



# **Solvency II & Absolute Return Investing**

**Standard Life**  
Investments

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# Introduction

Solvency II is the latest European Union Directive designed to harmonise insurance regulation across member states. It follows on from Solvency I's focus on prudential standards for insurers that were designed to facilitate a single market in insurance services.

Solvency II largely relates to the amount of capital required to be held by insurance firms to reduce insolvency risk and boost consumer protection. It finally comes into force on 1 January 2016. The Directive introduces a principle-based, risk-sensitive regulatory system for assessing solvency capital needs, and should ensure better alignment of risk and capital in the insurance industry. One feature of particular note is its look-through principle, which moves on from previous approximations for calculating the solvency capital that should back asset funds, allowing detailed analysis of the actual individual investments held by a fund and their true risk characteristics. In this paper, we examine the important implications this has for the calculation of solvency capital needs. We highlight, through the results of our detailed proprietary analysis, how the Directive may change the way insurers view various asset classes. We also demonstrate how insurers might be able to generate more efficient capital consumption, particularly when applying the approach to absolute return strategies.

## Craig Turnbull

Investment Director – Insurance Solutions

## Insurance Solutions Team

The insurance sector is very important to Standard Life Investments. We manage insurance assets worth £146 billion, as at 31 December 2014, including £91 billion for our parent company Standard Life. We also manage £55 billion for a wide range of insurance clients across the UK, US, Europe and Asia.

Our dedicated Insurance Solutions Team manages relationships with both our internal and external insurance clients with a view to developing innovative solutions that enhance their risk-return profile. The team comprises three highly experienced insurance actuaries with detailed knowledge of regulation, risk and actuarial matters, and provide clients with extensive guidance and industry insight. Alongside the detailed modelling work undertaken for this paper, the team has developed a range of other capabilities to serve insurance asset management clients' needs in a Solvency II world.



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# Solvency II and its implications

## Solvency II's principle-based, risk-sensitive characteristics will enable insurers to obtain capital relief for more efficient risk-taking.

The Directive's look-through principle now provides insurers with exactly that capability in their asset fund holdings, and is a development with important implications for future asset allocation practice. The principle also means that far greater analytical rigour will be required when assessing risk and solvency capital requirements in future. Ultimately, look-through should ensure better alignment of capital management with actual risk adopted and greater capital allocation efficiency.

At Standard Life Investments, we believe the new principles could introduce a greater role for absolute return funds in insurers' portfolios. The asset class's true risk diversification characteristics were largely unrewarded by previous risk capital rules. However, Solvency II can facilitate more realistic recognition of risk diversification within absolute return funds, as well as between those funds and other investments. Where they have been constructed using effective diversification techniques, absolute return funds can achieve their returns with lower risk than the asset classes in which insurers typically invest. In addition, absolute return products can generate returns that enhance diversification when combined with those asset classes, reducing overall asset portfolio risk still further.

Consequently, absolute return vehicles could be highly capital-efficient alternatives, offering insurers an opportunity to improve the trade-off between expected returns and solvency capital requirements.

### Absolute return investing - an overview

At their simplest, absolute return strategies seek to generate attractive returns whatever the market environment. They therefore differ from the relative return approach of many traditional mutual funds, which seek to outperform benchmarks or peer groups.

In doing so, they invariably adopt a multi-asset approach, seeking to exploit the profit potential of a variety of different instruments, including bonds, equities, derivatives, swaps, options, futures and commodities. This is done through the use of numerous different techniques, including short-selling, leverage and arbitrage, while risk management is also a critical part of the process.

The attributes of absolute return funds and their inherent flexibility, which we summarise below, ultimately mean they can be used as part of an overall investment solution to generate better risk-adjusted returns over the long term.

### Unconstrained by index benchmarks

Multi-asset funds are invariably constructed without reference to benchmark indices, unlocking a far larger and more diverse pool of opportunities than is available to traditional funds. Importantly, it leaves the manager free to implement his/her best investment ideas with maximum conviction in order to meet investor requirements.

As well as the more familiar asset classes – equities, bonds and real estate – absolute return vehicles can facilitate the use of more specific strategies. For instance, profits can be sought from the manager's views on interest rate movements, currency exchange rates and inflation expectations among others.

### Risk-based portfolio management, construction and control

The extent and diversity of the absolute return investment universe significantly enhances the scope to manage risk. Managers can select a wide range of positions to construct

portfolios of complementary strategies, with no individual risk or group of related exposures dominating. At Standard Life Investments, our absolute return funds are constructed to generate exposure to a wide array of diversified investment themes while managing risk within defined tolerances.

### Longer-term investment horizon

Short-term market behaviour can be very unpredictable, a feature attributable to the short investment timeframes of many participants. As a consequence, markets often deviate from their established long-term norms, especially during turbulent conditions.

This can be a particularly fertile hunting ground for multi-asset managers seeking to identify and exploit such anomalies over the long term. The greater resilience of this type of multi-asset approach can allow the manager to ride out periodic market storms and concentrate on longer-term opportunities unavailable to conventional portfolios.

#### A multi-asset approach can have the following advantages:

- ▶ unconstrained by index benchmarks, unlocking a far larger and more diverse pool of return opportunities
- ▶ takes advantage of strategies outside normal market exposure, to seek enhanced returns
- ▶ ability to withstand short-term storms, to focus on long-term opportunities and
- ▶ genuine diversification of risk, aimed at providing a more predictable investment journey.

# Quantifying the impact

**At Standard Life Investments, we believe that Solvency II's look-through principle and the greater granularity it allows in terms of incorporating actual portfolio risk attributes into solvency capital assessments could mean more appropriate treatment of absolute returns funds than has previously been the case.**

This will require much greater rigour and more detailed analysis when assessing the true underlying risk of the assets held in future but, in turn, makes these vehicles a potentially attractive additional asset class to complement other options in insurers' asset portfolios.

To test this view and to quantify the potential benefits for insurers, we have conducted our own detailed studies of the Directive's impact on solvency capital when introducing absolute return funds into the investment mix. In order to do so, we have worked closely with both MSCI RiskMetrics and Moody's Analytics to develop our Solvency II modelling capability.

RiskMetrics software has been used to calculate the Standard Formula Solvency Capital Requirement (SCR) for a range of our funds using the full line-by-line look-through approach. Moody's Analytics has also reviewed the RiskMetrics Standard Formula module and its application to Standard Life Investments funds. Then, Internal Model SCR analysis was developed by augmenting the Standard Formula

calculations with models and assumptions that are representative of the typical Internal Model assumptions used by major insurance companies. The Internal Model framework is unfettered by the simplifications of the Standard Formula and can be viewed as a more realistic economic capital analysis.

Using this capability, we have conducted detailed analysis of the risk-return effects of introducing absolute return vehicles under the Solvency II regime. For illustrative purposes, we use the examples of the Standard Life Investments Global Absolute Return Strategies (GARS) and Absolute Return Global Bond Strategies (ARGBS) funds. We conducted our analysis in two stages:

- ▶ we look at the Solvency Capital Requirement on an asset-only basis under both Standard Formula and Internal Model approaches, and
- ▶ introduce illustrative liability profiles which can illustrate the SCR impact at an insurance balance sheet level.

## Asset-only case studies

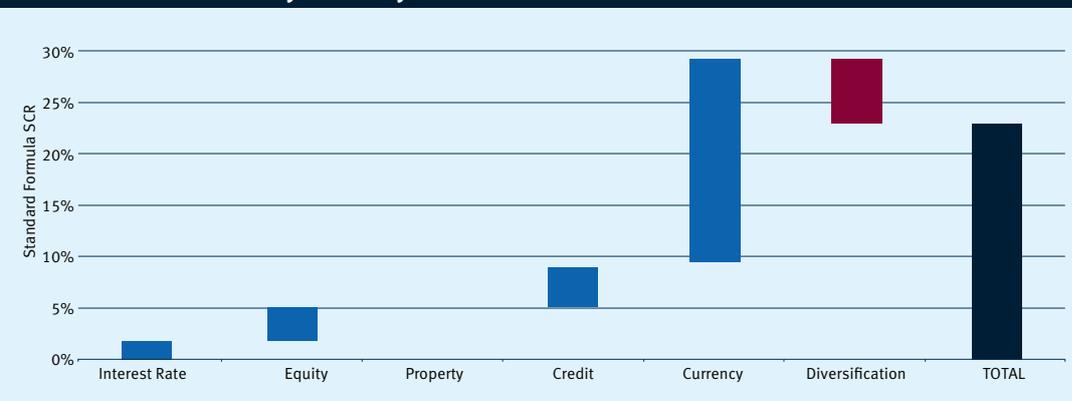
We first consider the Solvency II SCR treatment of two Standard Life Investments absolute return vehicles, GARS and ARGBS, on a stand-alone basis. These results have been produced on a full look-through basis for each fund as at end-March 2015. Charts 1 and 2 show the Standard Formula SCR and Internal Model SCR results respectively for the GARS fund.

The analysis shows the Standard Formula SCR is estimated at 23% and the Internal Model SCR is estimated at 15%. The GARS fund has a performance objective of cash +500 basis points (bps), which is comparable to the long-term historical average return of major equity markets. Under the Solvency II Standard Formula, a typical equity fund would generate an SCR of 39-49% (before symmetric adjustment), and similar results would be expected from an Internal Model. GARS therefore provides a

much more capital-efficient route to this level of expected returns. Look-through allows the efficient portfolio risk construction techniques of GARS to be recognised, particularly when using the Internal Model basis.

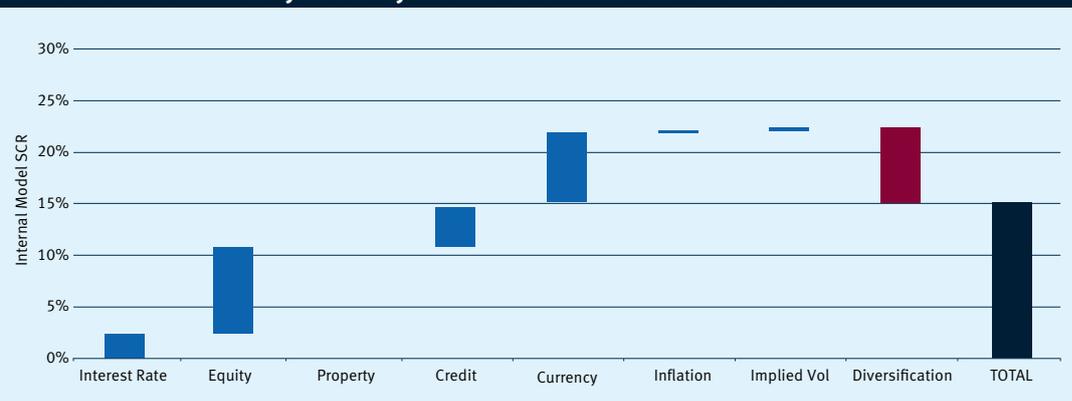
What drives the difference between Standard Formula and Internal Model SCR results for the GARS fund? A comparison of Chart 1 and 2 highlights two significant differences in the Standard Formula and Internal Model SCR treatments. First, the equity risk contribution generated by the Standard Formula is significantly smaller than produced by the Internal Model. This arises because the Standard Formula assumes that all equity indices are perfectly correlated. As a result, the fund's short equity positions provide an effective offset in the equities down stress. The Internal Model approach allows for realistic de-correlation across all the fund's equity exposures. This results in an overall increase in the equity risk contribution.

**Chart 1: GARS asset-only Solvency II treatment – Standard Formula SCR**



Source: Standard Life Investments, 31 March 2015

**Chart 2: GARS asset-only Solvency II treatment – Internal Model SCR**



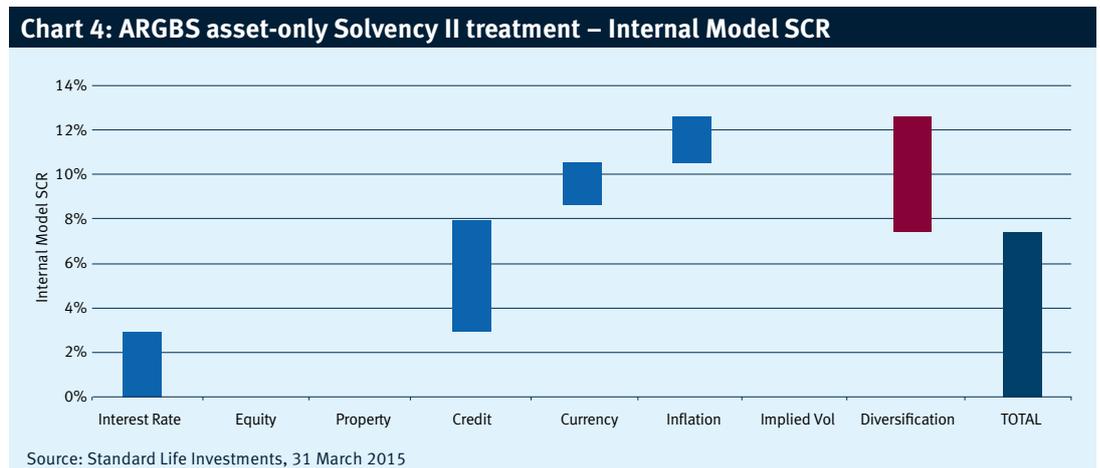
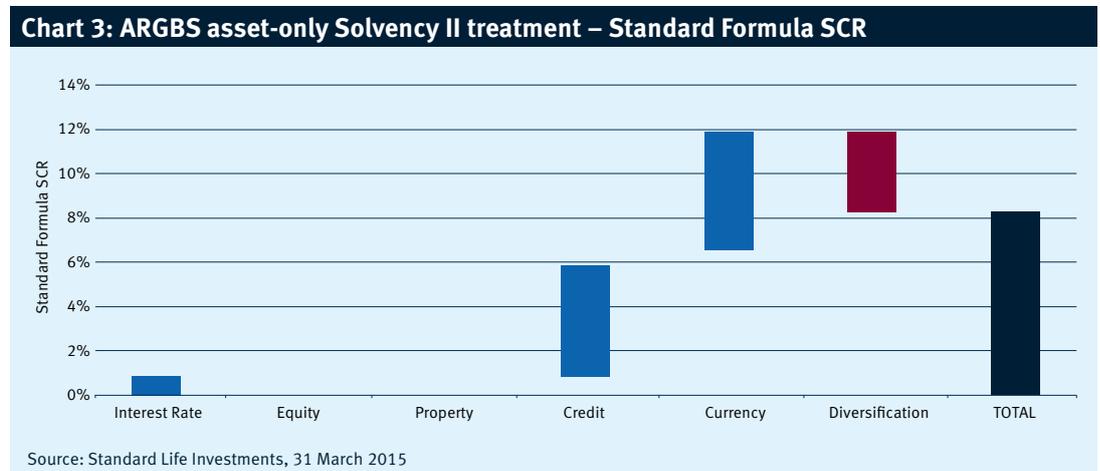
Source: Standard Life Investments, 31 March 2015

Historically, there has been some discussion about the treatment of short equity positions in the Standard Formula. For example, in the past EIOPA suggested that short positions should be ignored in the Standard Formula equity stress. However, these suggestions were not incorporated into the Delegated Act. The Standard Formula method therefore simply prescribes an unambiguous equity down stress and a requirement to look through and apply it to all underlying equity positions.

Second, Chart 1 shows the Standard Formula SCR generates a larger currency risk contribution than the Internal Model. This arises because the Standard Formula assumes that all currency exposures move against the fund at the same time. By contrast, in the Internal Model, we can use realistic currency correlations based on historical data to model the likely real-life diversification achieved within the currency exposures.

Chart 2 shows that the reduction in currency risk capital more than offsets the increase in equity risk capital when moving from the Standard Formula to the Internal Model. An Internal Model would also capture risks that are not within the scope of the Standard Formula, such as inflation, option-implied volatility risk, and yield curve twist risk. Chart 2 reveals that the marginal impact of these additional risk exposures is quite small and is more than offset by the reduction in the currency SCR. Charts 3 and 4 show the corresponding analysis for the ARGBS fund.

For ARGBS, our modelling estimates the Standard Formula SCR at 8%, while the Internal Model SCR is estimated at 7%. Again, a reduction in foreign exchange capital requirements arises due to the more realistic diversification allowance afforded by the Internal Model approach. In this case, this reduction is broadly offset by recognition of interest rate twist and inflation risks in the Internal Model.



With a performance objective of cash +300 bps, ARGBS offers a significantly more capital-efficient route to yield enhancement than, say, high-yield credit, which typically generates a SCR of between 15% and 25%.

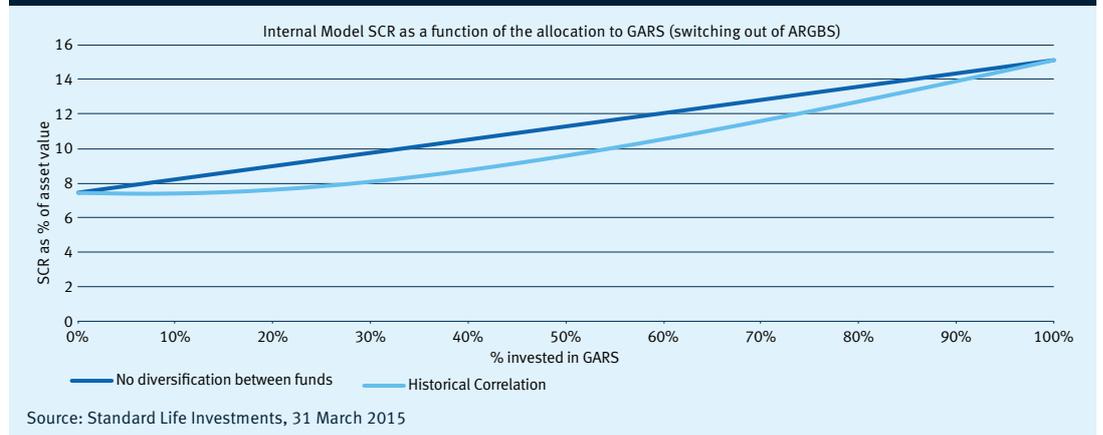
There is one final point to note regarding this asset-only analysis. Standard Life Investments' suite of absolute return funds has been specifically constructed to generate low levels of return correlation between the funds. Significant return diversification can also

be generated and recognised in Solvency II when the funds are held in combination. The historical correlation between monthly GARS and ARGBS returns over the last five years has been +0.37.

Chart 5 shows how the Internal Model SCR behaves for different mixes of ARGBS and GARS under two different correlation assumptions:

- ▶ perfect correlation (i.e. no diversification between funds)
- ▶ historical correlation (+0.37%).

**Chart 5: Diversification between Absolute Return funds – Internal Model for ARGBS/GARS mixes**



### Asset-liability case studies

We also consider how the above funds would affect insurance Solvency II results on an asset-liability basis, with two case studies considered:

- ▶ a with-profit life business that is considering a capital-efficient alternative to its equity allocation, and
- ▶ a general insurance business that is considering ways to enhance expected returns on its bond portfolio.

#### Case Study 1: With-Profits

In this case study, we represent the market risk dynamics of a UK with-profit fund by modelling a liability with the following characteristics:

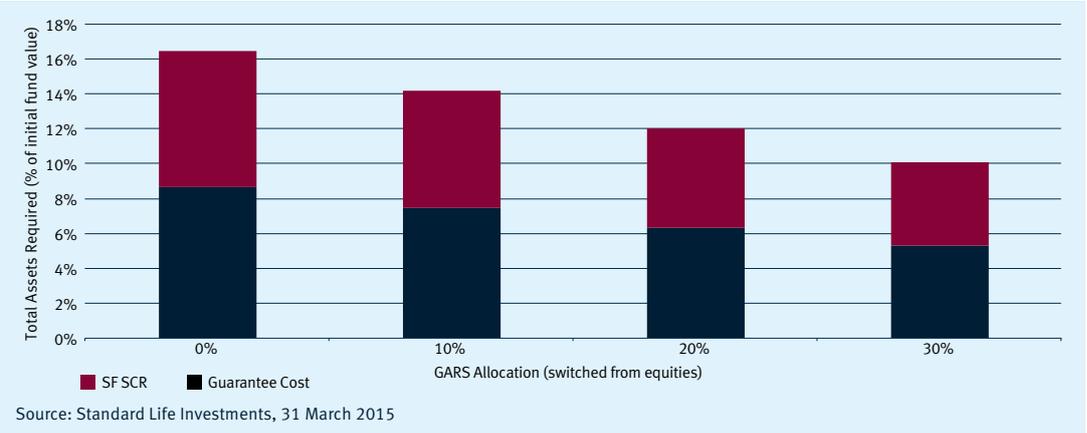
- ▶ an underlying asset fund (backing asset shares) that is currently invested 60% in UK equities and 40% in 10-year A-rated corporate bonds

- ▶ a 10-year money-back guarantee on this fund (i.e. 0% p.a. guarantee)
- ▶ assets in excess of asset shares held in cash, and
- ▶ a 2% lapse rate.

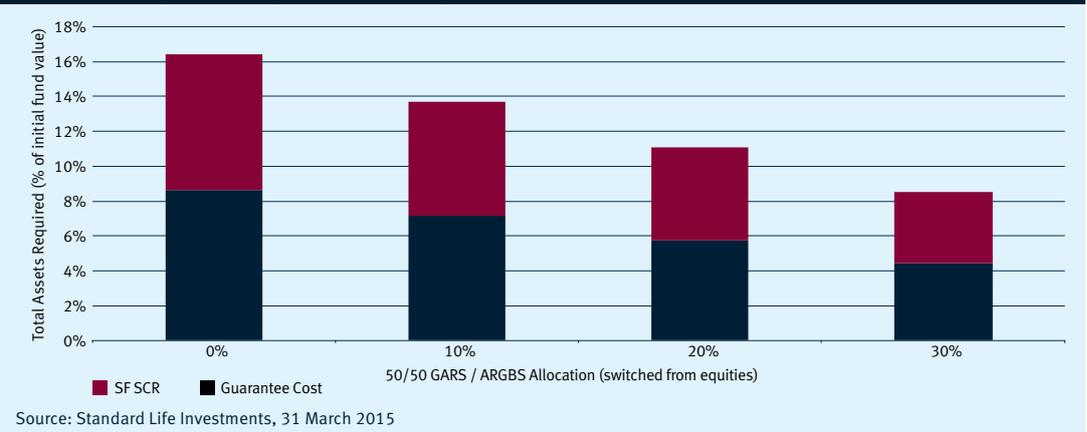
Market-consistent modelling assumptions as at end-March 2015 imply a guarantee cost of 8.6% of the initial fund value. The Standard Formula SCR is calculated at 7.8% of the initial fund value. Chart 6 shows how these figures behave as portions of the equity portfolio are switched into the GARS fund. Chart 7 then shows the corresponding results when the equity portfolio is switched into an equally weighted mix of the GARS and ARGBS funds.

The bond portfolio is assumed to be unchanged in all cases.

**Chart 6: Solvency II treatment of with-profit capital guarantee costs - Standard Formula SCR (switching equity assets into GARS)**



**Chart 7: Solvency II treatment – diversification between absolute return funds, Standard Formula SCR (for GARS/ARGBS mixes)**



The above results illustrate how capital-efficient the absolute return funds can be as an equity alternative for with-profit business. Switching half of the equity portfolio into the equally weighted GARS/ARGBS portfolio (so that the asset allocation becomes 30% equities, 15% GARS, 15% ARGBS and 40% investment-grade bonds) results in a halving of the total guarantee cost and SCR asset requirement compared with the original allocation of 60% equities and 40% investment-grade bonds. Note that the results on an Internal Model basis would be even more attractive for the absolute return suite.

**Case Study 2: General Insurance**

Here, we consider the case of a general insurer invested in a short-dated investment-grade UK corporate bond portfolio. At end-March 2015 credit spread levels, this portfolio might be

expected to offer a gross yield of around 2%. It would generate a Standard Formula Market Risk SCR of around 5%.

In this low-yield environment, the insurer is particularly keen to enhance the expected return of the asset portfolio. It therefore considers two possible approaches:

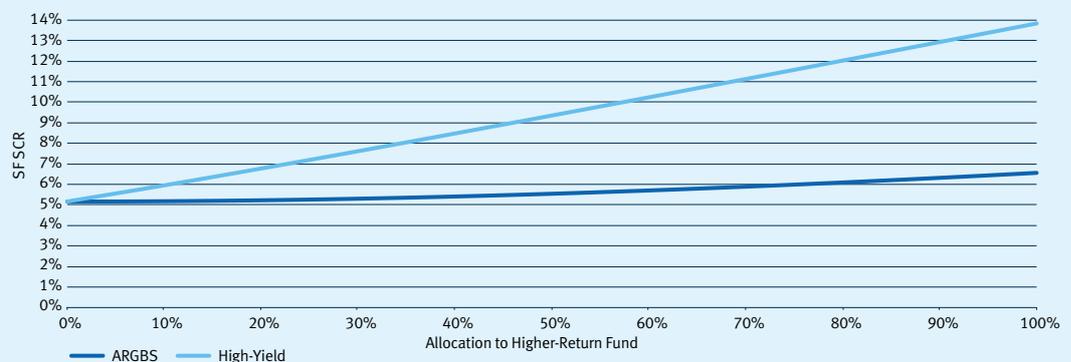
- ▶ move some of the portfolio down the credit-risk spectrum by switching into some high-yield bonds, or
- ▶ switch some of the portfolio into the ARGBS fund.

In both cases, the expected return on the portfolio could be enhanced by 100 bps by switching around half of the fund into the absolute return strategy.

Chart 8 shows how the Standard Formula SCR behaves as assets are switched from the investment-grade corporate bond portfolio into each of the high-yield bonds and the ARGBS fund.

Chart 8 suggests that switching half of the portfolio into ARGBS could increase the expected portfolio return by 100 bps with only a moderate increase in Standard Formula SCR (it would increase from 5.2% to 6.4%). A comparable switch into high-yield credit, on the other hand, would result in the Standard Formula SCR increasing to over 9%.

**Chart 8: Solvency II treatment – switching investment grade into high yield or ARGBS, Standard Formula SCR**



Source: Standard Life Investments, 31 March 2015

## Conclusion

Judging by our analysis of two funds in Standard Life Investments' absolute return range, it appears that absolute return portfolios can obtain highly attractive capital treatment under Solvency II's look-through requirements. This applies to both Standard Formula and Internal Model SCR methods, but especially for the latter. In essence, the look-through principle allows the risk-efficient portfolio construction methods of these funds to be recognised.

- ▶ The Standard Life Investments GARS Fund generates a Solvency Capital Requirement of some 20%, roughly half of the solvency capital requirement of equities, while seeking a return that is similar to the long-term historical average equity market return. This analysis suggests that such a fund could be an attractive equity alternative for life business from a Solvency II capital treatment perspective.
- ▶ The Standard Life Investments ARGBS Fund generates a Solvency Capital Requirement of roughly 8%, around half of the capital requirements for a high-yield bond fund with a similar expected return target. The results of our analysis suggest that a type of fund such as ARGBS could offer an attractive alternative yield-enhancement approach to the short-duration investment-grade corporate bond portfolios typically held by general insurers.

Our analysis also reveals that, where return correlations between different absolute return funds are low, the capital-efficient yield can be improved further still by investing in a package of these funds.

Finally, it should be noted that these results are obtained by fully applying the look-through approach to funds that invest in a broad range of financial instruments. This has implications for asset data requirements and, particularly in the case of Internal Models, for insurers' capital modelling requirements. Standard Life Investments can deliver the asset data required to facilitate insurers' full look-through SCR analysis of these funds. Our Insurance Solutions Team can also provide expertise on the modelling of the underlying financial instruments in firms' capital models.

## Glossary of key terms

<b>Guarantee Cost</b>	Technical provisions for the value of financial guarantees provided in a life assurance contract. In Solvency II, this valuation should reflect the expected cost on a market-consistent basis.
<b>Internal Model</b>	The risk management system of an insurer for the analysis of the overall risk situation of the insurance undertaking, to quantify risks and/or to determine the capital requirement on the basis of the company-specific risk profile. Within the Solvency II framework an Internal Model is intended to fully or partially replace the Standard for the calculation of the Solvency Capital Requirement (SCR). Both quantitative and qualitative requirements will be set by the regulator and explicit approval has to be granted by the supervisor.
<b>Look-through principle</b>	Through the use of actual market data for the investments and assets held, insurers can more precisely calculate the true risk profile of the underlying investments rather than rely on prior, more approximate methodologies.
<b>Pillar 1 (Solvency II)</b>	The area of Solvency II concerned with the calculation of regulatory capital and defining the financial resources that a company must hold to be considered adequately capitalised and solvent. It sets out how an insurer should assess and value assets, and calculate solvency capital. Companies can use either the Standard Formula or an Internal Model approach, although the latter will be subject to stringent standards and require prior supervisory approval. There are three pillars to Solvency II: Pillar 2 focuses on an insurer's governance and risk management, while Pillar 3 covers disclosure requirements (both publicly to investors and analysts, and privately to supervisors).
<b>Solvency Capital Requirement (SCR)</b>	The amount of capital to be held by an insurer to meet the Pillar I requirements under the Solvency II regime. It is intended to represent the 99.5th percentile of the 1-year change in the net assets of the market-consistent balance sheet. The SCR may be assessed using either an approved Internal Model or the Standard Formula.
<b>Standard Formula</b>	In the context of the Solvency II regime, a risk-based mathematical formula prescribed by the regulator for generating insurers' SCR under Solvency II.
<b>Symmetric Adjustment</b>	Insurance and reinsurance undertakings using the Standard Formula have to hold a certain amount of regulatory capital to compensate for losses in the value of equities in case of an adverse scenario. The capital requirement is calculated as a percentage of the market value of the exposures to equity risk. The percentage has been calibrated 'through the cycle', i.e. considering all parts of the economic cycle. In order to prevent pro-cyclical behaviour ('fire sales') of equities exposures, the capital charge calibrated 'through the cycle' is corrected with an adjustment. The adjustment behaves symmetrically. It is expected to be positive (i.e. the capital requirement is higher than the average) when markets have risen recently, and negative (i.e. the capital requirement is lower than the average) when equity markets have dropped in the previous months.

**Sources:** CEA Insurers of Europe Solvency II Glossary  
Lloyd's, [www.lloyds.com](http://www.lloyds.com)  
'Solvency II – A closer look at the evolving process transforming the global insurance industry,' KPMG  
European Insurance & Occupational Pensions Authority, [www.eiopa.europa.eu](http://www.eiopa.europa.eu)  
International Risk Management Institute, [www.irmi.com](http://www.irmi.com)

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