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## Country Focus: Euroland

By Matthew Modisett

Europe is the place to be for anyone interested in risk management. The regulations coming on line focus on risk management and require even the most reluctant insurance executive to do the same. Those who embrace these changes will be the true winners, in terms of reduced capital requirements, excess returns on capital and enhanced competitive position.

While Europe is not actually a country, the European Union (EU) constitutes a separate regulatory jurisdiction for insurance in its own right, or at least it will when Solvency II hits. The term Euroland only approximates the situation, since the set of countries that make up the Euro differs from that for the EU.<sup>1</sup> Here, our focus is on Solvency II, an EU issue, but it must be noted that the EU itself is changing, with new countries coming in over time. So, Solvency II's impact goes beyond the current EU. But this doesn't matter. The EU is a poignant concept, whether or not it's fuzzy around the edges and still evolving.

The same can be said of Solvency II: fuzzy and evolving. Its final version remains under development. Only earlier this year did standard setters accept that such a basic assumption as the liability discount rate would include a credit-linked spread over SWAP rates, a change with major ramifications. This spread formula may change further after the next industry trial run, QIS5.<sup>2</sup> Portfolio allocations of insurance and pension entities will dramatically change in any event. (But I am getting ahead of myself.)

However, like an excellent wine, one's inability to definitively describe it does not diminish its taste. Nor its price. The expense estimates for implementing the new regulations

are commonly viewed as enormous. Still, I have never been one to turn down a good wine just because I couldn't pronounce it (though perhaps because I couldn't afford it). So too, I appreciate the new regulatory regime. (Nice bouquet.) And while I do understand managers' hesitations arising from risk of the fuzzy, the evolving and the expensive, the costs are likely overplayed, and the potential upside for capital savings has been largely ignored.

We should not view Solvency II as merely a regulatory exercise. It is an opportunity to manage (lower) capital requirements. This requires sharper management processes, and, as we get into later, a wider collection of asset classes. Companies that do this well will become the most competitive to attract both customers and capital.

### CONCEPTS AND CONSEQUENCES

So, what is Solvency II? International standard setters describe it as a principle-based system, a phrase which allows a good-natured jab at

#### FOOTNOTES

<sup>1</sup> Countries using the Euro: Andorra, Austria, Belgium, Cyprus, Finland, France, Germany, Greece, Ireland, Italy, Kosovo, Luxembourg, Malta, Monaco, Montenegro, The Netherlands, Portugal, San Marino, Slovakia, Slovenia, Spain, Vatican City.

Countries in the European Union (EU): Austria, Belgium, Bulgaria, Cyprus, The Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, The Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, The United Kingdom

<sup>2</sup> Quantum Impact Study (QIS) 5 is the first industry walk-through in which an illiquidity spread is allowed over SWAP rates.

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standards across the pond with their formulaic approach, historically replete with safe harbours here and there. In point of fact, FASB and the IASB have stated their intentions for financial reporting convergence, a development that will lead American standards to eventually look like Solvency II. In the spirit of sibling rivalry, some paint this convergence as “the United States catching up” while others say developments are occurring in parallel. All teasing aside, these developments shape all of our futures. Even though U.S. standards might change later, any companies holding EU subsidiaries will be impacted with the rest of Europe.

Solvency II’s lack of safe harbours, replaced by judgment and accountability, may lend an ill-defined air for some. Nothing could be farther from the truth. Solvency II’s principles are actually quite concrete.

#### PRINCIPLE 1: STANDARD OR INTERNAL MODEL

Solvency II accepts differences in company practices while attempting to standardize requirements. It specifies a standard model but allows an internal one (if it passes muster). A stronger reliance on professionalism replaces a reliance on formulae, and even the standard model requires considerable judgment.

The more sharply defined standard model almost certainly increases capital requirements (at least if asset portfolios are held constant). These increases appear far in excess of any implementation costs for an internal model. Even if a company cannot implement a full-blown internal model, customization is permitted for a company to focus on critical (read “capital-expensive”) assumptions and produce a “partial internal” model, at lower cost.

Some companies feel an internal model may be difficult to implement, probably impossible

is the feeling. They certainly have no lack of consultants whispering in their ear to say that the implementation represents a historically unprecedented onerous task. The advisors seem to be using scare tactics, playing up difficulties in implementation (no doubt hoping for more work). However, this stance may actually be backfiring, as many companies, especially the larger, more bureaucratic ones, opt for the standard model.

While the cost of developing models is a factor, reasons other than costs motivate the choice of a standard model. For starters, nobody is sure what form of internal model would be acceptable, so planning on one represents a roll of the dice; even CEIOPS’<sup>3</sup> “Pre-Application for Internal Model” comes with a disclaimer that it is not a pre-approval process, only an opportunity for feedback. Further strikes against an internal model might arise from the use test, which is the next principle.

#### PRINCIPLE 2: INTEGRATION OF AN INTERNAL MODEL INTO THE COMPANY: THE USE TEST

The internal model must be integrated into the business management. “Integrated” is stronger than merely “used,” but the regulations speak of a “Use Test”. Any parsing of company divisions in an internal model must match existing business structures, legal and reporting. However, “use” goes farther than that. The model must be integrated and used.

Management in general must become more conversant with the risk models and processes, and in particular must be sufficiently conversant in their limitations (the models’, that is).

#### FOOTNOTES

<sup>3</sup> Committee of European Insurance and Occupational Pensions Supervisors (CEIOPS) is the entity designing and implementing the Solvency II standards.

The regulatory requirement to establish this integration of the models into the company's day-to-day business no doubt leaves some executives wondering how much of their organizations must be overhauled. "Will this be on the final?" Indeed, do they need to pass some pop quizzes, or how exactly will it work? The standard model seems easier.

### PRINCIPLE 3: THE 1-IN-200 YEAR EVENT

Assets should be sufficient for the company to survive a 1-in-200 year event. While this paradigm does not come with specific formulae, it does represent precise criteria.

This goal standardizes the target for capital sufficiency, for either a standard or internal model. One-in-200 provides the single tool through which we can funnel every risk. Perhaps with this paradigm, executives who have many more tasks than risk management have a hope of coming to grips with models. Executives can leave the specifics of any particular risk (and correlation) analysis to the professionals, still understanding enough to identify critical issues and address them, while ensuring the professionals carry out all details day-to-day in the most state-of-the-art manner.

### SUB-PRINCIPLE 3A: CORRELATIONS (-LIKE) AGGREGATION OF INDIVIDUAL RISKS.

Each dimension of risk (e.g., mortality, equity levels, interest rates, currency rates, etc.) must be modelled. These individual risk dimensions are, in the standard model, blended via a correlation matrix approach. This employs a two-tiered approach, in which the top tier includes: Market risk, Default (of reinsurance counterparties), Life Insurance, Non-Life Insurance and Health. A lower tier breaks out further Life, Non-life and Market risks.

This proves to be a practical approach. A full model varying all risks simultaneously would be huge. And slow. Not everybody's cup of tea. Modelling each risk separately and appealing to the correlation approach avoids exponential model growth. Further, it at least gets the first order of interdependency into the calculation. This practicality comes at a theoretical price. Clearly, any relationship involving more than two variables is lost. Also, while correlation provides a useful statistic for some distributions, it likely is poor for non-standard (e.g., thick-tailed) distributions. Besides, the paradigm of a 1-in-200 year event is a measure of tail events, like Value-at-Risk. Aggregation using correlation formulas is not theoretically justified. In fact, guidance from CEIOPS<sup>4</sup> recommends using the correlation parameter as a free variable to calibrate 99.5%-VaR estimates for sums of variables, a method on tenuous theoretical ground.

Practicality may trump all of these. A little theoretical license saves a lot of computing power. Besides, were those higher correlations (copulae) really calibrated and scenario tested to truly be adding value? (If you answered yes, make an internal model.) Furthermore, regulatory correlations need not be set as the "best estimate" from history. (The standard formula correlations are notably high.) Setting correlations to be higher certainly makes sense within the 1-in-200 paradigm, but it is clear ahead of time that increasing the correlations increases the final capital requirement; as an expedient, correlations are not shocked separately, rather they are simply made higher in the standard model.

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<sup>4</sup> CP 74, Point 3.15

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We should admire the regulators' goals, whether or not they have gotten it totally right yet. They provide a workable model as a standard but it is likely to be capital expensive. This suggests they are encouraging insurers to customise to internal models, but if this is so, why are the requirements for this so opaque? Like I said, it is a work in progress.

#### PRINCIPLE 4: MARKET VALUES

Some feel this is the principle that started it all. While market-valuing assets proves less problematic, the market valuation of liabilities has been debated since at least the early 1990s.

The liability discount rate is crucial, which has an obvious leveraged effect. The industry has been quite clear that using a governmental discount rate would increase reserves unreasonably, potentially wiping out current capital. In February 2010, CEIOPS accepted the CRO Forum's view that an "illiquidity"<sup>5</sup> spread (over SWAPS) should be used when discounting liabilities.

This represents an enormous development, a decisive convergence between regulators and industry. In the first place, it coincides with most ALM techniques, facilitating the validation for the use test. More importantly, the industry avoids (or at least mitigates) a huge hit to surplus that would have arisen by using governmental rates.

Companies who disagree often do so because this development does not go far enough. The illiquidity premium currently comes in below half the credit spread and, in turn, only half of this gets used in the liability discount rate (for most liabilities). Accordingly, when the "spread shock" is performed, only a quarter of the spread shock used on the credit assets applies to the liabilities. So, for insurers that have exactly 25 percent credits in the portfolio (duration considerations aside) there would be no spread charge for capital. Anything more (or less) would incur an onerous capital charge, perhaps more than doubling capital requirements.<sup>6</sup>

The CFO/CRO Forums jointly appealed this May for more illiquidity spread to be allowed for the liabilities, but even if their pleas are heard, the neutral credit position would only move from 25 percent to 37.5 percent.

#### ASSET PORTFOLIOS MUST CHANGE

Theoretically, the change might seem easy and not require anything new: credits could be reduced to the neutral position on a duration

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<sup>5</sup> Some say "liquidity."

<sup>6</sup> For example, with spread duration of 5, and a shock of 200bp and a portfolio of 90% credits, this single stress test would have a capital charge of  $(90\% - 25\%) \times 5 \times 200\text{bp} = 7.5\%$  of assets.

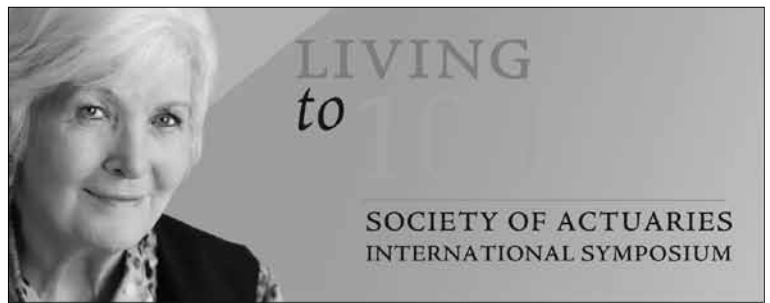
weighted basis and governments used to adjust non-credit duration.

Well, no. In Europe, governments trade at a spread to swap (and to each other). In a 1-in-200 paradigm, this spread must be tested. This would be akin to testing the spreads on state or municipal bonds in the United States. (This has not been said yet, but the writing is on the wall, in Greek. To see, do an internet search for “PIIGS.”) Interest rate derivatives can be used to manage non-credit duration. Still, attractive alternative assets are needed, assets unrelated to spreads. They should also have little relationship to equity and property risk. For example, intellectual property rights could be a new class unrelated to traditional investments. What else?

As you can see, while Solvency II is evolving, it's not fuzzy. Its principles are clear, relying on professionalism. Also, it is clear that some practise will change, and employing new assets tops the list. Solvency II represents more than a regulatory exercise. On offer are capital requirement reductions and increased ROE<sup>7</sup>, and will those rising to the occasion will become more competitive? In any event, actuaries have a golden opportunity to lead and shine. So, update your passport. □

#### FOOTNOTES

<sup>7</sup> This competitive motivation could be tempered if country regulators decide to maintain separate (additional) requirements that amount to a minimum amount of capital. For example, in the United Kingdom the author knows of no decision as to whether or not the Pillar 1 (more formulaic) capital requirements will be maintained when Solvency II comes into play. It is foreseen that Solvency II will replace the U.K.'s Pillar 2, also called the Individual Capital Assessment (ICA). Watch for what local EU countries say on this issue. Eventually, however, it is expected that only the CEIOPS would remain, without a minimum standard from the individual countries.



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