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Adapting the solvency regulations to times of crisis, accepting the riskiness of the situation

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The G20 experts are calling for more capital in financial institutions.
The need for a selective increase in capital requirements, for example in the case of investment banks, is certainly one of the lessons to come out of the current crisis. Everyone agrees that the 2.5% capital of Lehman Brothers was ridiculously small in relation to its exposure. Yet an indiscriminate increase of capital requirements would be more damaging than helpful for the economy, especially in times of financial stress. Imagine that the pilot of an airplane calls the control tower to tell them he is out of fuel and needs their authorization to use the reserves. The control tower responds: "No, those are reserves; you are only authorized to use them in an emergency". "But this is an emergency" replies the pilot. The tower gives its final answer: "No, this situation is not listed in the manual". We feel a little bit like the pilot of this airplane today when the CEIOPS recommends a general increase of capital requirements or when the national supervisory bodies rule out using part of the solvency margin as a shock absorber in a situation where macro-financial stress is affecting the whole economy. For example, the currently applied European directives require insurance companies to constantly satisfy their capital requirements, independently of the current economic and financial situation. Moreover, if supervisory bodies do allow a company to breach the rules, it is only on an ad hoc, discretionary and non-transparent basis. The world economy is going through one of the most severe crises of the modern age and we are applying the same rules as if nothing were happening, because such a crisis is not "listed in the manual".

The pro-cyclical nature of the risk-based regulations is evidenced today, as are the limitations of such regulations. They have not been able to contain the massive underestimation of risks that preceded the crisis and would now require much more capital than companies can afford in times of scarce liquidity. Everybody would agree today that the economic situation for companies is more risky than before.

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Good risk models should, therefore, reflect this in their results and ask for more capital since the risk is higher. The problem is that the nature of the risks involved has not changed; companies have been dealing successfully with them. Moreover, for most of the insurance industry, they will only materialize much later. It is extremely dangerous to require the financial industry to hold more capital when this resource is disappearing rapidly with the huge downturn in the financial markets and the reluctance of investors to risk their liquidity. During the crisis we have seen the hybrid debt market die out completely, requiring unreasonable spreads of up to 2000 basis points. At the same time, it would be absurd to close companies because they could not provide solvency for liabilities that have not yet materialized.

In the face of this difficult situation, the insurance industry has come up with a number of different propositions for fighting pro-cyclicality. Most of the solutions put forward so far seem to be ad hoc ways of playing with the parameters in order to make model results look more acceptable. A perfect example of this is the CFO forum's idea of using the swap rate for discounting instead of the risk-free rate. There is no real justification for such a choice, other than the achievement of a higher reserve discount with the swap rate. This proposal neglects the fact that swap rates in themselves carry a higher risk than government yield - this extra risk is not accounted for in the calculation. This is demonstrated by the difficulty of obtaining swap deals with long maturities on the market, and by the huge counterparty risk that is involved if one does find such a deal. Other proposals, such as allowing the company to carry some negative capital, are along the same lines, i.e. playing around with the models because we are not satisfied with their outcome. The arbitrariness of these suggestions is casting doubt on the willingness of companies to play by the new rules, and putting regulators in a situation where they will have to stick by the rules designed for good times.

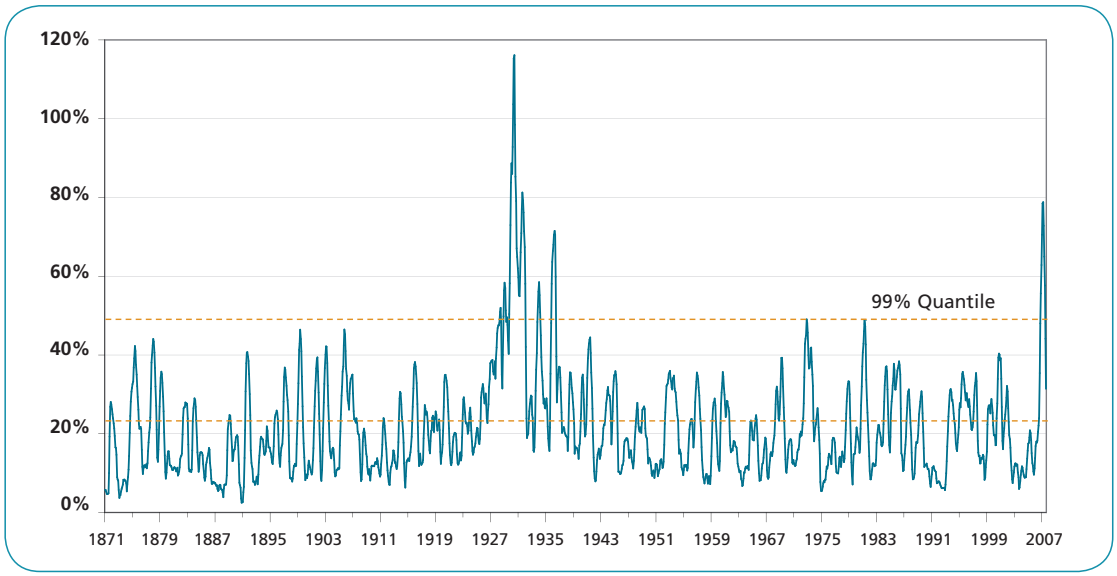
We are of the opinion that the problem should be tackled at its root, namely the riskier environment in which we now find ourselves. It is absurd to require companies to demonstrate the same level of security during periods when such a level is simply unrealistic. It is like asking a ship not to pitch on rough seas. We should simply recognize the fact that times have changed, and to reflect this regulators should relax the rules for a while and bring down the threshold at which companies have to compute their risk-based capital. Currently, in Solvency II the threshold is 99.5% for the Value-at-Risk. What prompted the choice of this value? Is it carved in stone? The reason is that we wanted a good level of security and we have been used to thinking in the decimal system since the French revolution. If this threshold had been established before then, we would be thinking more in terms of a percentage in the 80s. All of which is simply to illustrate the fact that nobody can clearly explain why the threshold should be 99.5% instead of 99% or 99.9%. The only real requirement is a certain level of comfort with the chosen probability. This should make insolvency highly unlikely. We think that once every 100 years is already quite improbable and should suffice in times of crisis. Incidentally, lowering the threshold from 99.5% to 99% would currently reduce SCOR's required capital by about 10%, roughly compensating for the increase in risk capital brought about by higher market volatility.

The most consistent way to address this problem would be to define capital requirements that are contingent on the current position in the economic and financial cycle. Or, to put it in more technical terms, to calculate a Value-at-Risk that depends on the specificities of the current economic and financial situation, at a quantile that remains fixed at 99.5% throughout the cycle. Of course, for the same risk portfolio this Value-at-Risk will fluctuate with the position in the cycle, being likely to increase in boom times, when the probability of a future activity slowdown increases, and to decrease in times of recession, when the probability of a future rebound increases[1]. Unfortunately, most of the internal models and economic scenario generators currently available do not provide such Value-at-Risk contingent on the macro-economic situation. Not to mention those solvency standards that totally ignore the issue (even Solvency II makes only a short reference to it and handles it in a simplistic manner). The coming generation of internal models, on which we are working hard, is likely to go forward in this field and provide new innovative solutions by using the concept of dependence as a basis and by linking actuarial calculations with econometrics[2].

(1) Cf. F. Bec and C. Gollier (2009): "Term Structure and Cyclicality of Value-at-Risk: Consequences for the solvency capital requirement", mimeo, Toulouse School of Economics.

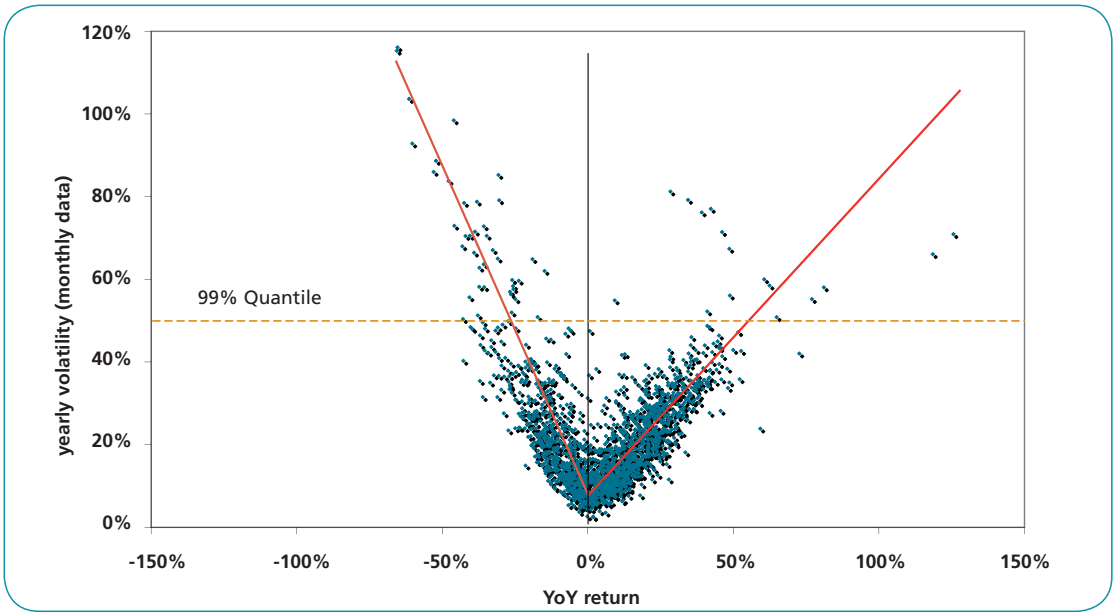
(2) Cf. SCOR 2008: "From Principle-Based Risk Management to Solvency Requirements; Analytical Framework for the Swiss Solvency Test".

Figure 1: Yearly volatility of US stock market since 1870 *(monthly data)*



In the meantime, we cannot ignore the problem or solve it with non-transparent schemes. This would be neither accurate nor efficient. It is clearly important that the law set a threshold of security sufficiently remote to inspire confidence in all stakeholders in the system, but it would be logical to allow the supervisory authorities to change this, within a predefined range, when times are difficult and bring it back to its former level when the waters are calm again. Our proposal would be to link the threshold with the volatility of financial markets, bearing in mind that increased volatility is linked to macro-financial stress, as is apparent from Figures 1 and 2. If this volatility goes above twice its long-term average level, as in the case of a falling stock market, the regulators would allow companies to carry a solvency capital measured at the 99% threshold for the next year. As can be seen from Figures 1 and 2, this rule would have led two times to a regime-switch since 1870: the first time during the crisis of 1929 and the second time during the current crisis - i.e. only in times of major macro-financial distress. In Figure 1, we display the evolution of volatility on an annual basis and in Figure 2 we illustrate the varying dependence of volatility on the sign of the financial returns. There is a stronger correlation when returns are negative.

Figure 2: Return and volatility of US stock market (1870-2009)



Everybody knows that this is a less secure threshold, but it reflects the reality of the situation at the time. As soon as volatility falls to less than twice its average level, the threshold is automatically moved back to 99.5%. Of course, a flexible rule like this would lead insurance and reinsurance companies to slightly reduce their extra capital, i.e. their buffer capital or security margin[3], but this is a wanted effect. What we need is to make sure that the decision to switch from one regime to another is precisely and objectively regulated by law. Giving this flexibility to the system combines three advantages: it works against the famous pro-cyclicality, it reduces the need to lock up useless extra capital and it is transparent by recognizing an objective situation. Companies can still use their own threshold for themselves and are simply given time to refurbish their capital. Our plane should be able to use its reserves to land safely and refuel.

(3) Cf. J.L. Besson, M. Dacorogna, P. de Martin, M. Kastenholz and M. Moller (2009): "How much capital does a reinsurance need ?", Geneva Papers on Risk and Insurance, volume 34, Issue 2.

Of course, there might be another very simple solution: the requirement of uniformly higher capital in insurance and reinsurance. This would mean that, even in the kind of systemic crisis we are currently experiencing, the probability of breaching the rules and making use of the solvency margin is no higher than 99.5%. However, this solution is not satisfactory because it would mean immobilizing a huge amount of supplementary capital, it would pointlessly increase the cost of the protections provided by insurers and reinsurers and it would dry out the capital available for the rest of the economy and weaken non-financial companies. It would, therefore, reduce the quality of the asset portfolios of insurance and reinsurance companies.

It is essential for the credibility of the system to put forward transparent rules that everybody can understand. Recognizing the objective situation and adapting the threshold to it, is a simple way of fighting against the rigidity of rules that could destabilize the industry even further, with no real justification.

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