



Private equity allocations under Solvency II

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Passion for Private Markets

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Starting in 2012, European insurers will be required to comply with Solvency II, a new European Union regulatory framework with solvency capital rules applicable to insurance companies. Under these rules Insurers will have to calculate their solvency capital requirement either using a standard model or their own internal models. Based on the current proposal, investments in private equity¹ would be subject to a stress factor of 55% under the standard model². Analyzing the impact of private equity on an insurer's capital requirement suggests however, that even under the standard model, private equity is accretive to an insurer's portfolio both within the overall equity allocation and within the overall allocation. The diversification benefits leave the capital requirement largely unchanged as long as the allocation to private equity is not higher than 35% of the overall allocation to equities.

The relatively high capital requirement for private equity will incentivize insurance companies that aim to diversify their balance sheets to build internal models. Particularly for a specialized asset class such as private equity, asset managers like Partners Group have an important role in increasing their clients' understanding of the available private equity data and supporting the development of the relevant components of internal models. Based on the prevailing data, Partners Group expects the capital requirement for private equity under internal models to be significantly lower compared to the coarse standard approach. In our opinion, data suggests a stress factor for private equity in the range of 25-35%.

Insurers will analyze structural solutions to help them tailoring the capital requirements. With Solvency II emphasizing substance over form, many of the "plain-vanilla" solutions are unlikely to be able to reduce capital requirements. In order for a structuring solution to effectively reduce capital requirements, it must entail a change of the risk-return profile of the investments by way of transferring the risk from the insurer to a third party.

¹ More generally, the category is expected to contain all private markets investments including private equity, private real estate, private infrastructure and private debt.

² Parameters are still subject to change: all parameters used for calculating stress factors are taken from CEIOPS' advice for Level 2 Implementing Measures.



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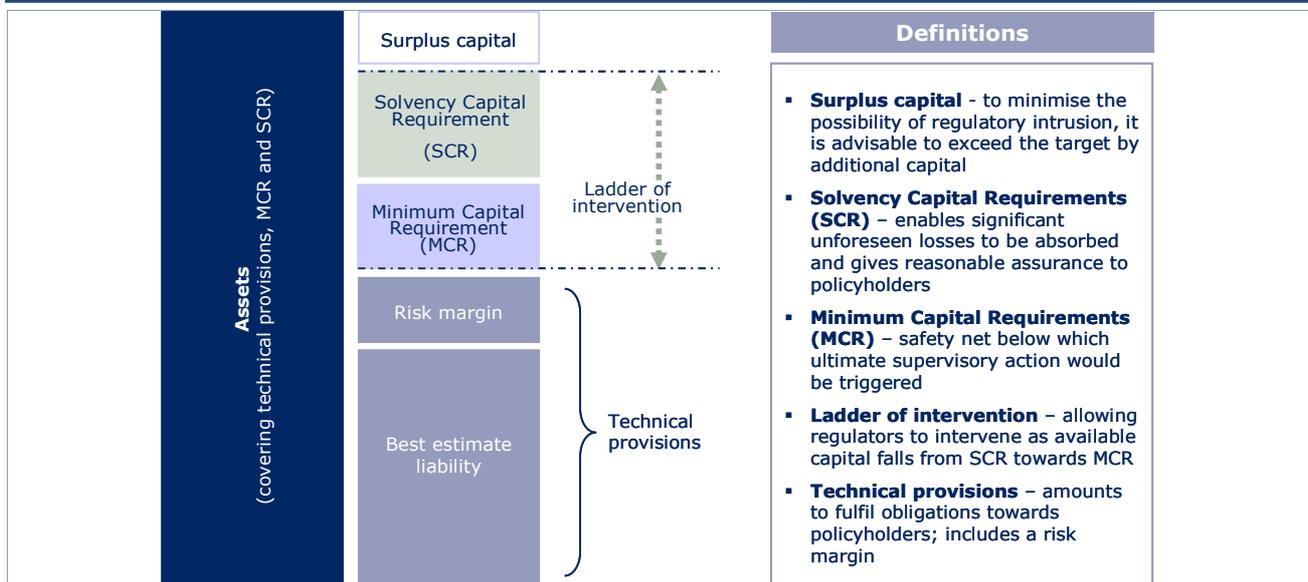
REGULATORY BACKGROUND

Solvency II introduces a new solvency capital and supervision framework for insurers and reinsurers in the European Union. More specifically, it will need to provide a common regulatory approach to calculating and setting the levels of capital that insurers put aside to pay potential future claims.

The principal aim of Solvency II is to ensure that insurance undertakings are financially sound and can withstand adverse events. Solvency II should also help to speed up the arrival of a true single market for insurance services. In the wake of the recent financial turmoil, the stability of the financial system has become another important objective of the new regulation. Solvency II is built on three pillars: capital requirements (pillar I), governance requirements (pillar II) and disclosure and regulatory reporting requirement (pillar III).

Capital requirements will be calculated according to economic assessments of the risks (see Exhibit 1). The capital requirements consist mainly of two thresholds. The first is the Solvency Capital Requirement ("SCR"); supervisory action will be triggered (based on the governance rules defined under pillar II) if an insurer's resources fall below this level. The second is the Minimum Capital Requirement. It will define the level at which the supervisory authority can invoke severe measures, including closure of the company to new business. The SCR – calculated either with a relatively simple standard approach or an internal model – will allow a company to withstand adverse circumstances, even severe ones.

Exhibit 1: Overview of Solvency II capital requirements



The current solvency regime in the European Union dates back to the 1970s. The Solvency I regime is a relatively simplistic yet robust approach to the supervision of insurers' capital. The scope of Solvency I is quite limited as it mainly relies on minimum standards. Solvency II, on the other hand, aims to create a risk-based supervision reflecting the trend in international best practice which in recent years has leaned towards the risk-based regulatory approach. Other countries with significant insurance industries, notably Australia and Switzerland, have already switched to risk-based regimes, while insurance supervisors in some other major

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insurance markets, such as Japan and Bermuda, have indicated that they will do so also. Solvency II is furthermore intended to achieve a high degree of uniformity in regulatory standards across Europe and will require insurers to consider a wider range of risks when calculating capital requirements, such as asset, credit, operational and group risks.

The Solvency II Directive was adopted by the European Council on 10 November 2009. The Committee of European Insurance and Occupational Pensions Supervisors ("CEIOPS") has recently delivered advice on the various parameters for the calculation of solvency capital requirements. These parameters will further be tested from August to October 2010 in a so-called quantitative impact study (QIS 5). The European Commission aims to have the new Solvency II system in operation by 31 October 2012.

SOLVENCY REQUIREMENTS FOR MARKET RISKS

While the timeline for the implementation of Solvency II is approaching quickly there are as mentioned still ongoing discussions on the parameters that will be applied for the different modules and sub-modules³.

The overriding principle for determining the capital requirements across modules under Solvency II is the calculation of a 99.5% one-year Value-at-Risk (VaR). The Market Risk factor is calculated based on stress factors for Interest Rate Risk, Equity Risk, Property Risk, Spread Risk, Currency Risk and Concentration Risk, of which Interest Rate, Equity and Spread Risks are most significant. Before reducing for diversification effects, these three categories comprise 70% (non-life insurer) to over 80% of the overall Market Risk Charge⁴. Private equity investments are included in the category Other Equities in the Equity Risk sub-module. The category Other Equities itself is a conglomerate of various asset classes (including inter alia private equity, commodities, hedge funds and emerging markets) with very different characteristics. Whereas Global Equities are assigned a stress factor of 45% in the standard model (subject to symmetric dampener), Other Equities are assigned a stress factor of 55%⁵, a relatively modest increase compared to the stress factor for Global Equities. In comparison, the stress factor for a 5 year corporate bond with a AA rating⁶ would currently yield an Interest Rate charge of around 5%⁷ (which would increase to around 8% assuming 5 year interest rates were to increase to 4%) and a Spread Risk charge of around 7% corresponding to a total charge of around 12%, significantly lower than the charges for Equity Risk.

³ Parameters are taken from CEIOPS' advice for Level 2 Implementing Measures. CEIOPS' Advice for Level 2 implementing Measures on Solvency II: SCR Standard Formula Article 111b Calibration of Market Risk Module, CEIOPS' Advice for Level 2 Implementing Measures on Solvency II: Article 111 and 304 - Equity risk sub-module

⁴ CEIOPS' Report on its fourth Quantitative Impact Study (QIS4) for Solvency II: November 2008

⁵ In the specifications for QIS 5, insurers are asked to use slightly different parameters, e.g. a threshold of 49% is proposed for Other Equities.

⁶ Corporate bond investments of European insurance companies are typically of high quality (87% AAA to A) and have an average duration of 4-5 years. Information on corporate bond investments of European insurance companies – CEIOPS' Advice for Level 2 Implementing Measures on Solvency II: SCR Standard Formula Article 111b Calibration of Market Risk module

⁷ For the sake of illustration, it is assumed that the insurer is sensitive to an upward shift of the yield curve across the study.



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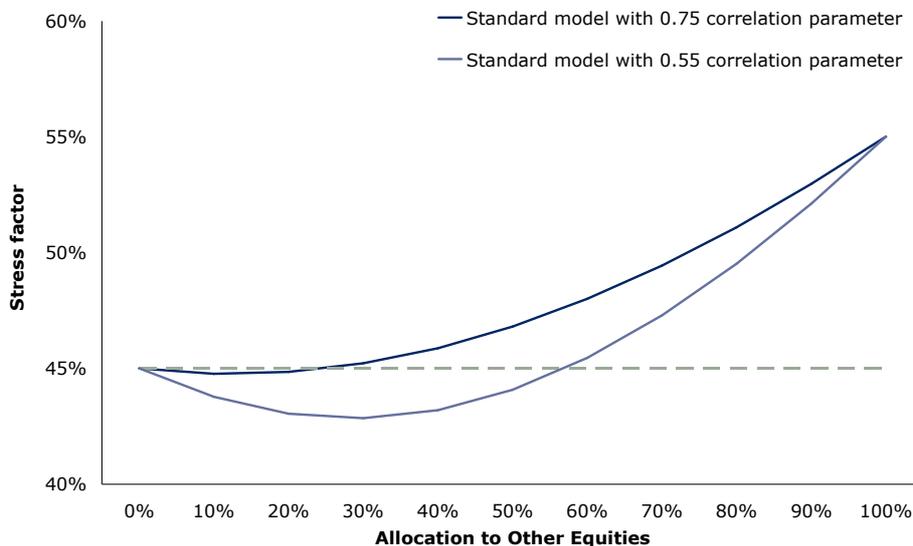
PRIVATE EQUITY STRESS FACTORS UNDER THE STANDARD MODEL

After determining its overall allocation to equities, an insurer that uses the standard model will further determine how much of its equity allocation will be used for public equities and how much will be used for other assets such as private equity. While the capital charge for Other Equities is 10% higher than the capital charge for Global Equities, a correlation coefficient of 0.75 between the two categories is to be applied, which allows for certain diversification benefits. The proposed correlation leaves the capital charge for Equities at around 45% as long as the allocation to Other Equities is not higher than 35% (see Exhibit 2). For example, for a 50% allocation to private equity within the overall equities allocation, the capital charge only increases from 45% to around 47%. An insurer will thus not face a higher capital charge for allocating to the category Other Equities so long as the proportion to Other Equities does not exceed around 40% of the overall equity allocation.

While this analysis focuses on the suitability of the proposed stress factor, related study⁸ has analyzed the suitability of the proposed correlation factor. There is no doubt that private and public equities are correlated; the aforementioned study concludes however that the correlation between public and private equity should rather be in the range of 0.45-0.55 for the buyout segment. Exhibit 2 shows that the diversification benefits become even more apparent even if a correlation of 55% is applied with positive effects on the combined stress factor up to a private equity allocation of around 60%.

Exhibit 2: Equity Risk stress factor

Equity Risk stress factor as a function of the allocation to Other Equities with 0.75 and 0.55 as correlation parameter



The majority of investments on an insurer's balance sheet are allocated to fixed income investments that are presumed to provide a natural hedge against the typical liabilities of an insurer. However, these investments only offer a tight spread over the requested yield on the

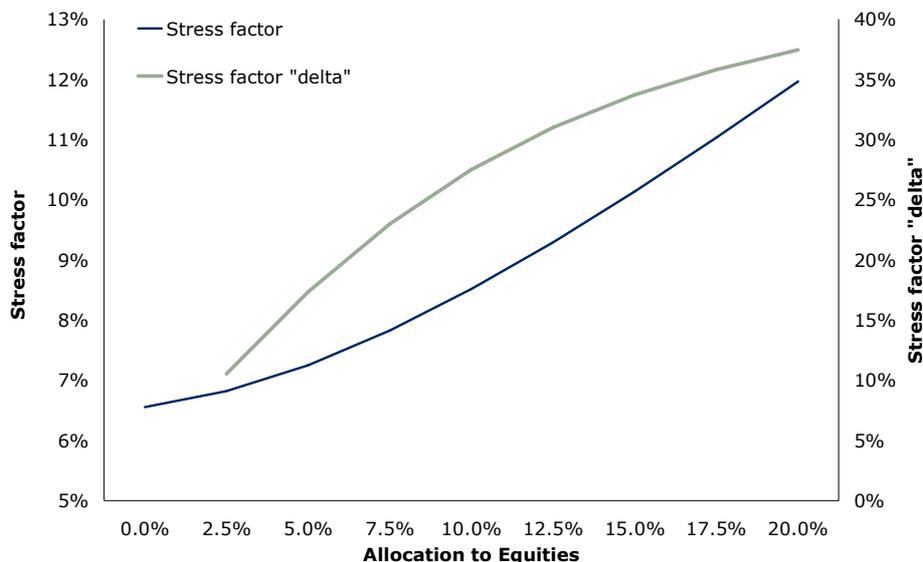
⁸ On the Suitability of the Calibration of Private Equity Risk in the Solvency II Standard Formula: An EDHEC Financial Analysis and Accounting Research Centre Publication, April 2010

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insurer's liabilities. This is even more the case in the current environment with a low absolute yield across the yield curve. Insurance companies will thus seek to increase their return from investments by allocating to higher yielding asset classes. The obvious additional benefit is the increased diversification of the portfolio. Concentrating on a portfolio of investments with exposure to the categories Interest Rate Risk, Equity Risk and Spread Risk⁹, one observes an increase of the stress factor for Market Risk from around 7% to 12% if the insurer increases its allocation to Equities from 0% to 20% (see Exhibit 3). For each additional Euro allocated to Equities, the additional capital requirement increases by 30-60 cents (the stress factor's "delta") for an allocation below 10%. Once the allocation to Equities exceeds 10%, the incremental capital requirement increases by 60-80 cents.

Exhibit 3: Combined Market Risk stress factor and corresponding increase rate

Combined Market Risk stress factor and the corresponding increase rate (delta) as a function of the allocation to Equities (assuming a 50/50 split in terms of Global Equities versus Other Equities).



Does it still make sense for an insurer to consider an allocation to equities given the significantly higher capital requirements under the standard model? Insurance companies will need to consider the following questions: How much additional capital is needed in order to allocate to asset classes with higher capital requirements? What are the liquidity requirements and how do they fit into the company's asset liability schedule? What is the minimum excess return required in order to break even?

Based on data collected in the QIS 4 study, the equity on insurance companies' balance sheets varies widely across European countries. Companies have equity ratios as low as 5-6% (in Germany and France) to around 10% (in the U.K.) to over 20% in some Eastern European countries. While in general insurance companies exhibit healthy surplus capital with respect to solvency ratios, it is anticipated that they will still aim to increase their equity ratios if they were to allocate a higher portion of their investments to Equities (including private equity) in

⁹ Based on the market risk composition in QIS 4 and the information on the allocation across different rating buckets, it has been assumed that one third of the fixed income allocation is subject to a (blended) Spread Risk.



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order to leave their surplus capital unchanged. Taking for example an insurer with a 10% level of equity — for each additional 1 Euro allocated to private equity, the insurer will most likely have to increase its equity by 20-80 cents based on the analysis shown in Exhibit 3.

Solvency II does not focus on liquidity requirements. For an insurer in order to meet the solvency capital provisions, it is however important to analyze liquidity requirements stemming from its private equity commitments. In a stress scenario, the surplus capital will most likely decrease. Capital calls from undrawn private equity commitments will further increase the required solvency capital, while at the same time reducing the surplus capital.

The break-even excess return will heavily depend on the actual key figures and structure of the individual insurer. Nevertheless, private equity may offer an attractive excess return for insurance companies. To illustrate, as of December 31, 2009, the 20-year return for a global private equity portfolio stands at around 10% p.a.¹⁰ This compares favourably to the performance of the MSCI World over the same time period, which stands at around 6% p.a.

THE STANDARD STRESS FACTOR FOR PRIVATE EQUITY IS NOT ADEQUATE

In order to determine the relevant parameters for the various modules CEIOPS has analyzed historical data to estimate appropriate stress factors. The LPX 50, an index for listed private equity investments, was used to calibrate the stress factor for private equity, resulting in a proposed stress factor of nearly 70%. Partners Group has voiced its objections on the suitability of the LPX 50 in the consultation process. In our opinion, several characteristics of the LPX 50 make it inappropriate.

First, the composition of the LPX 50 is not representative of a typical institutional private equity portfolio. Compared to the global private equity market, the LPX 50 is heavily overweighed to European (and more specifically, UK) private equity investments. The U.S. is predominantly represented through BDCs¹¹ which again do not reflect the characteristics of a typical institutional private equity portfolio. Moreover, 20% of the index is comprised of asset managers such as Partners Group which exhibit fundamentally different return drivers compared to a typical private equity portfolio. Last but not least, as noted by the cited article from EDHEC, an index with 50 constituents has a higher idiosyncratic risk than the diversified portfolio of a large institutional investor.

Second, the returns on the LPX 50 are subject to significant volatility from premiums/discounts to the prevailing NAV (see Exhibit 4). The premium/discount is highly dependent on market sentiment and does not reflect the development of the underlying portfolios nor does it reflect the movements of NAVs of an insurer's portfolio. The LPX 50 shows a very high correlation to financial sector equities, which again does not reflect the nature of an (unlisted) private equity portfolio. All these factors allow for the conclusion that the LPX 50 should not be used to calibrate the private equity stress factor.

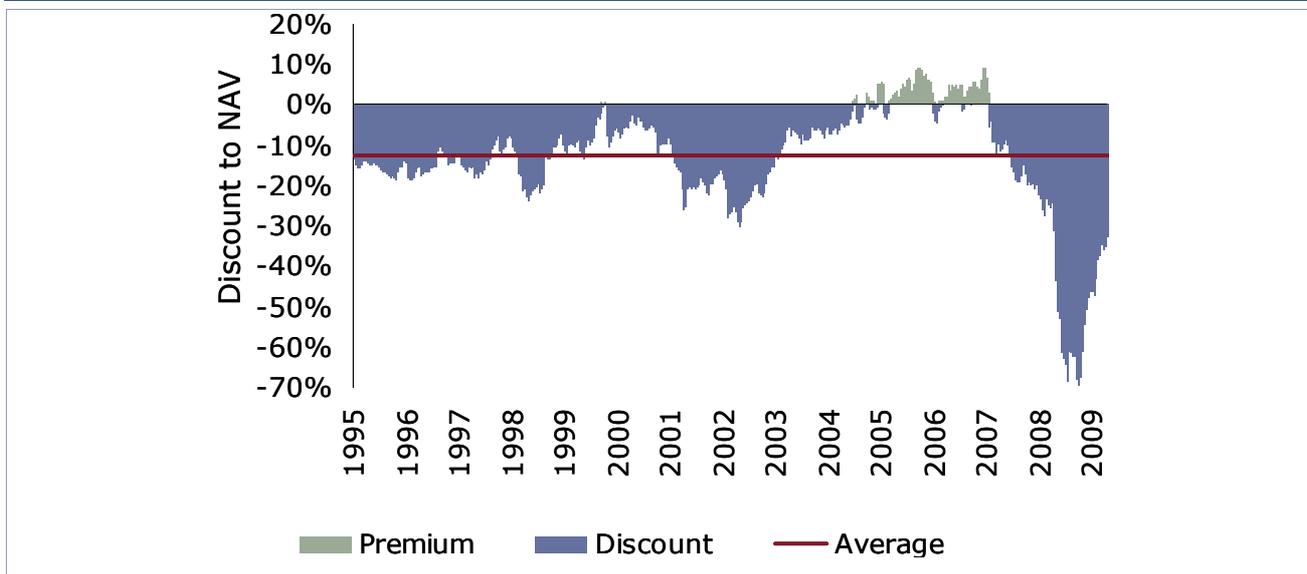
¹⁰ Thomson Reuters: Investment Horizon Performance report – pooled IRR as of 31.12.2009.

¹¹ Business Development Company: a special U.S. structure. BDCs in the LPX 50 are typically invested in debt securities of private equity transactions and apply a significant leverage.



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Exhibit 4: Premium/discount of UK listed private equity vehicles (excl. 3i)



Besides the inadequacy of using the LPX 50, there are other sources of evidence that support a considerably lower stress factor for private equity investments:

- *One-year horizon returns.* Solvency II requires for a one-year VaR. One-year private equity returns over the time period June 2008 to June 2009 from private equity data provided by Thomson Reuters and Cambridge Associates show a decline of valuations of 20-25%. This time period corresponds to the horizon during which private equity valuations declined in the recent crisis (or the maximum drawdown). We do not observe higher drawdowns for diversified portfolios in any other one-year periods in the private equity return history (which admittedly only spans 25-30 years).
- *Risk-return figures of private equity indices.* The data provided by Thomson Reuters and Cambridge Associates show that, depending on the market segment, quarterly (unlisted) private equity indices exhibit volatilities of 8-12% p.a. This volatility is considerably lower than the volatility of public market indices. One might argue that these data series are subject to auto-correlation, which dampens volatilities and correlations. Even if this auto-correlation¹² is corrected for, as is proposed by CEIOPS in the case of real estate indices, these volatilities only increase to levels similar to that of public market indices and would indicate at most a similar stress factor.
- *Evidence from large private equity investors:* there are various observations from large institutional investors such as public pension funds and endowments. For the one-year time period from June 2008 to June 2009, Yale's private equity holdings in leveraged buyouts and venture capital posted a 24.3% loss; Harvard's private equity portfolio reported a 31.6% loss, Calstrs reported for its private equity portfolio a 35.5% loss and Calpers reported a decline of their private equity program by 25.9%. It is important to note that none of these investors reported a loss in excess of 35% in one of the worst crises in the last century.

¹² Fisher, J.D., Geltner, D. & Webb, R.B. (1994), Value indices of commercial real estate: a comparison of index construction methods, *Journal of Real Estate Finance and Economics*, 9, 137-164, Fisher, J.D., Geltner, D. (2001), De-Lagging the NCREIF Index: Transaction Prices and Reverse-Engineering



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Private equity markets do not have the same long data history as public equity markets and data is only available on a quarterly basis. This scarcity of data limits the explanatory power of a statistical analysis, especially in the light of the requested 99.5% confidence level (i.e. a once-in-200-years event). The above data suggests however a stress factor for private equity of 25-35% depending on whether a symmetric dampener is applied as in the case of a public markets portfolio; this figure is less than half the stress factor suggested by the LPX 50.

CHALLENGES FOR INTERNAL MODELS

Given the "conglomerate" nature of the Other Equities sub-module, a significant (downward) adjustment of the stress factor for Other Equities seems unlikely. In order to capture the potential for reduced capital requirements an insurer will most likely need to consider using a partial or full internal model¹³.

In CEIOP's report on QIS 4, 63% of the respondents were considering building partial or full internal models. Benefits of internal models were cited to include better risk management, governance and a reduction of the required solvency capital. Indeed, the median reduction in the required solvency capital compared to the standard model was 20%.

Insurance companies will face various challenges when assessing internal models for their private equity allocations. Proving the quality of the statistical input data will be a key requirement for obtaining regulatory approval. It will be important for an insurer to thoroughly understand the characteristics of available data in order to convince the regulator that it has the necessary quality and depth. Depending on their experience with the asset class and on the size and diversification parameters of their portfolios, insurers may use their own data over time or adapt industry data in order to mirror the characteristics of their portfolios. We are however convinced that the available data is conclusive that the required solvency capital should be significantly lower than proposed under the standard model¹⁴.

HOW TO PREPARE FOR SOLVENCY II

For the purpose of determining their solvency capital requirements insurers will have to assess whether the use of the standard model or an internal model would better suit their specific needs. Especially for a specialized asset class such as private equity, insurers will face the challenge to access and interpret available data appropriately. Asset managers such as Partners Group that have a longstanding industry experience will be challenged to gather and provide their clients with the necessary input data which is a prerequisite for an insurer to successfully build its own internal model¹⁵.

While most insurers are expected to have sufficient solvency capital, the new rules might either cause insurers with low surplus capital to consider reducing their asset allocations to private equity investments or potentially limit the ability of insurers to further increase their allocation to private equity. Structuring solutions which are tailored to the particular needs of the investor can effectively address these challenges.

¹³ The regulator will however have a close look to prevent insurers from cherry picking on partial internal models.

¹⁴ As mentioned before, in addition to the benefits of a lower stress factor for private equity investments, correlation characteristics may well turn out to be more favourably than proposed under the standard model.

¹⁵ Partners Group has assisted clients in the U.S., Japan and Switzerland in the procurement and evaluation of input data. For instance in Switzerland, Partners Group has supported several clients to obtain regulatory approval for internal models for the purposes of the Swiss Solvency Test, which is based on similar principles as Solvency II.



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The Solvency II framework consists of far-reaching rules adopting a holistic approach. In particular, under Solvency II, the risks of assets must be considered without regard for their legal form. In order for a structuring solution to effectively reduce solvency capital requirements, the solution must entail a change of the risk/return profile of the investments by way of transferring the risk from the original investor to a third party. A simple repackaging of assets will likely not have any impact from a Solvency II perspective. As a result, many commonly used structures, such as fund-linked notes or capital protected instruments using zero-bonds, would not be effective.

Partners Group has developed customized solutions which are anticipated to address and meet the particular requirements of Solvency II. Depending on the specific needs of the investor, this could be achieved through various forms of securitization of private equity assets. Possible solutions include on the one hand collateralised fund obligations, where the private equity portfolio would be transferred to a special purpose vehicle issuing different tranches of rated bonds (senior and subordinated), and on the other hand a closed-end investment company issuing bonds which are capital protected by an insurance company.



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