

Solvency II ratios and the volatility challenge

Managing insurance portfolio ratings migration in a recessionary environment

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IN BRIEF¹

Insurers have learned from experience not to underestimate the volatility of the Solvency ratio. That lesson is of critical importance as we approach the end of the credit cycle:

- The volatility of the Solvency ratio is heavily driven by the market risk Solvency Capital Requirement (SCR), a significant portion of which emanates from spread risk SCR, which in turn is credit-rating dependent.
- Our analysis shows that in an average recession, 19% of A rated companies fall to BBB or below, while 15% of BBB rated companies fall below investment grade, causing a 25 percentage point decrease in the Solvency ratio for the average European insurance company, considering credit migration alone. However, recessions and their impacts vary.

We illustrate why now is an opportune time for insurers to review the flexibility of their mandate designs and stress-test portfolio resilience under [three recession scenarios](#).

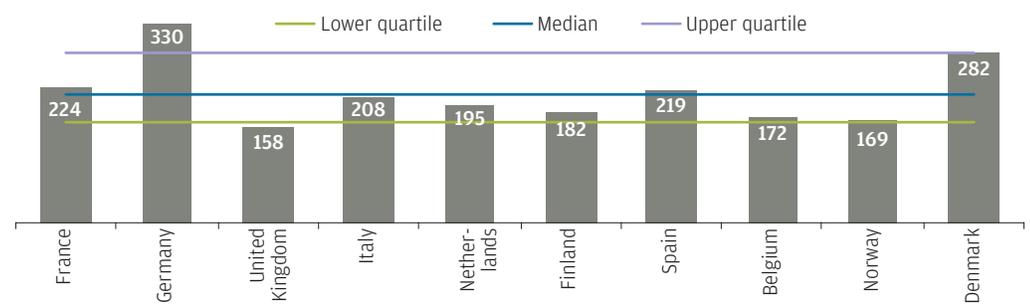
¹ See the Glossary at the end of this piece for definitions of key terms used throughout.

SINCE THE INTRODUCTION OF SOLVENCY II IN JANUARY 2016, OUR CONVERSATIONS WITH CLIENTS HAVE BECOME MUCH MORE FOCUSED ON THE VOLATILITY RATHER THAN THE LEVEL OF THE SOLVENCY RATIO (see ‘Solvency II—Background’, page 7).

The average level of Solvency ratios across countries (**EXHIBIT 1A**) together with the magnitude of the changes in these ratios between 2016 and 2017 (**EXHIBIT 1B**) illustrate the volatility challenge. Indeed, 10% of insurance companies across Europe saw their Solvency ratios increase by more than 50 percentage points, while another 10% saw a 20 percentage point decrease.

Insurers can experience dramatic swings in Solvency ratios year on year

EXHIBIT 1A: AVERAGE SOLVENCY RATIOS (%) FOR EUROPEAN LIFE AND COMPOSITE INSURERS BY COUNTRY—2017*



Source: Solvency and Financial Condition Reports (SFCR), Solvency II Wire; data as at 31 December 2017.

*Incorporates interest rate and equity transitional measures, as well as matching and volatility adjustments.

EXHIBIT 1B: AVERAGE PERCENTAGE POINT (PPT) CHANGE IN SOLVENCY RATIOS FOR EUROPEAN LIFE AND COMPOSITE INSURERS BY COUNTRY—YEAR ON YEAR, 2016-17*



Source: Solvency and Financial Conditions Reports (SFCR), Solvency II Wire; data as at 31 December 2017.

*Incorporates interest rate and equity transitional measures, as well as matching and volatility adjustments.

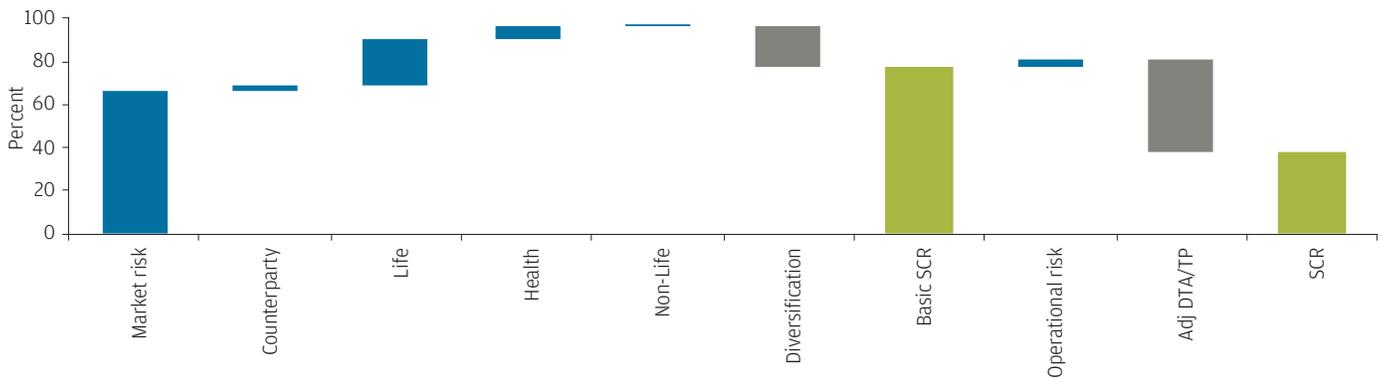
Whilst it is difficult to draw a strong conclusion about what drives Solvency ratio volatility, it is clear that market risk SCR is a big contributor to the overall SCR of insurers (**EXHIBIT 2**).

Since the introduction of Solvency II, most insurers have rebalanced their portfolios. In particular, we have seen an increased allocation to illiquid asset classes, funded by a

decrease in equities, which are far more expensive in terms of capital requirements. Alongside these shifts, the search for yield has forced insurers to bias their fixed income portfolio towards credit risk. As a result, the spread risk component has now become the main contributor to market risk SCR, making active management of the credit portfolio critical.

Market risk is the largest contributor to overall SCR for an average European insurer

EXHIBIT 2: DECOMPOSING THE SOLVENCY II CAPITAL REQUIREMENT**,**



Source: Solvency and Financial Conditions Reports (SFCR), Solvency II Wire; data as at 31 December 2017.

*Components are averages from 2017 SFCRs for European insurers.

**Basic SCR (BSCR) is the sum of capital requirements for market risk + counterparty default risk + risks associated with life, health and non-life underwriting *minus* an offset for diversification; the *addition* of capital requirements for operational risk *minus* an adjustment for deferred taxation and loss absorbency of technical provisions (Adj DTA/TP) yields the overall SCR.

CREDIT RISK IN PORTFOLIOS AND THE CREDIT CYCLE

A decline in economic growth can have serious implications for insurance company Solvency ratios, as deteriorating credit fundamentals directly impact the Solvency Capital Requirement. It is therefore important that insurers assess the intensity of any future recession to ensure they are sufficiently capitalised. The uncertainty of the credit environment at this late stage of the cycle compounds the implications of the greater tilt towards credit risk in insurers’ portfolios. The combination calls for a sharp focus on fundamental credit trends and an understanding of the potential repercussions of different recession scenarios on the Solvency ratio.

The main risk associated with an insurer’s allocation to credit is a decline in the fundamental quality of the issuing entity. Rating downgrades directly impact the spread risk SCR and, combined with potential defaults, can lead to an increased requirement for solvency capital, while spread moves increase the volatility of unrealised gains, losses and the Solvency ratio. An additional consideration: the income statement implications of financial reporting standard IFRS 9, which requires recognition of expected credit losses (ECL) as a forward-looking indicator.² The ECL is ratings dependent and recognised through the income statement, thereby increasing earnings volatility as ratings migrate downward.

² International Financial Reporting Standards (IFRS): IFRS 9 Financial Instruments. The principles set out in IFRS 9 contain several changes to the rules provided under International Accounting Standards (IAS) 39, which it replaces. IFRS 9 focuses on financial recognition and measurement, impairments and hedge accounting.

In light of these solvency capital dynamics, we believe active credit analysis and stress testing of portfolios under plausible rating downgrade scenarios should be at the core of every insurer’s risk management process, particularly given the downtrend in credit quality over the past decade and the approach of the next recession.

Monitoring trends in credit quality

We believe we are in the later stages of the credit cycle, characterised by high levels of employment and capital expenditure, higher borrowing requirements and rising leverage. Thus far, higher profits and lower refinancing costs have helped to offset concern about higher debt levels, but a slowing economy could dampen corporate profits, diminishing cash flows that are needed to service these large debt obligations. Overall credit quality has evolved since the financial crisis, with the European and UK markets’ average rating declining from Aa3 to A3 and the U.S. market’s deteriorating by just one rating notch to A3 (EXHIBIT 3).

This relatively gradual deterioration conceals increased risk from both (a) an increase in the BBB proportion of the market and (b) an increase in duration. There are two main reasons for the historical decline in quality. The first stems from a change in the rating methodology for the financial sector, whereby rating agencies have reduced the potential uplift to an issuer’s stand-alone credit rating resulting from the agencies’ assessment of sovereign support for the issuer. The second is the disintermediation of the banking sector, specifically in the case of smaller, lower quality companies that can now access financing directly from capital markets. As a result, the BBB rated segment has

Investment grade corporate bond markets have seen a decline in credit quality

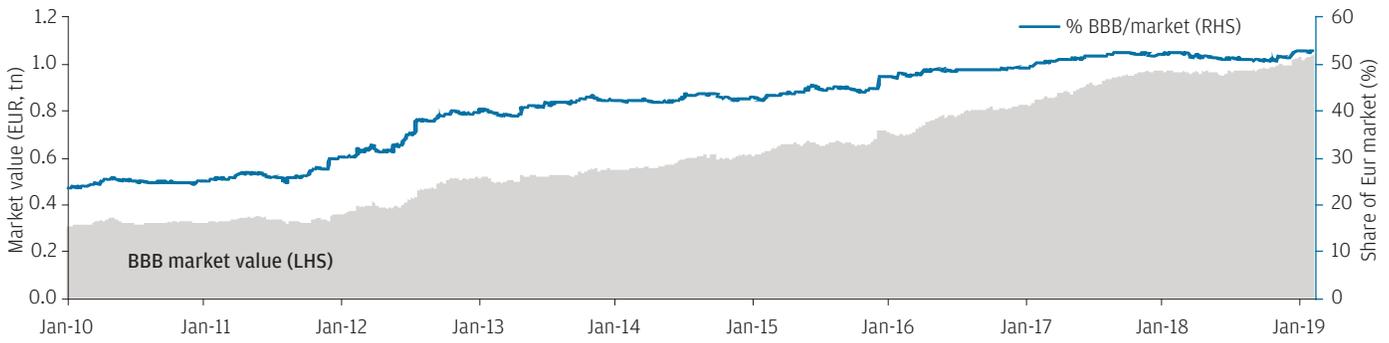
EXHIBIT 3: AVERAGE RATINGS ACROSS INVESTMENT GRADE CORPORATE MARKETS



Source: ICE Bank of America Merrill Lynch (BofAML) Global Corporate Index; data as at 30 April 2018.

The proportion of BBB rated borrowers in Europe has doubled since 2010

EXHIBIT 4: EUROPEAN CORPORATE BBB RATED DEBT (MARKET VALUE AND % OF INVESTMENT GRADE)



Source: Bloomberg Barclays Euro Aggregate Corporate Bond Index; data from 31 January 2010 to 8 February 2019.

increased from approximately 25% to over 50% of the European investment grade market since January 2010 (EXHIBIT 4). This has led to an increased allocation to BBB risk as insurers have reached for incremental yield in response to global risk free rates depressed by quantitative easing.

These trends could, in fact, look worse if rating agencies applied their rating criteria more rigorously. A number of studies show that a significant portion of the investment grade market has below-investment grade leverage metrics. It should be noted, however, that quantitative balance sheet metrics such as leverage are not the only components factored into credit ratings; qualitative data such as country risk, industry risk and individual business profiles are also deemed important. Taking these into consideration, we estimate that approximately 8% of the Bloomberg Barclays US Aggregate Industrial Index could currently be rated below investment grade (below BB+) under stricter application of rating agencies' criteria. In truth, rating

agencies generally afford companies time to move towards their target metrics and in some cases allow companies up to two years to return balance sheet metrics to pre-acquisition levels following M&A activity. We are seeing this dynamic play out with Anheuser-Busch. The company is in the process of de-levering after the SABMiller acquisition, which brought net debt/Ebitda to roughly 5.5x. Its leverage currently stands at 4.6x vs. the 4.0x leverage required for its current rating of BBB+.³

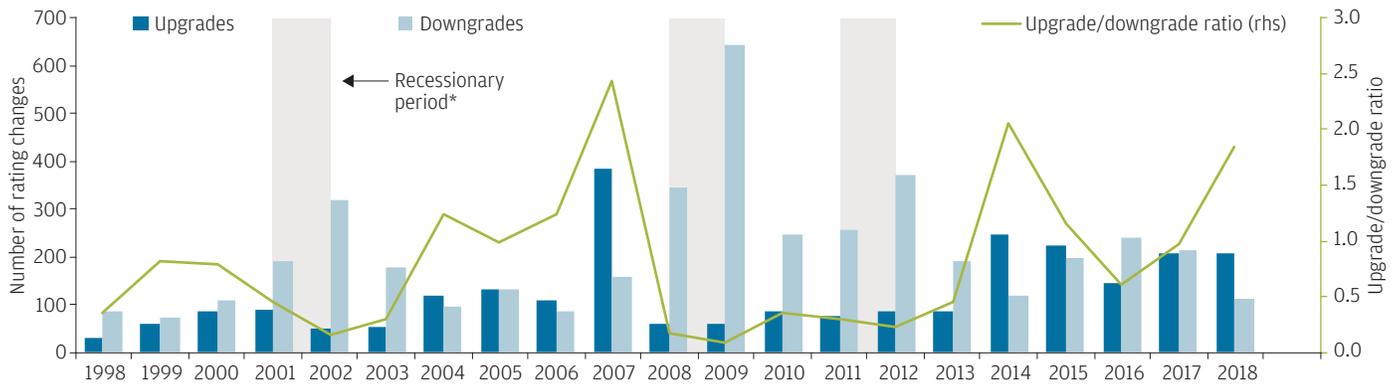
Stress-testing portfolios

Historically, ratings migration and defaults have increased when recessions have emerged as companies were unable to react quickly enough to deteriorating revenue and earnings. The subsequent increase in leverage can prompt rating agency downgrades (EXHIBIT 5).

³ Anheuser-Busch 4Q18 results presentation, 1 March 2019; J.P. Morgan Asset Management.

Downgrades typically outpace upgrades when recessions hit

EXHIBIT 5: GLOBAL UPGRADES AND DOWNGRADES IN THE INVESTMENT GRADE MARKET*



Source: Moody's Investors Service, J.P. Morgan Asset Management; data as at 31 December 2018.

*Recessions defined by National Bureau of Economic Research (NBER) and the European sovereign crisis of 2011-12.

Given our view that we are near the end of the cycle, we believe now is an opportune time for insurance companies to start stress-testing their investment portfolios under different recessionary assumptions. Such analysis can help insurers assess the robustness of their portfolios' ratings profiles and the stability of their Solvency ratios under alternative end-of-cycle scenarios.

Our analysis begins by defining three potential negative ratings migration scenarios, based on downgrade experiences associated with National Bureau of Economic Research (NBER)-defined recessions from 1981 to 2009, along with the European sovereign crisis of 2011-12. As illustrated in Exhibit 5, downgrades occur over a protracted period of time around a recession (usually two years), as the lagged effect of weaker growth takes time to impact corporate balance sheets. In defining our three scenarios we therefore look at ratings migration tables over a two-year period following the start of a recession.

Next, we measure the expected impact of each scenario on an average European insurer's portfolio ratings profile, market risk SCR and Solvency ratio over a two-year period once a recession is underway. For this analysis, we have assumed that all other components remain constant (market value of liabilities, insurance risk capital requirement and the loss absorption capacity of technical provisions) and have looked solely at the impact of ratings migration on spread risk SCR.

Scenario definitions

Our initial balance sheet is defined as the balance sheet of an average European insurer.⁴

Scenario 1: Average recession. This scenario averages rating experiences over two-year periods following the onset of NBER-defined recessions occurring from 1981 through 2009 and the European sovereign crisis of 2011-12. On that basis, our average recession calls for 19% of A rated bonds to be downgraded to BBB or below and 15% of BBB rated bonds to be downgraded to below investment grade. (For comparison, historically, across cycles, we observe that approximately 6% of A rated corporates migrate to BBB or below, on average, each year, while 5% migrate from BBB to high yield.⁵)

⁴ Solvency and Financial Conditions Reports (SFCR), Solvency II Wire; components are averages from 2017 SFCRs for European insurers, as at 31 December 2017.

⁵ 'Annual Default Study: Defaults Will Rise Modestly in 2019 Amid Higher Volatility', Moody's Investors Service, 1 February 2019. https://www.moody's.com/researchdocumentcontentpage.aspx?docid=PBC_1156859

Scenario 2: 2001 recession. We assign the highest probability to this recession scenario. We expect the next recession to be most analogous to the 2001 recession, which followed the longest period of growth in U.S. history and lasted just eight months. Despite the bursting of the 'dot-com bubble', GDP declined by just 0.3% from peak to trough and unemployment increased to 6.3%. Based on ratings migration over the following two years, this scenario assumes that 15% of A rated companies will be downgraded to BBB or below, while 17% of BBB rated companies will be downgraded to below investment grade.

We look for this next downturn to be mild relative to the financial crisis of 2008. In the two years following the Great Recession, 21% of A rated companies were downgraded to BBB or below. Since then, de-risking and capital accumulation driven by regulatory reforms have left the banking sector in better shape to withstand the next recession.

Scenario 3: Double 2001 recession. We include a more 'extreme stress' downgrade scenario to reflect the primary concern we anticipate at the end of this cycle—namely, the extent to which companies can deal with higher than average end-of-cycle leverage while the means to service debt repayments deteriorates. We arbitrarily double the 2001 recession downgrade numbers. Whilst we believe this to be an extreme scenario, it is worth noting that rating agencies could be less lenient this time in allowing companies to adapt their business models over time.

Implications for insurers

As summarized in **EXHIBIT 6**, our analysis indicates that, under all three scenarios, significant ratings migration will likely have negative implications for insurers. In short, while we expect a mild recession, with only a marginal increase in defaults, Solvency ratios are likely to decrease meaningfully due to downward ratings migration alone. It is key to note again that the Solvency ratio impacts shown in Exhibit 6 do not take into account the market value volatility of assets and liabilities likely to result under such scenarios. This could have a further negative impact on Solvency ratios.

Even assuming a mild recession, Solvency ratios are likely to decline along with credit ratings

EXHIBIT 6: THREE RECESSION SCENARIOS AND IMPLICATIONS FOR INSURERS

	Initial balance sheet	Average recession	2001 recession	Double 2001 recession
Scenario description	<ul style="list-style-type: none"> Averages of balance sheet components from 2017 SFCRs for European insurers, 31 December 2017 	<ul style="list-style-type: none"> Average upgrade and downgrade experience for NBER-defined recessions occurring during 1981-2009 and the European sovereign crisis of 2011-12 19% of A rated companies downgraded to BBB or below, 15% of BBB to below investment grade 	<ul style="list-style-type: none"> A repeat of the 2001 recession experience 15% of A rated companies downgraded to BBB or below, 17% of BBB to below investment grade 	<ul style="list-style-type: none"> What if this time is worse? We arbitrarily double the 2001 downgrade numbers. Rating agencies could be less lenient this time in allowing companies to adapt their business models over time.
Market risk SCR (%)	6.8	7.2	7.6	8.6
Solvency ratio (%)	254	229	208	178
Change in Solvency ratio (ppt)	–	-25	-46	-75
High yield (%)	2.2	3.8	5.3	8.5
Default (%)	–	0.2	0.5	1.0

Source: Solvency and Financial Conditions Reports (SFCR), Solvency II Wire; J.P. Morgan Asset Management. Analysis as at February 2019.

Solvency ratio impacts do not take into account the market value volatility of assets and liabilities likely to result under each scenario. These could have a further negative impact on Solvency ratios. Market value of liabilities, insurance risk capital requirements and loss absorption capacity of technical provisions are assumed to remain constant. Ratings experiences are over two-year periods following the onset of NBER-defined recessions and the European sovereign crisis of 2011-12. Discrepancies in “Change in Solvency ratio” may exist due to rounding.

END-OF-CYCLE CHECKLIST FOR INSURERS—
CONSIDERATIONS AND SUGGESTIONS

We offer a checklist of steps for insurers to consider in readying their portfolios and enhancing their investment management practices in this uncertain economic and credit environment.

1. Mandate design: Insurers should ensure that the management of their portfolios is flexible enough to react to an increase in spread volatility and ratings migration. Specifically, they should consider management style and review current investment guidelines. In particular, guidelines should provide an allowance for downgrades to avoid forced selling.

a. Mandate style: Insurers should focus on working with teams that have a deep bench of experienced research analysts who can identify and weed out challenging issuers. In addition, the accounting treatment and investment strategy of a number of insurance ‘buy and maintain’ portfolios allow them to withstand mark-to-market volatility and take a longer-term perspective, with their investments primarily driven by a view on fundamentals. Such portfolios could take advantage of any pockets of liquidity or opportunities as they present themselves. Widening spreads on insurers that credit analysts are fundamentally comfortable with will likely lead to adding that exposure at attractive yields.

b. Guidelines: Mandates are ideally designed with a focus on diversification—the only free lunch in town. Limiting the amount invested in any single issuer and ensuring a diversified mix offer the best protection against event risk. Therefore, insurers should consider reducing their issuer limit exposure guidelines.

Insurers should also consider introducing hard and soft limits into guidelines in order to avoid being forced sellers on downgrades, given that most insurance mandates have single issuer percentage limits that step down as ratings move lower. A ratings downgrade from single A to BBB could prompt a reduction in position size to comply with a lower allowed exposure for a lower rated entity. The downgrade of General Electric (GE) from A to BBB is one example, as investors had to sell large positions in GE to comply with the BBB issuer rating limit.

c. Downgrade buckets: Investment committees should also review their allowed allocation to non-investment grade securities, as forced selling can trigger significant losses (see ‘Buy and maintain: A “smarter” approach to credit portfolio management,’ J.P. Morgan Asset Management, 2014).

Forced selling could be particularly impactful given that the amount of downgrades from BBB to high yield (HY) in

all three scenarios represents a sizable portion of the HY market, creating a surge of new bonds for investors to digest. An introduction of a downgrade bucket for issuers downgraded below investment grade is a solution many of our insurance clients use.

2. **Risk management and stress testing:** Insurers need to be certain that they have the right amount of risk in their portfolios. Have they stress-tested their portfolios to determine the impact on income and capital of both credit downgrades and market value movements? Have they considered tail risk/downside hedging strategies approaching the later stages of the credit cycle? Insurers could assess the spread risk in their portfolios in the context of a strategic asset allocation that incorporates all stakeholders' input and consider having dry powder in the event of a sustained widening in fixed income market sectors, such as investment grade, high yield credit and emerging market debt. It's also important to assess asset-liability management risk and whether it is appropriate to close any duration mismatch, particularly since the end of the cycle could see rates lower for longer.
3. **Accounting considerations:** Under IFRS 9, insurers will be required to define an impairment policy to identify non-performing bonds and calibrate probability of default—and loss given default—for each bond held in the portfolio. To accelerate the recognition of credit losses for bonds not classified as fair value through profit or loss (FVTPL), entities are required to allow for expected credit losses as a forward-looking indicator. Generally, the loss allowance shall be calculated at an amount equal to the 12-month ECL unless there has been a significant increase in credit risk since the purchase date of the bond (notably, a downgrade from investment grade to high yield), in which case the loss allowance will be measured at an amount equal to the lifetime ECL. An entity shall recognize in the P&L statement, as an impairment gain or loss, changes in the amount of ECL. Downgrades could therefore not only decrease the Solvency ratio but also have an impact on the accounting income, as higher ECL must be recorded for lower rated companies. To reduce any ECL-related volatility, initial and ongoing credit analysis and risk management are key for bond portfolios.⁶

SOLVENCY II—BACKGROUND

Solvency II came into force in January 2016, introducing a new framework for calculating the capital requirement of insurance companies in Europe, designed to reduce the risk of insolvency. The Solvency ratio (own funds divided by SCR) is a key measure of a company's financial stability—it must be maintained above 100%. Most insurers across Europe generally aim to have a ratio above 150% to avoid closer regulatory monitoring and the need to provide regulators with a plan for getting back on track.

Most companies were well prepared ahead of Solvency II, and the transition was well managed. However, the volatility of the Solvency ratio was underestimated and quickly became the centre of attention for insurers and their investors. Indeed, the ratio can vary massively from one quarter to the next and is very sensitive to small shocks to the balance sheet. The focus of insurers across Europe has therefore shifted from being solvent to stabilizing their Solvency ratios.

GLOSSARY

- **Solvency capital requirement (SCR):** The amount of funds insurance and reinsurance companies must hold, as specified under the European Union's Solvency II directive, designed to ensure that these entities can meet their obligations to policyholders and beneficiaries over the forward-looking 12 months.
- **Eligible own funds:** The excess of assets over liabilities
- **Solvency ratio:** Ratio of eligible own funds to required own funds (SCR)
- **Market risk SCR:** A component of the solvency capital requirement. It is the risk of loss or adverse change in the financial situation of the insurer/reinsurer resulting from fluctuations in the level or the volatility of market prices of assets, liabilities and financial instruments.
- **Spread risk SCR:** A contributor to market risk SCR. This measure is designed to reflect the change in the value of an insurer's assets and liabilities caused by changes in the level or the volatility of credit spreads over the risk-free term structure.

⁶ 'Preparing for IFRS 9: Investment Implications for Insurers', J.P. Morgan Asset Management, 14 April 2016.

PORTFOLIO INSIGHTS

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With USD 121.7 billion in insurance general account assets under management and USD 46.1 billion in insurance subadvisory assets globally,¹ we provide innovative strategies from across our multi-asset investment platform to help insurers maximize risk-adjusted returns.

¹ As at 31 March 2019.

NEXT STEPS

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