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CAPITAL MANAGEMENT IN A SOLVENCY II WORLD: REINSURANCE OR DEBT?

Editor's note:

Capital management is vital for insurance companies, as their capacity to write business depends on their ability to maintain a level of capital that satisfies their most important stakeholders: regulators, rating agencies, policyholders and intermediaries. The relative importance of the various stakeholders varies depending on the geography and the lines of business a company operates in, but it is fair to assume that regulatory requirements always take precedence. In Europe, a significant change is looming in the insurance (and reinsurance) regulatory landscape: the implementation of Solvency II, a new regulatory regime that will come to force in January 2016. Solvency II introduces a risk-based framework for assessing solvency, as well as an approach that involves tiering of capital. The new regime is expected to increase the average capital requirements for the industry. The ability to manage capital efficiently will become even more important in the new Solvency II environment. In this paper we explore the relative benefits of the most common sources of capital (besides retained earnings), with a particular focus on a comparison between subordinated debt and reinsurance. We use a case study to demonstrate that in most cases issuing subordinated debt is a better capital management tool than purchasing quota share reinsurance.

Kind regards,
Laura Santori, Partner

The relative benefits of different sources of capital

Figure 1 represents the different sources of capital that are available to an insurer. They differ in terms of tenor, flexibility, capacity to absorb losses, availability and cost. These are the considerations we use to assess the relative benefits of different sources of capital.

Figure 1: Different sources of capital

Equity

Equity, or paid-up capital, is the strongest form of capital. Equity is a permanent component of the insurer's capital base. It is flexible – as the insurer can elect not to pay dividends – and readily available if losses on a going concern need to be absorbed. The supply of equity is, however, uncertain, especially in times of stress when it can be extremely difficult to attract new investors or to demand more commitment from existing ones via a rights issue. In addition, a capital increase dilutes existing shareholdings and may result in the main shareholders losing control of a company.

Equity is also the most expensive form of capital: it is subordinated to all other creditors of the company, which means shareholders bear a greater risk than any other capital providers and therefore expect a higher level of remuneration – that is, a higher risk premium.

Subordinated debt

Subordinated debt is the next strongest form of capital. Subordinated debt can count as solvency capital in the eyes of the regulator and rating agencies provided it has certain features such as a minimum duration, loss absorption and degree of subordination. Subordinated debt is less flexible than equity because generally companies cannot elect to skip coupon payments. Subordinated debt absorbs losses if a company is wound up, and, in case of subordinated debt with the highest equity like component, also in a going concern.

Debt holders are senior to equity shareholders, and because they take less risk they require lower returns. Therefore subordinated debt is less expensive than equity; the more equity-like its features are, the more expensive it is. Debt is generally more readily available than equity, and issuing debt does not cause dilution or loss of control for the main shareholders.

Reinsurance

Reinsurance is a tool to reduce capital requirements – as it reduces the risk retained by an insurer – and can therefore be seen as a source of capital, broadly speaking. Reinsurance, depending on the structure, is of short tenor – generally one year. It is inflexible, and its availability and cost vary considerably, depending on the pricing cycle but also on the particular situation of the individual insurer. Given that reinsurance provides regulatory capital relief rather than just capital funding, assessing its relative benefits requires us to make an assumption about how the capital requirement for a company is calculated.

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Relative benefit of capital sources in a Solvency II environment

As mentioned above, Solvency II introduces a tiering of capital, as illustrated in Figures 2 and 3.

Figure 2: Tiering of own funds in Solvency II

	Tier I	Tier II
Subordination	Most deeply subordinated in winding-up	Effectively subordinated in winding-up
Loss absorbency	Fully paid in First to absorb losses	Not fully paid in Must absorb losses to some degree
Sufficient duration	Undated	Minimum of 10 years
Incentives to redeem	None. Call subject to regulatory approval	Moderate. Call subject to regulatory approval

Figure 3: Classification of debt
Source: Twelve Capital

Subordinated debt can be in either tier, depending on how equity-like its features are. The solvency capital requirement (SCR) in Solvency II is calculated in accordance with a formula prescribed in the regulation (the standard formula), or is based on the insurer's own internal capital model. We assume that most insurers in Europe will make use of the standard formula, and we therefore apply the standard formula to assess the relative benefits of reinsurance.

Under the standard formula, however, only quota share (QS) reinsurance (where an insurer cedes a percentage of every risk it insures within selected classes of business) provides substantial capital relief. Non-proportional reinsurance (where an insurer cedes only the losses above a certain retention limit) is not taken completely into account. This means that in a Solvency II capital framework not all forms of reinsurance can be accounted as capital, because not all forms provide capital relief. This puts reinsurance at a disadvantage when looking at the relative benefits of capital sources in a Solvency II regime.

Assuming the capital requirements in a Solvency II framework are calculated using the standard formula, we will now develop a case study to assess the relative benefits of the available sources of capital. We will focus on a comparison between subordinated debt and reinsurance, and leave equity out of the picture because, although it is the strongest form of capital, it is also the most expensive.

Case study: relative benefits of subordinated debt vs. reinsurance for a medium size European P/C insurer

To help weigh up the relative benefits of QS reinsurance and subordinated debt, we asked Towers Watson, a leading actuarial consultancy, to build a simplified business planning model appropriate for a representative P&C (property & casualty) European company. P&C insurers have traditionally used QS reinsurance as a capital management tool.

The model projects the balance sheet and the profit & loss over four years, and uses the standard formula to estimate the solvency capital requirement (SCR) at the end of each projection period.

The model is run using four different scenarios that test the use of subordinated debt and quota share reinsurance separately (details of the modelling environment can be found in Appendix I).

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The company

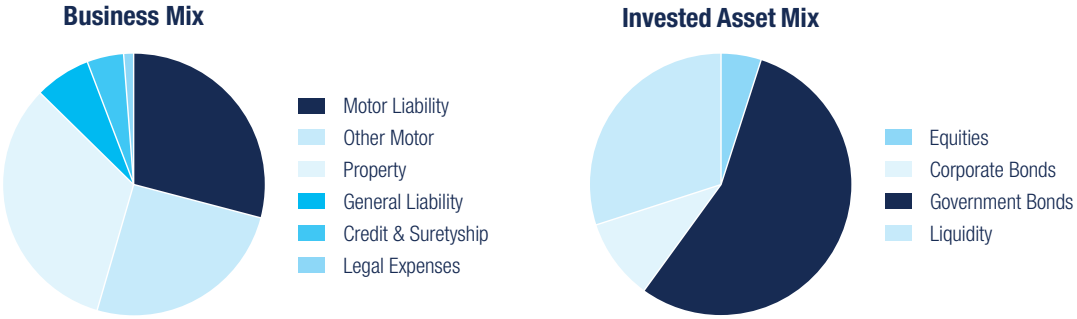

Figure 4: The company
Source: Towers Watsons, Twelve Capital

The company represents a mid-size European P&C insurer that writes a mix of personal lines, mostly geared towards motor and property business. At the beginning of the projection period the company writes €170m of premium and the model assumes a premium growth of circa 3% per year. At the start of the projection period, and before issuing any debt or purchasing any reinsurance, the SCR coverage ratio (the ratio of the company's own funds to its solvency capital requirement) stands at 110%. In each of the scenarios but one (scenario 3) the company targets 160% SCR coverage, either through the issuance of subordinated debt or through the purchase of QS reinsurance for all lines of business. This is based in the most 'capital hungry' year, when capital requirements are at their highest level.

Scenario I – large underwriting profit

In this scenario the company enters a period of strength in the pricing cycle and generates steady, strong underwriting profits, so the net income increases shareholders' funds every year.

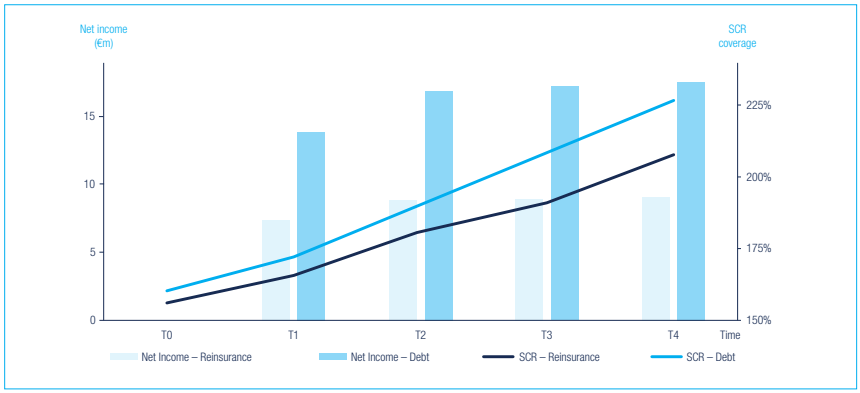

Figure 5: Scenario I – high underwriting profits
Source: Towers Watson, Twelve Capital

The insurer is so profitable that shareholders' funds grow quicker than the SCR for the growing business. This means that even without the issuance of subordinated debt or the purchase of reinsurance, the SCR coverage increases during the projection, making the first year of the projection the most 'capital hungry' year. The level of debt issued and QS reinsurance purchased are such that the 160% coverage target is attained in year one.

The graph shows that SCR coverage is higher in the debt scenario than in the reinsurance scenario, and this is due to the amount of retained net income. The retained net income in the debt scenario is almost twice that achieved in the reinsurance scenario – as with QS reinsurance the profits as well as the losses are ceded – and therefore the shareholders' funds grow faster than the reinsurance can reduce the capital requirement.

Scenario II – small underwriting profit

In this scenario the company generates a small but steady underwriting profit throughout the projection period.

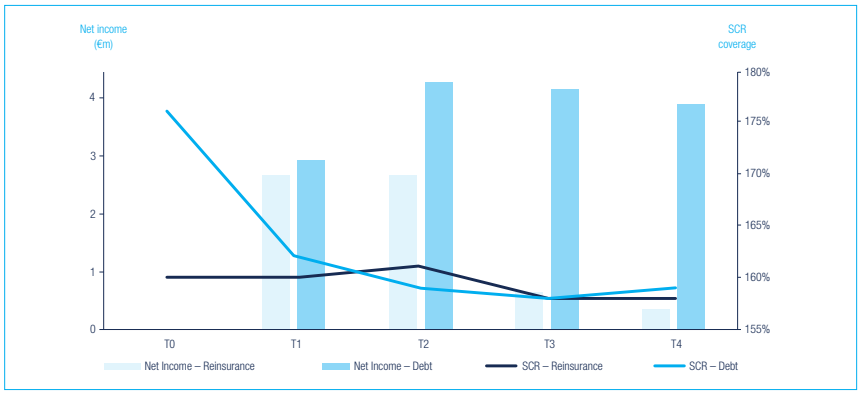

Figure 6: Scenario II – small underwriting profits
Source: Towers Watson, Twelve Capital

Unlike in scenario I, the small profit the company makes is insufficient to offset the increase in capital requirements due to the growth of the business. Therefore the amount of debt required to reach the target coverage ratio during the more 'capital hungry' year leads to a coverage ratio higher than 160 % at the beginning of the projection.

On the other hand, the amount of QS reinsurance required to achieve the target coverage ratio solvency ratio eats away a significant part of the profit, resulting in a much worse profit signature over the four year projection. These results are obviously quite sensitive to the required ceding commission, and the cost of debt.

Scenario III – underwriting losses

In this scenario, the company enters a soft period in the pricing cycle and in each year of the projection period generates losses that are significant enough to compromise its solvency position (i.e. the SCR coverage ratio without debt or reinsurance is below 100 %).

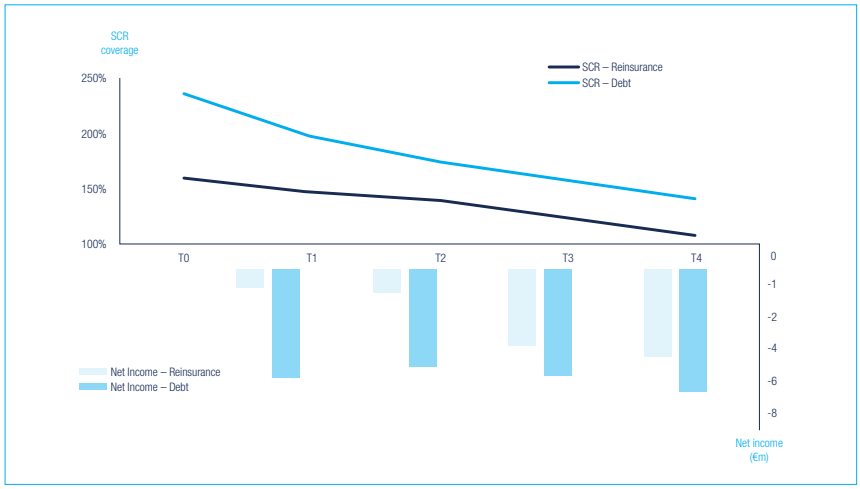

Figure 7: Scenario III – underwriting losses
Source: Towers Watson, Twelve Capital

To reach the target SCR coverage in this scenario, the company has to issue a significant amount of debt at the beginning of the period, the cost of which results in even greater losses, which in turn result in a bigger decrease in shareholders' funds.

On the other hand, in a loss scenario the reinsurance is much more effective in mitigating losses, which in turn ameliorates the decrease in shareholder's funds. Even so, the decrease in shareholders' funds is such that the target SCR coverage ratio cannot be attained without increasing the QS reinsurance cession beyond what is realistic. Therefore the target SCR coverage ratio cannot be met in the reinsurance scenario.

It is worth noting that it would be unlikely that reinsurance would be readily available in the open market on competitive terms for a company that posts losses of such a magnitude.

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Scenario IV – single event loss

For this scenario we have created a more dynamic model:

- the amount of QS purchased progressively increases, but there is no target coverage ratio
- the ceding commissions vary with the performance of the company
- the underwriting performance varies: the company posts small underwriting profits until year 3, when it has a significant loss, and then recovers in year 4.

In these more dynamic conditions, debt and reinsurance result in the same profit signature, and the cumulative profit is slightly higher in the reinsurance scenario as losses are ceded, but not enough that the reinsurance strategy outcome is better than the debt strategy outcome; the coverage ratio is still higher under the debt scenario.

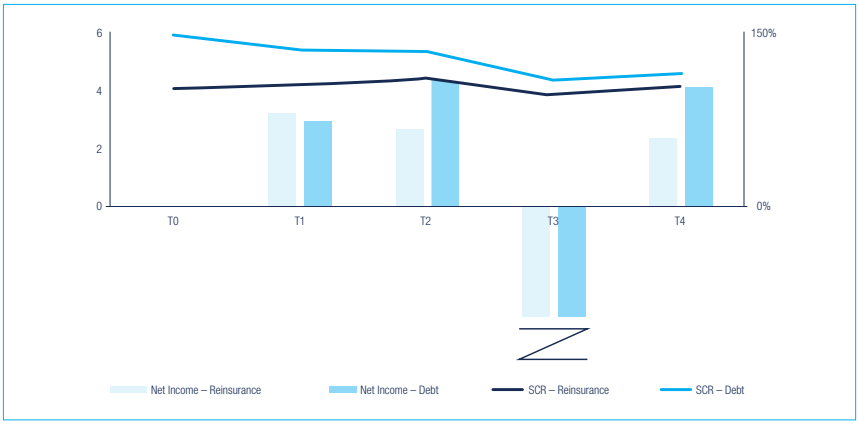

Figure 8: Scenario IV – single event loss
Source: Towers Watson, Twelve Capital

Summary of results

Figure 9 compares the debt and reinsurance strategy outcomes for each scenario in terms of cumulative profit and effectiveness in achieving the target solvency coverage.

		Cumulative Profit	Solvency Coverage
High Underwriting Profit	REINSURANCE	34.13	+
	DEBT	65.43	++
Small Underwriting Profit	REINSURANCE	6.38	++
	DEBT	15.24	++
Underwriting Losses	REINSURANCE	-13.14	– –
	DEBT	-27.86	–
Single Event Losses	REINSURANCE	0.19	+
	DEBT	0.11	++

Figure 9: Summary of results
Source: Twelve Capital

Our case study demonstrates that:

- When the company is mostly profitable, issuing debt rather than purchasing QS reinsurance is more economical because no profits are ceded to the reinsurer. QS reinsurance becomes increasingly efficient as underwriting losses increase.
- In every scenario, issuing debt is more efficient than purchasing QS reinsurance as far as the solvency coverage is concerned. This is obvious when the company is mostly profitable, as the higher retained profits contribute to an increase in shareholders' funds. When the company makes significant underwriting losses that bring the coverage ratio below 100 %, its ability to purchase reinsurance is limited, making it unlikely that the target SCR coverage ratio could be achieved.

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Conclusion

Notwithstanding the limitations of a simplified, static model, our case study provides some useful insights.

Issuing debt is much more efficient than purchasing QS if the primary goal is to manage the SCR coverage ratio, but is not efficient for controlling losses. Purchasing QS reinsurance is an efficient way to limit losses, but it is not a very efficient way to manage the SCR coverage ratio. We can therefore conclude that debt is more of a capital management tool and reinsurance is more of a risk management tool.

In our experience, large sophisticated multiline insurers and reinsurers are adept at optimising their capital structure with a mix of subordinated debt and equity and at using reinsurance to manage their risk exposure.

We hope this study will help European insurers tackle the complex task of capital management in a Solvency II environment.

Appendix I:

The modelling environment

- Reinsurance is modelled as a whole account quota share contract, and ceding commissions are fixed in all scenarios except scenario III, where they vary according to the performance of the insurer.
- Debt is modelled as a standard bond that is eligible as Tier II capital. Only interest is paid.
- The level of QS reinsurance and debt in the first year are set so as to meet the target coverage ratio in the most 'capital hungry' year of projection (although scenario IV is more dynamic).
- Interest on the debt and ceding commissions for the QS reinsurance assume market rates.