The fourth quantitative impact study of new regulation in the insurance sector

Part 2

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OWN FUNDS

Own funds represent the available funds of an insurance undertaking which are able to absorb financial losses and thereby protect the insurance undertaking and its clients. They are formed from basic own funds and ancillary own funds. The process of the determination of eligible own funds may be divided into three steps[1]:

1. determination of own funds;
2. classification of own funds;
3. eligibility of own funds.

Basic own funds are formed by balance-sheet items as a surplus of assets over liabilities (more information in Valuation of Assets and Liabilities in the previous issue) increased by subordinated liabilities upon a deduction of own shares held by the insurance undertaking. Ancillary own funds are formed by off-balance-sheet items (for instance, unpaid share capital and letters of credit) and the possibility to use them is conditioned on the prior approval of the supervisory authority. The reason for the prior approval consists mainly in the fact that the valuation rules do not relate to them and are determined as a nominal value or value determined on the basis of prudent and realistic prognoses. Own funds are classified in terms of quality into three classes based on qualitative characteristics (Article 93 of the Solvency II Directive), while the extent by which they correspond to these characteristics is decisive for their categorisation into a class.

To cover the minimum capital requirement (MCR), it is possible to use only basic own funds, while class 1 must be larger than a half of basic own funds or class 2 must be smaller than class 1.

To cover the solvency capital requirement, it is possible to use basic as well as ancillary own funds, while class 1 must be larger than one third of total eligible own funds or the sum of class 2 and class 3 must be smaller than twice the class 1 and class 3 must be smaller than one third of the total eligible own funds, or class 3 must be smaller than a half of the sum of class 1 and class 2.

The basic goal of the quantitative impact study, QIS 4, has been to determine the amount of own funds eligible to cover two Solvency II capital requirements (SCR and MCR). The technical specification of QIS 4 has preliminarily determined a list of possible items of own funds.

In the opinion of the insurance undertakings in the SR which participated in the quantitative impact study, QIS 4, own funds are adequately specified. None of the insurance undertakings has had more serious problems when classifying own funds. One insurance undertaking stated that it started to manage its own funds for its internal needs on a basis similar to Solvency II.

All the components of insurance undertakings own funds have been classified as class 1. Please note that insurance undertakings in Slovakia currently do not, to any great extent, use active capital management. When compared to Solvency I, there has been a significant growth in own funds (approx. 68%), which has resulted from valuation, especially the release of technical provisions. None of the insurance undertakings has used subordinated liabilities or hybrid capital as a component of its own funds. For this reason, we have not received more than one item of feedback from the insurance undertakings. One insurance undertaking stated that it prefers the classification of hybrid capital into a single class, since a potential division could be quite complicated. None of the insurance undertakings has shown ancillary own funds.

Since the capital used by the insurance undertakings to cover the solvency capital requirement and minimum capital requirement has been classified as class 1, the insurance undertakings have

1 *Explanatory report to directive of the European Parliament and of the Council on the taking-up and pursuit of the business of insurance and reinsurance, Version COM(2008) 119 final.*

Table 2 Classification of own funds

Nature/quality	Basic own funds	Ancillary own funds
High	Class 1	Class 2
Medium	Class 2	Class 3
Low	Class 3	–

Source: Explanatory report to directive of the European Parliament and of the Council on the taking-up and pursuit of the business of tnsurance and reinsurance, Version COM(2008) 119 final.

Table 3 Comparison of all insurance undertakings' own funds according to Solvency II and QIS 4

	Solvency I	QIS 4 Total	QIS 4 Class 1	QIS 4 Class 2	QIS 4 Class 3
Total own funds (in EUR millions)	798	1,344	1,344	0	0
Total own funds (in %)	–	100.0	100.0	0.0	0.0

Source: NBS.

Table 4 Coverage of solvency capital requirement (in EUR millions)

All insurance undertakings	Total	1/3 SCR	Surplus
Class 1	1,344	145	1,198
Class 2	0	145	–
Class 3	0	145	–

Source: NBS.

Table 5 Coverage of minimum capital requirement (MCR) (in EUR millions)

All insurance undertakings	Total	1/2 MCR	Surplus
Class 1 – Basic basic Own own Funds funds	1,344	69	1,275
Class 1 – Basic basic Own own Funds funds	0	69	–

Source: NBS.

Table 6 Class 1 composition

All insurance undertakings	in EUR millions	%
Share capital	321	23.9%
Valuation adjustments (assets upon deduction of liabilities)	526	39.2%
Funds with a limited capacity to absorb losses	4	0.3%
Others	492	36.6%

Source: NBS.

had no problem in fulfilling the requirements with regard to the structure of own funds. This status will, in our opinion, probably create quite a significant area in the future for increasing the effectiveness of insurance undertakings' funding.

The composition of class 1 confirms that the growth of own funds in comparison with Solvency I is related to valuation adjustments. Despite this, when compared to other European countries, the share of share capital in class 1 may be regarded as being relatively high (higher by 7 percentage points).

Minimum capital requirement

The aim of the minimum capital requirement is determination of the capital required for an insurance undertaking to prevent the excessive exposure of the insurance undertaking's clients to risk. The minimum capital requirement represents the level of capital below which an insurance undertaking's own funds should not decrease. Any decrease in eligible own funds below the MCR level may, in the event that the insurance undertaking is unable, within the framework of a short time interval, to increase its own funds, cause the supervisory authority to withdraw the undertaking's licence to perform insurance business.

The Solvency II Directive provides that it is necessary to calculate the minimum capital requirement by a simple formula from auditable information within the coridor which is derived from the solvency capital requirement. At the same time there is the absolute minimum for the MCR, which may be considered as minimum required capital necessary for performance of the insurance business. The starting point for the determination of the MCR absolute minimum has been the amount of the minimum Guarantee Fund for Solvency I at the time of the adoption of the Solvency II Directive. The MCR calculation is based on technical provisions, written premium, sum at risk, deferred tax and administrative costs, where all the quantities used are determined, excluding the share of reinsurers.

The main goal of the quantitative impact study, QIS 4, in testing the minimum capital requirement has been to evaluate whether the proposed linear MCR approach combined with a cap of 50% and a floor of 20% of the SCR (this approach to the MCR is sometimes refer to as the "combined MCR") is applicable in practice and whether it provides a sufficient ladder for potential supervisory action.

The linear MCR to the SCR ratio was in the 10% to 41% range in the SR and the median value of this ratio was 29%. In the case of the combined MCR, the range of the result has narrowed to 20-41%, since the floor has been used in the case of three participants. The median value of this ratio remained unchanged.

The ratio of the linear MCR and SCR based on results of Slovak insurance undertakings has, in our opinion, been sufficient for an on-time intervention of the supervisory authority and, when determining it, the insurance undertakings did not identify any serious problems. However, within the framework of the European market, the impact study, QIS 4, has confirmed the need for the existence of corridor for the MCR in relation to the SCR. The reason consisted, for instance, in situations where the MCR has been higher than the SCR[2]. The application of the corridor approach will be however complicated by the fact that the

2 The cause of the higher MCR than the SCR was a different methodology in the calculation, reduced scope of risk entering the MCR and certain approaches making the SCR more realistic, for instance, the ability of future profit sharing to absorb losses.
3 Consultation Paper No. 55, Draft CEIOPS' Advice for Level 2 Implementing Measures on Solvency II: Article 128 Calculation of the MCR, CEIOPS-CP-55/09.

solvency capital requirement is calculated once per year and the minimum capital requirement once per quarter. The consultation paper, CEIOPS-CP-55/09[3], concerning the calculation of the MCR, tries to resolve this problem by simplifying the SCR calculation on a quarterly basis. On the other hand, the corridor approach will provide for a certain rate of sensitivity to risk for the MCR.

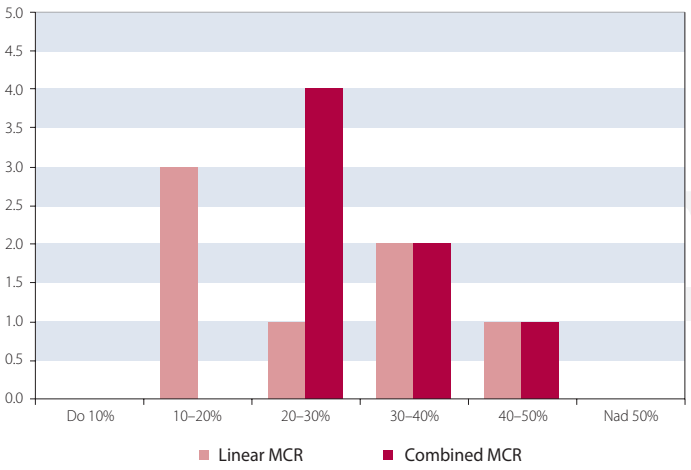
Proving the justifiability of the corridor approach in the European context when determining the MCR has led to the determination of MCR corridor in relation to the SCR within the framework of Solvency II Directive, while the corridor has been reduced to 25-45% (Article 127, Section 1b of Solvency II Directive). The reason for the increase in the floor of the MCR was mainly to provide a prudent capital minimum as per the role of the MCR. The cap of the MCR has been decreased to provide for sufficient ladder of intervention of the supervisory authority. The increase in the floor of the corridor will, in our opinion, contribute to the fact that the MCR will provide for such a level of capital to allow, in the event of an insurance undertaking encountering problems, the transfer of the portfolio of its insurance policies to another insurance undertaking. The reduction of the cap of the corridor may "undermine" this which, in our opinion, is a key goal of the MCR

Solvency Capital Requirement

The solvency capital requirement corresponds to such capital that will allow an insurance undertaking to avoid bankruptcy over the period of the next 12 months with a probability of 99.5%. The criteria determined in this manner may also be interpreted in such a manner that, over the next twelve months, bankruptcy or default should not occur in more than one in 200 insurance undertakings. The SCR is calculated either by a standard formula, which uses the prescribed parameters and factors, or by using an internal model which should most closely reflect the insurance undertaking's risk profile. Insurance undertakings may combine these two approaches and determine the SCR by a standard formula with the use of a partial internal model. Due to a limited database, insufficient practical experience, and potential ineffectiveness (benefits versus costs), the standard formula will be the practical alternative for most of the insurance undertakings in the Slovak market. The SCR should reflect the actual risk profile of an insurance undertaking, while taking into account all quantifiable risks and risk mitigating instruments, which, in the case of insurance undertakings, is especially represented by reinsurance. If an insurance undertaking's risk profile is altered significantly over a year, it will be necessary to recalculate the SCR annually. An exception will probably be the determination of the SCR for the requirements of the MCR determination.

Standard SCR equals the sum of the basic capital requirement (BSCR), operational risk capital requirement[4], adjustment for the loss-absorbing capacity of technical provisions[5], and deferred taxes. The BSCR covers the underwriting risk[6] of non-life, life, and health insurance, market risk[7] and counterparty default risk[8]. The BSCR calculation itself is divided into calculations of particular modules and sub-modules, which are subsequently aggregated by an estimate of the mutual linear dependences the so-called correlation matrices, as determined by Annex IV of the Solvency II Directive.

Chart 6 Division of MCR and SCR rate



Source: NBS.

According to the quantitative impact study, QIS 4, the basic capital requirement, BSCR, has had the largest share in the SCR. The operational risk capital requirement has formed the share in the SCR of 8% in median, however, this value does not reflect, in our opinion, the real operational risk, to which insurance undertakings are exposed, especially in case of the calculation, which is based on volume quantities and does not take into account the real level of the operational risk management quality in an insurance undertakings. This opinion has also been confirmed by statements from the insurance undertakings concerned, which, in addition, have considered the cap of the capital requirement in the amount of 30% of the BSCR to be too high. A part of QIS 4 has been a questionnaire in which the level and quality of the operational risk management in insurance undertakings have been ascertained. Responses were provided by four insurance undertakings. In the implementation of QIS 4, only one insurance undertaking devoted itself, to a certain extent, to operational risk management in association with its parent undertaking. Other insurance undertakings were, at that time, still in the planning phase.

The biggest share in the BSCR has been that of market risk, life underwriting risk and non-life underwriting risk. By contrast, according to results of QIS 4, the counterparty default risk has had only a small share in the BSCR.

Within the framework of the market risk module, the most significant have been interest rate risk, equity risk, and credit spread risk. Other risks (property risk, concentration risk, and exchange

4 Risk of a loss arising from inadequate or failed internal processes, or from personnel and systems, or from external events except for the risk arising out of strategic decisions and reputation loss risk (Article 13, Section 27 of Solvency II Directive).
5 Potential reduction of future discretionary benefits of insurance contracts e.g., by decreasing future profit sharing and a simultaneous decrease in technical provisions (Article 107 of Solvency II Directive).
6 Risk of loss or adverse change in the value of insurance liabilities, due to inadequate pricing and provisioning assumptions (Article 13, Section 24 of Solvency II Directive).
7 Risk of loss or adverse change in a financial situation, directly or indirectly arising out of a fluctuation in the level and volatility of market prices of assets, liabilities, and financial instruments (Article 13, Section 25 of Solvency II Directive).
8 The counterparty default risk covers risk-mitigating contracts, such as reinsurance arrangements, securitisations and derivatives, and receivables from intermediaries, as well as any other credit exposures which are not covered in the spread risk sub-module (Article 105, Section 6 of Solvency II Directive).

Table 7 SCR composition

	Median (in %)
BSCR	92.0
Operational risk	8.0
Risk-absorbing effect of future profit sharing and deferred tax liabilities in SCR calculation	0.0

Source: NBS.

Table 8 BSCR composition

	Median (in %)
Market risk	43.8
Exchange rate risk	24.3
Equity risk	8.6
Property risk	0.0
Credit spread risk	7.8
Concentration risk	0.8
Exchange rate risk	1.2
Counterparty defaul risk	0.6
Life insurance underwriting risk	45.5
Mortality risk	4.0
Longevity risk	0.1
Disability risk	2.3
Lapse risk	26.6
Expenses risk	11.3
Revision risk	0.0
Catastrophic risk	3.8
Health insurance underwriting risk	0.6
Accident and health short term risk	0.6
Premium and reserve risk	0.5
Catastrophic risk	0.3
Non-life insurance underwriting risk	56.1
Premium and reserve risk	46.3
Catastrophic risk	27.6

Source: NBS.

rate risk) seem, on the basis of the standard formula results, to be insignificant for the insurance undertakings concerned. The loss-absorbing capacity of technical provisions has not been tested in Slovakia, due to the complexity of the calculation and also due to the fact that, according to the statement of the insurance undertakings concerned, any potential decrease in the SCR would be insignificant. In Slovakia, the so-called equity dampener has not been tested, which consists of a symmetric arrangement mechanism, i.e., scenario adjustment depending on the economic cycle and duration dampener, i.e. scenario adjustment depending on a typical period of holding of investments in shares. Some insurance undertakings have cited their disagreement with this approach as a reason for inability to test the equity dampener. The effect of the equity dampener may be quite important, since a 10% reduction in the equity risk capital requirement has been demonstrated from the European results

Participants have criticized the approach of the determination of the capital requirement of the market risk of mutual funds, since the stress scenarios have been set discriminatorily in relation to other investments if an insurance undertaking has been unable to identify financial instruments composing the fund and has thereby been unable to apply the so-called *look-through* approach. In addition, this approach to mutual funds has been found to be demanding and impractical.

When calculating the life underwriting risk, there have been obscurities in the allocation of insurance products to life, non-life, and health insurance modules. One of the proposals of insurance undertakings has been to create a separate sub-module regardless of the type of insurance for health risk and disability risk. The most important share in the capital requirement for life insurance underwriting risk has been that of the lapses of an insurance policy, with payment of the surrender value and expense risk. Participants have considered a stress scenario of the increase in the lapse rate at the level of 30% to be little probable.

In the case of the non-life underwriting risk, the capital requirement has followed from three risk sources: premium risk, reserve risk, and catastrophic risk. The calculation of the capital requirement of the non-life underwriting risk and the completion of tables for the purposes of QIS 4 has been quite easy. However, a problem has arisen in the lack of information for the preparation of scenarios of catastrophic events in the SR. For this reason, all the insurance undertakings concerned could use only a factor calculation for the catastrophic risk, which, however, does not reflect the actual risk to which they are exposed.

QIS 4 has allowed (or tested, in order to make the SCR, which may not consist of a single universal approach, more realistic) for several arrangements and alternatives in the standard formula calculation (the capacity of technical provisions to absorb losses, deferred tax liabilities, equity dampener). Within the framework of QIS 4, we have not identified any interest of insurance undertakings in these possibilities, for which the reason has probably been the difficulty of application or disagreement with the theoretical assumptions of these approaches.

The calibration of the SCR standard formula, including the assumed linear dependences among particular modules and sub-modules, was criticised by participants in the SR as well as the EU. They reproached it in particular for the lack of transparency in their determination.

Internal models and SCR

We found from the questionnaire mapping the situation in the area of internal models that 43% of participants (3 out of 7) are currently actively working on the development of an internal model, while 29% of participants (2 out of 7) plan to use the internal model at least for the calculation

Table 9 Financial position of insurance undertakings which participated in QIS 4, by Solvency I and Solvency II

	Median	All insurance undertakings		Median	All insurance undertakings	Change	
						Median	All insurance undertakings
Solvency I margin	242%	258%	Solvency II margin	208%	309%	-34%	51%
Available solvency margin	21	532	Own funds	120	1344	-	153%
Required solvency margin	13	206	SCR	40	435	-	111%
Guarantee Fund	6	76	MCR	12	137	-	81%
Surplus of available solvency margin	12	326	Surplus of own funds	61	908	-	179%

Source: NBS a výpočty autorov.
Note: Values in the absolute amount are in EUR millions.

of the partial SCR and 71% of participants (5 out of 7) have not yet decided whether they will use the internal model for the calculation of the SCR. As per our information, internal models are not developed by particular insurance undertakings individually, which would not probably have any great importance either, but are developed at the level of whole insurance (or financial) groups. Within the framework of QIS 4, the capital requirement determined on the basis of an internal model has been provided by one insurance undertaking only and an output of a partial internal model for several sub-modules of market risk and life underwriting risk and operational risk module has been provided by one insurance undertaking.

Conclusion

From the perspective of the Slovak Republic, testing the quantitative requirements according to Solvency II within the framework of QIS 4 has proved that the insurance undertakings which participated in QIS 4, have a capital base for a new regulation. When analyzing the information from QIS 4, we identified two primary effects on the financial position of insurance undertakings, namely, an increase in the capital requirement, which was caused by taking into account all the quantifiable risks and capital release, which was caused by not taking into account the prudent aspect in the valuation of technical provisions. Since the release of technical provisions has been much higher than the increase in the capital requirement, the financial position of the insurance undertakings has improved. Please note that QIS 4 has followed from the figures for 2007, i.e., before the outbreak of the financial and economic crisis, which has caused a fall in prices, and an increase in the volatility and loss of liquidity in regulated markets. There is a high probability that these facts would have an impact on own funds of insurance undertakings, since there would probably be losses in the valuation of financial instruments to an economic value.

The solvency capital requirement compared to the required solvency margin in accordance with Solvency I has increased in the absolute value; however, upon elimination of the effects of valuation adjustments, there has been a real decrease in the regulatory capital requirement. When comparing the capital requirement, which would include the regulatory amount of technical provisions and required amount of own funds, the regulatory capital would be decreased in accordance with Solvency I.

As regards the minimum capital requirement, despite the combined approach to the MCR and the related existence of the cap, in accordance with Solvency II, there would, except for one case, be an increase (for almost 86% of the insurance undertakings concerned). We have not identified any reasons for the increase in the minimum capital requirement. Since the increase in the solvency capital requirement has been higher than the increase in the minimum capital requirement, a larger scope has been created for interventions, if any, on the part of the supervisory authority. In the conditions pertaining in the SR, one of the goals of Solvency II has thereby been confirmed, namely, the provision of sufficient scope for the supervisory authority so that it could undertake remedial action to recover an insurance undertaking, and thereby provide for the financial stability and protection of the eligible interests of its clients.

In terms of the financial stability of the Slovak insurance sector as a whole, it will be needed to analyse more specifically the robustness of the market capital capacity and its resistance to shocks, e.g., as a result of socio-economic and demographic changes since, by the introduction of Solvency II, there will probably be an overall decrease in the regulatory requirement for capital for insurance undertakings in the Slovak Republic.

Source:
1. Completed questionnaires sent by insurance undertakings to the National Bank of Slovakia within the framework of the ascertainment of the fourth quantitative impact study.
2. QIS4 Technical Specifications (MARKT/2505/08).
3. CEIOPS' Report on its fourth Quantitative Impact Study (QIS4) for Solvency II, CEIOPS-SEC-82/08.
4. Call for Advice from CEIOPS (Fourth Quantitative Impact Study) MARKT/2504/08.
5. Consultation Paper No. 35, Draft CEIOPS" Advice for Level 2 Implementing Measures on Solvency II: Valuation of Assets and "Other Liabilities", CEIOPS-CP-35/09.
6. Consultation Paper No. 41, Draft CEIOPS Advice for Level 2 Implementing Measures on Solvency II: Technical Provisions – Article 85 c Circumstances in which technical provisions shall be calculated as a whole, CEIOPS-CP-41/09.
7. Consultation Paper No. 55, Draft CEIOPS' Advice for Level 2 Implementing Measures on Solvency II: Article 128 Calculation of the MCR, CEIOPS-CP-55/09.
8. Directive of the European Parliament and of the Council on the taking-up and pursuit of the business of insurance and reinsurance, Version COM(2008) 119 final.
9. Directive of the European Parliament and of the Council on the taking-up and pursuit of the business of insurance and reinsurance, Version adopted at the first reading by the European Parliament.
10. First Council Directive of 24 July 1973 on the coordination of laws, regulations and administrative provisions relating to the taking-up and pursuit of the business of direct insurance other than life assurance Directive 2002/83/EC of the European Parliament and of the Council of 5 November 2002 concerning life assurance.