, the main target of new Solvency II system is to ensure the financial soundness of insurance undertakings, and in particular to ensure their survivance during difficult periods, protection of policyholders and keeping stability of the financial system as a whole. 2011 year was devoted for adoption of Implementing Measures. The deadline for the transposition of Solvency II Directive into national laws of EU Member States is by the end of October 2012. Now when the experts and supervisory authorities from all EU Member States had prepared implementing measures of Solvency II Directive it is social responsibility of each insurance company as soon as possible to present for policyholders, risk managers and executives information on the advantages of the new Solvency II regulatory system.

The methods chosen for research - a systematic, comparative, logical analysis and synthesis of literature.

2. Key features and the main advantages of Solvency II system under Solvency I

Firstly, the new Solvency II regime will adopt risk-based solvency requirements. The requirements of Solvency I regime were concentrated mainly on the liabilities side (i.e. insurance risks). Supposed Solvency II requirements will take account of the asset-side risks. Solvency II system will be sufficiently harmonized across all Pillars so that the risks in different locations and companies would be treated consistently (Pitselis 2009).

Secondly, the new Solvency II system will be a "total balance sheet" type regime where all the

risks and their interactions will be considered. The insurers will be required to identify, to measure and proactively manage risks. Depending on this, structure of Solvency II system is based on three-pillar approach, that is similar to Basel II including all the quantitative and qualitative aspects that could affect the solvency situation of the undertaking and giving due attention to governance and risk management issues. These main approaches are presented in Table 1 below:

Table 1. Structure of Solvency II three - pillar system (Source: CEA, 2010).

Pillar I Quantitative Requirements	**Pillar II Qualitative requirements Supervisory Review**	**Pillar III Information disclosure**
- Balance sheet valuation and capital requirements; - Harmonized standards for the valuation of assets and liabilities; - Calculation of capital requirements (SCR and MCR), own capital and technical provisions.	To ensure that insurers have good monitoring and management of risks and adequate capital: - Internal control; - Risk management; - Corporative governance; - Analyze of scenario; - Correction of capital.	Harmonization of disclosure requirements, allowing capital adequacy to be compared across institutions, focused on supervisory reporting and transparency requirements.

Table 1 show that Pillar I requires demonstration of adequate financial resources and is concerned with the asset and liability measurement, including adequacy of technical provisions, and capital requirements. Solvency capital requirements of Pillar I will be based on a market-consistent total balance sheet approach. Solvency II experts have proposed two capital level requirements: 1) Solvency Capital Requirement (SCR); 2) Minimum Capital Requirement (MCR).

Whereas the Solvency Capital Requirement incentivises sound risk management through the explicit quantitative measurement of the risks for the undertaking‘s operations and investments, the Minimum Capital Requirement should ensure a supervisory response to the undertakings financial position, allowing for ultimate supervisory action, including withdrawal of the license. The framework is completed with the existence of a number of dampeners, both quantitative and qualitative, that aim to address potential pro-cyclical effects of the regime fully in line with the requirements of risk-based supervision and regulation, Solvency II removes the implicit prudence embedded in technical provisions currently existing in Solvency I, and provides with a fully comprehensive approach to (quantifiable) risks within the SCR standard formula, as compared to the simplistic factor-approach taken for the determination of the required solvency margin in Solvency I (Esson *et al.* 2007).The starting point of the solvency assessment under Solvency II is the harmonised solvency balance sheet valued according to market consistent principles. This harmonised balance sheet differs from the one in the audited accounts used under Solvency I.

Table 1 show that the Pillar II requirements will include the main principles of internal control and sound risk management for insurance undertaking and will help insurers to have good monitoring of risks and adequate capital. Under Solvency I solvency requirements are based on largely historical data. The new Solvency II rules will require insurers:

- to have an effective risk management system implemented by senior management. Risk and capital management must be integrated;
- to foresee any future developments, such as new business plans or the possibility of catastrophic events;
- to introduce an Own Risk and Solvency Assessment;
- to introduce the Supervisory Review Process, which will enable supervisors for better and earlier identification of insurers which can have difficulties, to evaluate insurers' compliance with the laws, regulations and administrative provisions.

Under Solvency II Member States shall ensure that the administrative, management or supervisory body of the insurance or reinsurance undertaking has the ultimate responsibility for the compliance, by the undertaking concerned, with the laws, regulations and administrative provisions.

Member States shall require all insurance and reinsurance undertakings to have in place an effective system of governance which provides for sound and prudent management of the business. That system shall at least include an adequate transparent organisational structure with a clear allocation and appropriate segregation of responsibilities and an effective system for ensuring the transmission of information. The system of governance shall be subject to regular internal review, shall be proportionate to the nature, scale and complexity of the operations of the insurance or reinsurance undertaking. Insurance undertakings shall have written policies in relation to at least risk management, internal control, internal audit and, where relevant, outsourcing. They shall ensure implementation of those policies, which shall be reviewed at least an-

nually (Linder *et al.* 2004). They shall be subject to prior approval by the administrative, management or supervisory body and be adapted in view of any significant change in the system or area concerned.

The supervisory authorities shall have appropriate means, methods and powers for verifying the system of governance of the insurance and reinsurance undertakings and for evaluating emerging risks identified by those undertakings which may affect their financial soundness.

Insurance and reinsurance undertakings shall ensure that all persons who effectively run the undertaking or have other key functions at all times to meet the following requirements:

- their professional qualifications, knowledge and experience are adequate to enable sound and prudent management (fit);
- they are of good repute and integrity (proper).

Insurance and reinsurance undertakings shall notify the supervisory authority of any changes to the identity of the persons who effectively run the undertaking or are responsible for other key functions, along with all information needed to assess whether any new persons appointed to manage the undertaking are fit and proper.

Where a Member State requires of its own nationals proof of good repute, proof of no previous bankruptcy, or both, that Member State shall accept as sufficient evidence in respect of nationals of other Member States the production of an extract from the judicial record or, failing this, of an equivalent document issued by a competent judicial or administrative authority in the home Member State or the Member State from which the foreign national comes showing that those requirements have been met.

Solvency II also sets out some new strengthened governance requirements concerning the management of assets that should further improve practice in this area. The governance requirements for insurers mean that they will have to establish functions responsible to deal with risk management, risk modelling (for internal model users), compliance, internal audit and actuarial issues. These functions must help insurers in their practical implementation of the new rules. Insurers must have an adequate and transparent governance system with a clear allocation of responsibilities and effective reporting lines. Solvency II identifies several functions, such as the risk management function and the actuarial function, which insurers must have.

Other requirements relate to internal control and internal audit, the need to carry out a self assessment of the company's risk and solvency position and the need for board members and senior management to be „fit and proper".

One of the reasons why it is necessary to consider market risk, or risk associated with investments, is that inappropriate investment strategies or adverse movements in the value of the investments can threaten the financial soundness of an insurer and its ability to meet its commitments. Requiring insurers to hold capital against such adverse scenarios arising out of their investments not only mitigates against insurance failures, but also incentivises insurers to consider the appropriateness of their investment portfolio and the risk associated with it (Pitselis 2009).

In Table 1 we can see that Pillar III - information disclosure - will require insurers to disclose certain information publicly to a far greater extent than under Solvency I. Pillar III requirements will be closely aligned to the contents of the other two pillars including disclosure and transparency of the Solvency II. Information disclosure will bring in market discipline to support regulatory objectives. Insurers should be prepared to disclose more information publicly than at present.

Pillar III will help to ensure the soundness and stability of insurers, will force greater cooperation between insurance supervisors and will foster supervisory convergence.

The new Solvency II regime will strengthen the role of the group supervisor who will have specific responsibilities to be exercised in close cooperation with the solo supervisors. The group support regime would (Jack de Laruasiere 2009):

- install colleges of supervisors for cross-border groups and ensure an effective decision making process within the colleges;
- allow home based firm to allocate capital throughout the group in an efficient way, subject to safeguard to protect the financial soundness of all the legal entities belonging to the group. This will mean that the same economic risk-based approach will be applied to insurance groups which will be better managed as a single economic entity.

3. Review of Solvency II quantitative impact study

Quantitative impact studies (QIS) are simulations, performed by insurers on a voluntary basis, of the impact of proposed new Solvency II requirements on their financial resources. QIS have been organised by the Committee of European Insurance and Occupational Pension Supervisors (CEIOPS), on the request of The European Commission (EC). The quantitative impact studies are the primary means for testing the design of the future Euro-

pean Standard Formula, instrumental in collecting data on the potential impact of the new Formula, as well as the main route for finding the correct calibration. The Solvency II project has been developed and tested for more than ten years, and QIS exercises are essential tools to ensure that the system is sound and workable (Pitt 2006). QIS exercises are crucial to the development of EU regulation. The QIS exercises are essential to strive to ensure that Solvency II is designed in the most appropriate manner, with sufficient evidence of the impact of the regime proposed. The results of last QIS globally leads to an increase in capital requirements, a decrease in technical provisions and a relative increase in the amount of eligible own funds.

This provides background to the various policy options that have been considered and analysis of the expected impact of the new rules. The main objectives and outcomes of five quantitative impact studies are:

In QIS1 participated 312 insurance companies. QIS1 objective was: 1) to test impact of the best estimate and the risk margins on the required technical provisions; 2) to test ability of undertakings to perform the requested calculations. The main outcomes of QIS1 show that: 1) technical provisions in life insurance undertakings calculated on the „best estimate“ method plus risk margin tends to be less than the provisions on current bases; 2) the level of technical provisions in non-life insurance undertakings was decreased 10 – 15 % by discounting; 3) the risk margins tend to be small, for most undertakings and classes of business.

In QIS2 participated 514 participants of insurance market with the target to find issues relating to the calculation of SCR and MCR, internal models, eligible capital, technical provisions; to improve the formulation of the Standard Approach; to test structural design options. The main results: 1) the MCR in life undertakings will consist 60 % of the SCR ; in non life undertakings – 47 % of the SCR; 2) using internal models: – the life underwriting risk charges exceeded the corresponding risk module of the SCR by a significant amount; – for non-life underwriting risk, the internal models generally give lower outcomes than the placeholder SCR; – for credit risks - almost all give higher values for credit risk than the SCR (Kiškienė 2006) .

In QIS3 participated 1027 insurance companies with the objective: to obtain information about the practicability and suitability of the calculations involved, and the alternatives tested; – CEIOPS was looking for quantitative information about the possible impact on the balance sheets, and the amount of capital that might be needed, the approach and the calibration set out in the QIS3 specification were to be adopted as the Solvency II Standard; – to collect information about the suitability of the suggested calibrations for the calculation of the SCR and MCR. The outcomes: 1) the solvency ratio on average substantially increased; 2) technical provisions were reported lower than the current technical provisions on average. For most participants, the decrease ranges from 0 % to 20 %; 3) on average, the SCR was reported 2,7 times higher than the Solvency I capital requirement; 4) meeting the MCR is no problem for the vast majority of insurance undertakings: only 2 % of firms would have to raise additional capital to meet the MCR; small undertakings had a higher chance than large firms not to meet the MCR: 16 % of firms do not meet the SCR under QIS3 (Kamienė *et al.* 2007).

In QIS4 participated 1412 (re)insurers and 106 groups with objective of: the assessment of the quantitative impact of SCR on (re)insurance groups balance sheets, including diversification effects and transferability of own funds; the inclusion of simplifications for the calculations of SCR and the technical provisions as well as the use of undertaking specific parameters; the design and calibration of the MCR; the comparability of the standard formula and (partial or full) internal models for the calculation of the solvency requirements. The outcomes: Potential decrease/increase in solvency requirement relative to the standard formula: – 72 % of the respondents who gave an estimate said that there would be a decrease in SCR; – 18 % assumed that with internal model the SCR would increase; - the larger the respondent the more they expected more than a 20 % decrease in SCR. With respect to solvency levels, the vast majority (98.8 %) of undertakings will be able to meet the MCR. Captives were most affected by the MCR: approximately 7 % of the participating captives do not meet the MCR. Almost 11 % of the participants do not meet the SCR under QIS4; Large undertakings (13.2 %) and non-life undertakings (11.2 %) would be most affected by this. Also a significant number of captives (28.3 %) would not meet the SCR (Linartas *et al.* 2010).

In QIS5 have participated 2520 (re)insurers, and 167 insurance groups with the target to estimate the impact of the financial crisis; –the difference between Solvency I and Solvency II solvency balance sheets; to estimate participation of solo undertakings and groups; the calibration of the standard formula: group's calculations; internal model; complexity. The main outcomes resulted in: financial position of the European (re)insurance sector assessed against the QIS5 SCR calculated in accordance with the standard formula or internal models remains comfortable with eligible own

funds in excess of the regulatory requirements by € 395 bn. This amounts to a decrease of the surplus of € 56 bn compared to the current regime. On a global level, the surplus under QIS5 is roughly 12 % lower than the current surplus. On a national level, the evolution of the surplus is not homogeneous. In thirteen countries the capital surplus assessed against the QIS5 SCR is greater than the current surplus assessed against the Solvency I required solvency margin. Generally, across all solo respondents the SCR results obtained by using an internal model were very close to those derived by applying the standard formula. The most significant difference between standard formula and (partial) internal model results was observed among groups. Groups' internal model results showed a capital requirement of about 0.8 times the size of the capital requirement based on the standard formula calculation; 15 % of the participants did not fully cover the SCR, which would trigger regulatory action. Fewer than 9 % of participants covered 75 % or less of the SCR. A quarter of those undertakings belong to insurance groups or financial conglomerates for which a capital reallocation or intra-group risk transfers would be available as a means for raising their capital level; under 5 % of the participants did not fully cover the MCR, which would trigger the most serious intervention from the supervisor, this is the withdrawal of the license.

4. Lessons from findings of Basel II implementation period and financial crisis

As Solvency II system is based on three-pillar approach, which is similar to Basel II, so it is relevant to make analysis of Basel II implementation period practice and to see how it worked during financial crisis. The Basel II rules entered into force on 1 January 2008 in the European Union. The Basel II, in comparison with Basel I, had some improvements, which enabled banks to lower their required capital reserves, so banks more capital could invest and increase profits.

In literature the criticism of the risk measurement methodology in Basel II is based on the assumptions that underpin measurement theory. Critics argue that risk modeling is based on a fundamental misunderstanding of the statistical properties of risk. This misunderstanding results because of the basic assumption in statistical risk modeling that the statistical properties during stable times remain the same during times of crisis (Wahlström 2009). The financial crisis confirmed these arguments and showed that the relevant supervisory authorities severely underestimated the extent, the interconnectedness and the systemic risks. Emanating from the shadow banking system and has reinforced the existing importance of strong and independent risk management within insurance companies. During last year's, insurers have not been submitted to the same systemic issues that many banks faced with Basel II. On the contrary, the insurance industry displayed resilience in the face of adverse market conditions.

5. Conclusions

The results of article demonstrate that implementation of Solvency II Directive into national legislation for insurance industry must be organized as soon as possible due to these reasons:

1. To introduce insurance industry with basic principles and concepts of Solvency II regime. The new Solvency II regime will be based on a more economic risk – based solvency requirements. If requirements under Solvency I regime concentrated mainly on the liabilities side, Solvency II requirements will take account of the asset-side risks and will be sufficiently harmonized across all Pillars so that the risks in different locations and companies would be treated consistently (Peleckienė, Peleckis 2011.)

2. To call insurer's attention to the main target of new Solvency II system, which is to ensure the financial soundness of insurance undertakings, and in particular to ensure their survivance during difficult periods, protection of policyholders and keeping stability of the financial system as a whole. 2011 year is devoted for adoption of Implementing Measures. The deadline for the transposition of the Directive (Solvency II) into national laws is by the end of October 2012

3. To highlight for insurance industry and policyholders about the advantages of changes of the existing regulatory system (Solvency I).

4. With the help of insurance industry to analyse and evaluate the results of quantitative impact studies, made by EIOPS. The analyse of quantitative impact assessments showed that the capital requirements under the Solvency II regime is in most cases considerably lower than under Solvency I and for the European insurance industry as a whole, no additional capital is needed.

References

CEIOPS Report 2007-SEC-71/06S, QIS2 – Summary Report Public report.

CEIOPS Report on its fourth Quantitative Impact Study QIS4 for Solvency II, November 2008.

CEIOPS, 2006. Quantitative Impact Study 2. [Online] [Accessed 6 January 2012]. Available from Internet: www.ceiops.com

CEIOPS, 2007. SEC-71/06S, QIS2 – Summary Public Report.

Comite Europien des Assurances (CEA). 2007. Consequences of Solvency II for Insurers. [Online] [Accessed 23 January 2012]. Available from Internet: www.ec.europa.eu/internal_market/insurance/docs/solvency/

Comite Europien des Assurances (CEA), Consequences of Solvency II for Insurers, 2007. [Online] [Accessed 23 January 2012]. Available from Internet: www.ec.europa.eu/internal_market/insurance/docs/solvency/

Eling, M.; Gatzert, N.; Schmeiser, G. 2009. Minimum standards for investment performance: a new perspective on non-life insurer solvency, *Mathematics and Economics* (45): 113–122.

Esson, R.; Cooke, P. 2007. Accounting and solvency convergence - Dream or reality? *Geneva Papers on Risk and Insurance- Issues and Practice* 32 (3): 332–344. http://dx.doi.org/10.1057/palgrave.gpp.2510135

De Laruasiere, J. 2009. *The high level group on financial supervision in the EU.* Report. Brussels: 75.

Kamienė, J.; Žalys, M. 2007. *QIS3 – minimalūs kapitalo reikalavimai.* Draudimo priežiūros komisija. [Online] [Accessed 24 January 2012]. Available from Internet: www.dpk.lt/mokumas2

Kiškienė, R. 2006. *Mokumas II. QIS2 – Quantative Impact Study*. Draudimo priežiūros komisija. [Online] [Accessed 24 January 2012]. Available from Internet: www.dpk.lt/mokumas2

Liebwein, P. 2006. Risk models for capital adequacy: Applications in the context of solvency II and beyond. *Geneva Papers on Risk and Insurance - Issues and Practice* 31(3): 528–550. http://dx.doi.org/10.1057/palgrave.gpp.2510095

Lietuvos Respublikos Draudimo priežiūros komisija. 2005. *Mokumas 2. Informacija apie projekto eigą.* [Online] [Accessed 24 January 2012]. Available from Internet: www.dpk.lt/mokumas2

Linartas, A. 2006. *Mokumas II poveikis Baltijos valstybės draudikams.* Draudimo priežiūros komisija. [Online] [Accessed 24 January 2012]. Available from Internet: www.dpk.lt/mokumas2

Linartas, A. 2007. *QIS3 – bendrieji principai.* Draudimo priežiūros komisija. [Online] [Accessed 24 January 2012]. Available from Internet: www.dpk.lt/mokumas2

Linartas, A.; Baravykas, R. 2010. Choosing discount rate for the evaluation of insurance liabilities, *Intelectual Economics*: 1(7): 30–40.

Linder, U.; Ronkainen, V. 2004. Solvency II - Towards a new insurance supervisory system in EU, *Scandinavian actuarial Journal* 6: 462–474. http://dx.doi.org/10.1080/03461230410000574

Peleckienė, V.; Peleckis, K. 2010. Draudimo verslas Europos Sąjungoje: draudėjų apsauga, *Viešasis administravimas = Public administration.* 3–4(27–28): 44–51.

Peleckienė, V.; Peleckis, K. 2011. Consultation of insurance industry – condition of Solvency II effective implementation into national legislation, *Management Consulting: the Central and Eastern European Perspective*, Cracow : Cracow University of Economics Foundation. ISBN 9788362511068. p. 87–100.

Pitselis, G. 2009. Solvency supervision based on a total balance sheet approach, *Journal of Computational and Applied Mathematics* 233: 83–96. http://dx.doi.org/10.1016/j.cam.2009.07.031

Pitt, D. 2006. Regression quantile analysis of claim termination rates for income protection insurance. *University of Melbourne Centre for Actuarial Studies Working paper*. Series No. 135.

Schubert, T.; Grieÿmann, G. 2007. German proposal for a standard approach for Solvency II. *Geneva Papers on Risk and Insurance- Issues and Practice* 32(1): 133–150. http://dx.doi.org/10.1016/j.cam.2009.07.031

Solvency II: a new framework for prudential regulation of insurance in the EU. Discussion paper. 2006. United Kingdom: HM Treasury.

The Directive 2009/138/EC of the European Parliament and of the Council of 25 November 2009 on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II), *Official Journal L 335* 17/12/2009: 0001 – 0155.

Why exessive capital requirements harm consumers, insurers and the economy, March 2010. [Online] [Accessed 26 January 2012]. Available from Internet: www.cea.eu

Wahlström, G. 2009. Risk management versus operational action: Basel II in a Swedish context. *Management Accounting Research* a Swedish context. *Management Accounting Research* (March): 53-68