



Efficient equities investing for insurers

From capital requirements reduction to downside optimisation

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Authors



Charles Moussier
Head of EMEA Insurance Client Solutions



Richard Glenn
Head of EMEA Insurance Distribution & Strategy



Daniel Taylor
Associate Client Director - Insurance

Sales contact



Christina Volkmann
Senior Sales Manager,
Head of Insurance Clients

In a low-yield world, the potential long-term returns of equities could look attractive. However, heightened volatility, the risk of sharp downward corrections and Solvency II implications could prevent insurers from holding a significant allocation of this asset class over the long term.

In this paper, we will review the existing regulatory treatment for equities in the insurance sector and outline both regulatory optimisation and downside optimisation techniques, which can be used by insurers to enable efficient exposure to equities. These techniques can be tailored to alleviate pro-cyclical behaviour induced by financial regulation.¹

Our view is that equity exposure can be increased if insurers are able to mitigate the volatility of this asset class. A combination of strategies can be used to design highly customised solutions to meet insurers' individual investment and regulatory challenges.

Introduction

A clear objective of insurers in the current market environment is to reduce the volatility of the solvency ratio, through either:

1. a stabilisation of the numerator: eligible own funds where volatility is driven by the asset portfolio
2. a reduction of the denominator, Solvency Capital Requirements (SCR), which reflects the risk of the allocation

All things being equal, reducing the capital requirements for an insurer will both increase the solvency ratio and likely have a positive impact on the volatility of the eligible own funds.

The capital requirements should be reduced in order to stabilise the solvency ratio, although this increase in certainty of the solvency ratio should not be made at the expense of an equity allocation, in order to preserve the profitability of the asset allocation.

We have summarised the modern approaches insurers can take to gain exposure to equities and considered the volatility reduction, capital charge and provided options of ways to achieve these in Figures 1 and 2. Each strategy is further explained in the following section.

¹ Solvency II, IFRS (International Financial Reporting Standards).

Summary of solutions

Figure 1

Regulatory optimisation: capital requirements reduction

Strategy	Protection purchase	Equity indexed strategy
Main features	An equity allocation covered by a systematic put option purchase programme	A fixed income allocation where coupons are used to purchase equity call options which can replicate an index position exposure
Volatility reduction	Limited reduction before the protection level but improved reduction closer to the strike	Structural reduction - with a smaller amount of equity, volatility is limited to a smaller proportion of the portfolio
Capital charge	10-25%	15-20%
With Invesco	<ul style="list-style-type: none"> - Tailored protection - Self-financed protection 	<ul style="list-style-type: none"> - Equity Indexed Annuity - EIA - Equity Enhanced Fixed Income - EEFI - Option Based Portfolio Insurance - OBPI

Source: Invesco as of June 2020.

Figure 2

Downside optimisation

Strategy	Capped volatility	Factor optimisation: dynamic factor
Main features	Dynamic allocation between equity and a risk-free asset, in order to respect the volatility target	While single factors have outperformed over the long term, they have also experienced strong cyclicalities. Dynamic factor strategies have generated attractive excess returns while reducing portfolio risk.
Volatility reduction	<ul style="list-style-type: none"> - Strong by nature - 8 - 15% total volatility 	<ul style="list-style-type: none"> - Design the factor allocation to be less volatile
Capital charge	Lower than 39% since the equity exposure is lower than 100% in some scenarios	39%
With Invesco	<ul style="list-style-type: none"> - Tailored volatility control according to specific features of the indices 	<ul style="list-style-type: none"> - Invesco Quantitative Strategies - Dynamic multifactor ETF - Customised dynamic multifactor on any indices

Source: Invesco as of June 2020.

1. Regulatory optimisation: capital requirements reduction

Equity capital charge

There are various regulatory treatments for equities under Solvency II²

- The Standard Formula Type 1 equity capital charge is set at a base level of 39%. Type 1 consists of equities listed on regulated markets in the European Economic Area (EEA) countries or members of the Organisation for Economic Cooperation and Development (OECD).
- Standard Formula Type 2 equities have a capital charge of 49%. Type 2 equities consist of equities listed on stock exchanges in countries that are not members of the EEA/OECD, non-listed equities, commodities and alternatives.
- Qualifying Infrastructure depending on categorisation has a capital charge between 30% (projects) or 36% (corporate).
- Strategic Participation and Long-Term Equity investment (LTE) has a capital charge of 22%. This regulatory piece recognises that insurers often have long-dated investment horizons and can encompass listed equity and private equity positions.

All the capital charges above are complemented by a symmetric adjustment which is dependent on the category.

² Source: European Commission.

Symmetric adjustment (SA)

The SCR for Type 1 equities is not fixed but varies over time.

- The maximum deviation in SCR from the base value is 10%.
- In a bull market, the SCR for equities rises, whilst the SCR falls in a bear market. This (symmetric adjustment) makes equities more capital expensive and less attractive under Solvency II in a bull market and less expensive in a bear market.
- This concept is to prevent procyclical investment behaviour and provides up to 10% benefit on the capital charge.

Equities cost of regulatory capital

Profitability principal: the Cost of Capital (CoC) is the expected rate of return insurers must pay for the capital which is required.

If we consider a CoC of 10% for insurers (return on equity requirements), holding Type 1 equities would require paying at least 3.9% through the cycle to the shareholders.

If the equities' total return over the period is inferior to 3.9%, shareholders' profitability requirements would not be fulfilled.

The regulatory cross-asset diversification and policyholders' absorption would significantly lower this hurdle rate in insurance financial management.

A comparison with the other asset classes

Insurers have the ability to dampen financial markets shocks thanks to their long-term investment horizon. However, it is difficult for insurers to invest in equities due to both the high regulatory capital charges for holding equities and the inherent cost of capital. Figure 3 compares the capital charges of different asset classes.

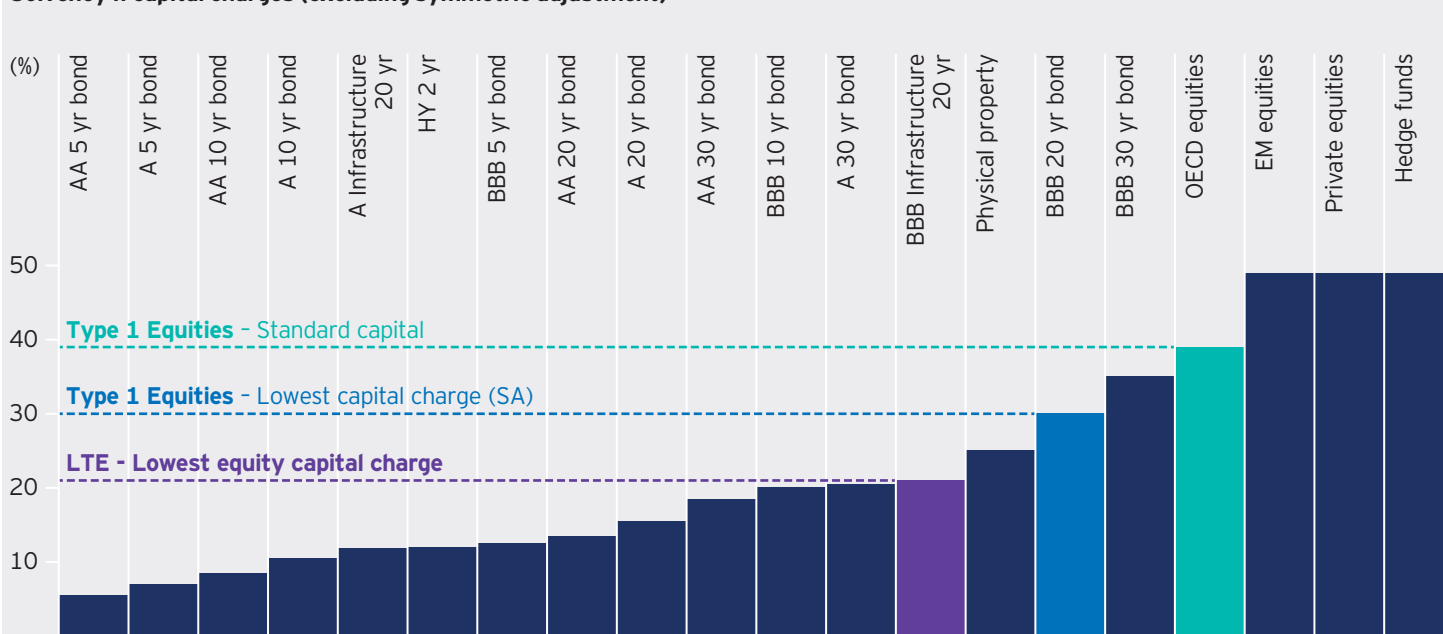
One of our proposed objectives is to reduce the capital charge down from 39%, as described in the strategies in the following section.

The equities capital charge is at 29% when the symmetric adjustment is at its lowest (notably in April 2020). This reflects a relatively low valuation of the equities market for the last 3 years.

Furthermore, EIOPA and the European Commission took regulatory action on the capital charge impediment for holding equities in 2019 and developed the new equities category (22%) in the Solvency II framework (LTE).

A 22% capital charge is equivalent to the capital charge of a 10-year 'BBB' bond and lower than property's capital charge (25%).

Figure 3
Solvency II capital charges (excluding symmetric adjustment)



Source: Invesco as of June 2020.

Invesco Solutions - capital reduction

Exposure reduction

The simplest way to reduce the equity capital charge is to reduce the exposure to the equities markets. This can be done in three ways below:

1. **Selling equities** - however, this would induce realised capital gains/losses and diminish the upside potential from this asset class.
2. **Hedging equities** - using futures or forward contracts could lock the capital gains during a transitory period but it would also cancel the upside potential.
3. **Protection purchase strategy** - buying put options is an effective way to achieve a capital requirement reduction under Solvency II. In addition, it preserves the upside potential of the equity allocation.

Following the strategies used by many insurers in EMEA, we would recommend using a protection purchase strategy as the main tool to reduce equities' capital requirements.

i. Protection purchase strategy

Under the Solvency II framework, the simplest implementation implies the use of risk mitigation instruments with a lifetime superior to one year.

- The key to lowering the capital requirement for investing in equities is reducing the expected 99.5% VaR (Value At Risk) at a 1-year horizon.
- The protections' tenors also must be at least one year to avoid any haircut.
- In addition, as the value of the underlying evolves, the protection level must be regularly adjusted to ensure a satisfactory capital requirement relief.

Then, the success of protected equity strategies strongly depends on the structuring of the protections. This includes:

- the maturity of the protection
- the availability of active option markets
- the strike
- the implied volatility of the underlying asset for the strike and maturity.

The most crucial choice consists of selecting market exposure through time and suitable instruments.

The CoC of the equities stands at 3.9%. This budget could be used to purchase put options which reduce the CoC for holding equities.

Short tenor strategies

For a short tenor strategy, the main driver of the efficiency of the strategies would be the implied volatility level at the purchase date.

Considering a normalized level of implied volatility of 20%, the value of a 100% capital protection (put - at the money - ATM) is 10%.

For a 100% protection strategy the capital requirement of equities would be very limited (low counterparty risk) but the put ATM's value is largely above the CoC of equities.

The 80% put value is much lower at 2.1% so that there is almost a break-even with the CoC for the net required capital (1.9%).

Considering a lower level of implied volatility of 10%, the value of the 80% Capital protection (put ATM) is only 1% which is lower than the considered standalone CoC.

Longer tenor strategies

Using a tenor of 10 years, the cost of protection would be strongly reduced.

Considering a normalized level of implied volatility of 20%, the annualised value of a put ATM is 2.7% which highlights the value of using long-term options rather than short-term instruments.

Invesco can offer customisable and reliable risk management protection purchase solutions, which also relieve the operational and technical burden of managing hedging strategies for the insurer.

This is underpinned by a team of 70 professionals who are dedicated to creating a holistic client experience within Invesco Investment Solutions.

ii. Equity indexed strategy

There are many ways to approach participation in the equity markets with a capital preservation focus. The following are pre-existing examples of these strategies.

EIA - This strategy generally operates like a declared-rate fixed annuity, except that the interest that would have normally been credited is then used to purchase call options. The investment is over a predefined horizon (e.g. 7 to 12 years) and earns a spread over the risk free rate by taking term/credit/liquidity risk. This spread is then invested in call options strategies that give participation to equity performance. These structures have the advantage of limiting the drawdown to a predefined level fixed by the company and to participate in the equity rising environment via call options.

EEFI - Previously, insurers have used convertible bonds in their portfolios. However, traditional convertibles are rigid in design and provide limited flexibility to adequately reflect a manager's investment views. To manage the challenge of investing in a capital limited strategy, here we propose to pair fixed income securities with equity options that seek to attain the stability of fixed income securities with equity upside.

OBPI - According to option-based portfolio insurance theory, we can dynamically allocate between growth-oriented assets and lower risk assets, adding allocation to growth exposure when return goes up, while retreating from growth exposure to lower risk assets when return goes down, this strategy is designed to replicate the behaviour of an option with a predefined risk budget.

We believe that the above are new and dynamic ways of approaching equity participation and we will continue to see more of these types of strategies developed in the future.

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2. Downside optimisation

i. Capped volatility

One traditional way for an insurer to invest in equities is by investing in a capped volatility strategy as often high volatility has corresponded to poorly performing equity markets.

The capped volatility mechanism:

- To control the volatility of the strategy, the equity portion is reduced when its volatility is too high in comparison to the objective.
- Maintaining portfolio volatility under a certain level (ceiling or cap) by shifting the allocation between stocks, bonds and cash, as market conditions change. This seeks to reduce risk during extreme equity market declines, but allows for some upside participation when markets rise.
- Mitigating the impact of the lowest market troughs and highest market peaks.

These strategies will likely reduce the capital requirements during high volatility periods, since the exposure to equities would decline. Reducing the volatility of the equities will reduce the volatility of the eligible own funds.

Capped volatility strategies have proved to be the most efficient strategy where their main objective is to reduce drawdowns.

With deep experience in the insurance industry, Invesco has developed and managed different algorithms to achieve capped volatility and target volatility strategies customised with investor requirements.

ii. Factor optimisation: dynamic factor

Factor-based strategies through multiple and dynamic factors could involve a lower allocation to equities in exchange for improved efficiency due to outperformance. In the factor strategy, investors are only committing a lower notional amount to achieve the same return, the capital charge will be reduced accordingly.

While single factors have outperformed over the long-term, they have also experienced strong cyclical, occasionally leading to extended periods of underperformance driven by changing market environments.

Factor cyclical (Figure 4) can be understood in the context of factor fundamentals and their sensitivity to macroeconomic risks. While size and value tend to be procyclical factors, low volatility and quality tend to be defensive factors. Momentum, a more transient factor, tends to outperform during late cyclical stages.

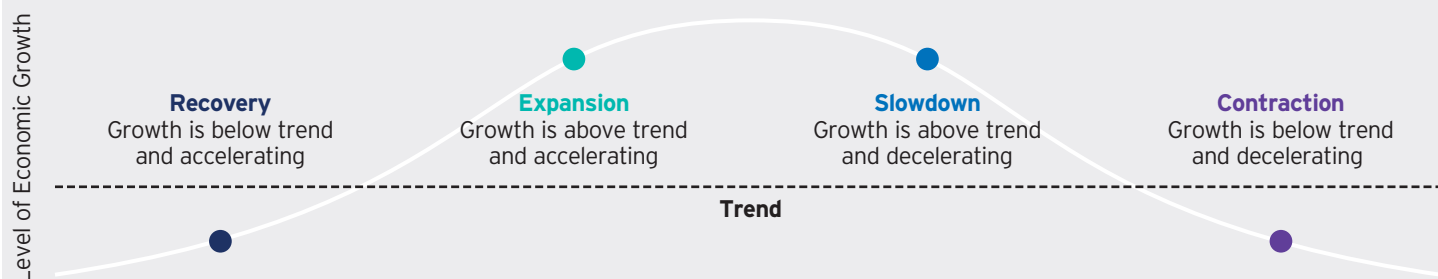
We believe investors can exploit these distinct macro sensitivities among factors, developing dynamic rotation strategies driven by forward-looking macro regime frameworks, with the potential to outperform static multifactor portfolios while maintaining diversification to multiple factors.

Invesco's dynamic factor strategies have generated attractive excess returns in the past while reducing portfolio risk in terms of volatility, market beta and drawdowns. Results are statistically significant after accounting for transaction costs, capacity and turnover, and they are robust across market cap segments and regions.

“Invesco's dynamic factor strategies have generated attractive excess returns in the past while reducing portfolio risk in terms of volatility, market beta and drawdowns.”

Figure 4

Factors expected to outperform in each macro regime



Emphasis on each factor is determined by the current environment

Size	←	Size	←	Size	←	Size	←
Value	←	Value	←	Value	←	Value	←
Momentum	←	Momentum*	←	Momentum	←	Momentum*	←
Low volatility	←	Low volatility	←	Low volatility	←	Low volatility	←
Quality	←	Quality	←	Quality	←	Quality	←

Source: Invesco for illustrative purposes only. *Momentum using a bottom-up framework has the potential to act defensively in contractionary periods and pro-cyclically in expansionary periods.

Conclusion

Invesco Investment Solutions partner with insurers to integrate equity exposure across their portfolios. We incorporate a tailored approach for each client as we understand one solution does not fit all.

Due to unique client challenges, each strategy with its individual objective could be implemented at a different level of targeted volatility or profitability in order to design a highly customised solution. A bespoke combination of the innovative strategies proposed is likely to lead to an optimised outcome to meet precise client objectives.

For further information on the strategies in this paper, please get in contact with us.

Charles Moussier

Head of EMEA Insurance Client Solutions

+33015 662 4305
charles.moussier@invesco.com

Daniel Taylor

Associate Client Director - Insurance

+44207 543 3592
daniel.taylor@invesco.com

Richard Glenn

Head of EMEA Insurance Distribution & Strategy

+44203 370 1191
richard.glenn@invesco.com

Christina Volkmann

Senior Sales Manager, Head of Insurance Clients

christina.volkmann@invesco.com

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