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# Solvency II 2020 Review

## EIOPA's considerations and proposals for the calibration of market risks under the Solvency Capital Requirement standard formula

On 15 October 2019, the European Insurance and Occupational Pensions Authority (EIOPA) published a consultation paper seeking input on its opinion setting out technical advice for the 2020 review of the Solvency II framework, which had been requested by the European Commission (EC). EIOPA opines that whilst Solvency II works well overall, evolutionary improvements can be made in several areas, including long-term guarantees, macro-prudential issues, and technical framework improvements. Most importantly from an investment perspective, this last areas covers considerations and proposals for the calibration of market risks under the Solvency Capital Requirement (SCR) standard formula. This paper focuses on this aspect of the consultation, and it summarizes EIOPA's key considerations for potential improvements of the market risk SCR module affecting all investments of an insurance company.

### Equity risk

With regard to equities, EIOPA was asked by the EC to conduct a comprehensive review of the equity risk sub-module, and in particular to assess the appropriateness of the design and calibration of the risk charges for all equity investments that are subject to a reduced capital charge of 22%. This includes duration-based equity investments but also strategic equity investments and long-term equity investments for which EIOPA has not yet provided any calibration. Figure 1 summarizes the equity risk charges adopted by the EC and those charges initially advised by EIOPA or its predecessor institution CEIOPS. In general, EIOPA does not see any need for re-calibration of those capital charges for which they already have provided a calibration. Hence, suggested changes in the consultation paper relate to long-term equity investments and strategic equity investments.

**FIGURE 1. CAPITAL CHARGES FOR DIFFERENT TYPE OF EQUITY INVESTMENTS**

	Current Solvency II calibration	EIOPA/CEIOPS calibration
Equity Type I (listed EEA/OECD)	39%	45%
Equity Type II (listed non-EEA/OECD)	49%	55%
Infrastructure project	30%	30-39%
Infrastructure corporate	36%	36%
Strategic equity investments	22%	-
Long-term equity investments	22%	-
Duration-based equity	22%	22%
Qualifying unlisted equity portfolios	39%	39%

Source: EIOPA. As of: October 2019

### Long-term equity investments

In March 2019, the EC introduced a lower capital charge for specific long-term investments in equities. In order to qualify for the long-term equity (LTE) investment treatment, an equity investment must meet several requirements. Basically, only equities listed/domiciled in the European Economic Area (EEA) that are held for at least 5 years and which are part of a segregated liability-matching portfolio can benefit from the lower capital charge.

In fact, the LTE investment category can be considered as a revision of the duration-based equity risk (DBER) sub-module as both concepts aim to capture the risk of equity investments that are held for a longer period. However, when Solvency II was introduced, most EEA member states opted not to transpose the DBER sub-module into national law. The main reason for the low adoption are the restrictive requirements attached to the DBER sub-module which limit its applicability to a small group of insurance companies. In particular, the DBER sub-module can only be applied by life

insurance companies that provide certain occupational retirement provisions or retirement benefits and that meet further criteria, such as a holding period of at least 12 years. Thus, there is actually only one insurance company (based in France) that uses DBER investments.

In contrast, the concept of LTE investments is less restrictive while in fact substantively capturing the same type of equity risk as the DBER sub-module. Hence, in order to reduce complexity, EIOPA suggests phasing out the DBER sub-module and refining the requirements for LTE investments (without imposing the same restrictions as for DBER investments) to accommodate this type of risk.

In particular, EIOPA proposes:

- **Diversification:** The current regulation does not set out diversification requirements; hence, the LTE treatment may also be applied to even single equities whereas the lower risk charge of 22% was calibrated based on well-diversified equity indices. Therefore, EIOPA suggests a new requirement that LTE eligible portfolios have proper diversification, which is deemed satisfied even with only EEA equities as otherwise required.
- **Exclusion of controlled intra-group investments:** EIOPA sees a potential overlap between LTE investments and strategic equity investments. In particular, if controlled intra-group investments were classified as LTE investments, it could be that the minimum holding period of 5 years is still met even though the rest of the equity portfolio is traded daily. Hence, EIOPA proposes to exclude controlled intra-group investments from LTE eligibility.
- **Diversification between LTE and other risks:** Under the current framework, LTE investments are subject to the same diversification benefits as 'short-term' equity investments. A first analysis conducted by EIOPA was not conclusive on whether short-term and long-term equity investments might offer different diversification benefits, so EIOPA does not make a proposal on this. Instead, it asks insurance companies to provide further input and guidance.

In addition to this general framework assessment for LTE, EIOPA also performed a quantitative calibration assessment of the reduced risk charge of 22%. This reduced charge had been set by the EC based on, among other things, the CEIOPS calibration of the DBER sub-module in 2010. However, when EIOPA used an adjusted version of this work for LTE investments, it could not corroborate the 22% charge. Despite this, EIOPA does not propose a change.

### Strategic equity investments

Like LTE investments, strategic equity investments can also benefit from a reduced capital charge of 22%. However, the motivation and justification for the lower capital charge is different. Whereas the motivation for the LTE charge reflects the idea that equities might hold lower risk over a longer investment period, the charge for strategic equity investments is still based on a 1-year horizon (consistent across the Solvency II framework) and should therefore reflect some form of lower short-term risk. This lower risk of strategic equity investments is a result of both the nature of the investment and the influence exercised by the investor (the participating insurance company) over the target (the related company). Therefore, in order to apply the reduced charge to a strategic equity investment, an insurer must demonstrate that the equity investment is likely to be materially less volatile for the next 12 months than other equities. Since many companies find this difficult to demonstrate, EIOPA suggests extending the 'beta method' already used for unlisted equity portfolios to strategic equity investments as an optional method to make this demonstration. The "beta method" is a static formula applied to fundamental data of target equity investments.

Based on this approach, an equity investment has a sufficiently lower risk if it has a beta below 0.5641 for type 1 equities (22% over 39%) and below 0.4590 (22% over 49%) for type 2 equities. EIOPA suggests to introduce the beta method only as an optional method to assess lower risk. Furthermore, application of this method is restricted to investments in companies established in the EU or EEA with a majority of revenues from EEA or OECD countries.

Additionally, EIOPA suggested following clarifications on the strategic equity investment treatment:

- The required minimum ownership and control threshold of 20% currently set out in the regulation should be kept due to control being the mechanism to influence volatility.
- Strategic equity treatment requires the demonstration that the equity investment is not significantly correlated to the performance of the insurance undertaking. The example given is of a participation being a service company handling the claims of the insurance company; the performance of the participation depends on the performance of the insurer and should therefore not receive a beneficial treatment.
- The strategic equity treatment should only apply to related companies. Hence, 'strategic equity investments' should be renamed to 'strategic participations' in order to avoid misunderstandings seen in the past.

### Symmetric adjustment

Besides assessing the design and calibration of the fixed equity risk charges, EIOPA has also assessed the need for re-calibrating the symmetric adjustment. The symmetric adjustment is an additional variable capital charge published by EIOPA on a monthly basis ranging between +/-10%. The underlying equity index used for the calculation of the symmetric adjustment should reflect the composition of the average equity holdings of European insurance companies and may therefore require an update of country weights from time to time.

However, EIOPA proposes no change due to the high overall correlation among the main stock markets in Europe.

### Interest rate risk

Under the SCR standard formula, the interest rate risk is modeled as a relative shift of the risk-free interest rate curve, with relative shocks declining by maturity. In the rising interest rate scenario ('shock up' scenario) the relative shocks range from +70% for a maturity of one year to +20% for maturities beyond 90 years, subject to a minimum increase of 1% for all maturities. In the decreasing interest rate scenario ('shock down' scenario), the relative shocks range from -75% for a maturity of one year to -20% for maturities beyond 90 years, with no shock applied to negative interest rates.

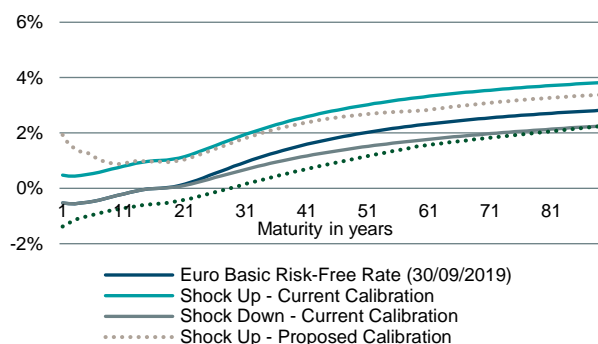
Overall, EIOPA upholds its view that a relative shift approach is the most appropriate approach to model the interest rate risk in the standard formula because it is:

- \_ a simple and transparent approach,
- \_ purely data-driven,
- \_ risk-sensitive applicable to any yield environment.

But at the same time, EIOPA finds that the current calibration of the relative shift model severely underestimates the actual interest rate risk as interest rate movements observed recently have been much stronger than in the past. Additionally, the current approach does not stress negative rates in the down scenario despite the empirical reality that negative rates can continue to decrease.

In order to address these issues, EIOPA proposes to combine the relative shift in interest rates with an additional absolute shift component which will also apply to negative interest rates. This approach is consistent with the technical advice EIOPA provided in 2018 and hence does not come as a surprise. According to EIOPA, this combined approach is also widely used by internal model users.

**FIGURE 2. EURO RISK-FREE RATE WITH CURRENT AND PROPOSED SHOCKS AS OF 30/09/2019**



Source: EIOPA, DWS International GmbH. As of: October 2019.  
For illustrative purposes only

The chart above shows the risk-free Euro interest rate curve as of 30 September 2019 and the upwards and downward shock scenarios with both the current and proposed calibrations. In the falling interest rate scenario, the proposed shocks are larger than the current shocks for all maturities. For the rising interest rate scenario, the proposed shocks are also larger for shorter maturities but smaller for longer maturities. Overall, the proposed calibration will most likely result in a significant increase in SCR for insurance companies that have material duration gaps.

Recognizing this impact, EIOPA's 2018 advice included the suggestion to implement the new calibration – especially for the downward shock – gradually over a period of up to three years. This gradual implementation advice will be reviewed as part of the full impact of measures in the 2020 Solvency II review process.

Additionally, methods for deriving the underlying risk-free Euro curve were reviewed. In particular, EIOPA reviewed several options for improving the extrapolation of the Euro curve. Most importantly, EIOPA examined extending the last liquid point (LLP) of the curve – i.e. the maturity after which extrapolation of interest rates starts – from 20 years to 30 years or 50 years. This proposal is based on the latest assessment of the Euro swap markets suggesting that 50 years is the largest maturity for which swaps are traded in deep, liquid and transparent markets. Increasing the LLP will also have a significant impact on the SCR ratio of insurance companies. According to EIOPA, extending the LLP to 30 years or 50 years will result in a decrease in the average SCR ratio of EEA insurers from 252% to 223% (-29 p.p.) and 203% (-49 p.p.), respectively. Increasing the LLP will especially hurt insurers with larger duration gaps. For example, for German insurers, EIOPA expects a decline

in the SCR ratio of up to -182 p.p. for an increase of the LLP to 50 years.

The final calibration of the relative and absolute shock components used for stressing the Euro curve will also depend on the final calibration of the LLP. The calibration shown in Figure 2 is based on the current LLP of the Euro curve set at 20 years.

## Spread risk

For bonds and loans, the spread risk SCR is determined as a function of the credit quality step (CQS) and modified duration. In general, EIOPA finds that the current calibration of the spread risk charges is relatively mild compared to the calibrations originally proposed by CEIOPS in 2010 and by EIOPA in 2011. This is prevalent in bonds and loans with a duration between 1 and 10 years where the current spread risk charges are approx. 30% lower than the original calibrations. With increasing duration, the differences between the current and proposed calibrations decreases. In EIOPA's analysis, these lower capital charges might not reflect the actual spread risk and could make fixed income investments more attractive than other investments. This is also true for EEA sovereign bonds that are subject to a zero capital charge per default.

EIOPA also evaluated a framework for lower capital charges for specific long-term investments in bonds and loans. In order for bonds and loans to qualify as long-term, similar conditions as for long-term equity investments could be imposed. The calibration of the lower capital charges for eligible bonds and loans could take inspiration from the matching adjustment which allows for reduced risk charges for all investment grade instruments. In EIOPA's consideration, given that the requirements for the use of the matching adjustment are more restrictive, only 50% of the reduction factor for the matching adjustment would be viewed as appropriate for such a framework (see figure 3).

In the end, EIOPA concluded that there is no need to further incentivize (long-term) fixed income investments as:

- \_ Solvency II may already over-incentivize fixed income investments due to lower spread risk charges
- \_ Matching adjustment is already available
- \_ A new long-term treatment would also be inconsistent with the 1-year Value-at-Risk (VaR) framework.

**FIGURE 3: PROPOSED REDUCTION FACTORS FOR LONG-TERM INVESTMENTS IN BONDS AND LOANS**

Credit Quality Step (Credit Rating)	Reduction factor Matching Adjustment	Proposed reduction factor
CQS 0 (AAA)	55.0%	27.5%
CQS 1 (AA)	50.0%	25.0%
CQS 2 (A)	40.0%	20.0%
CQS 3 (BBB)	25.0%	12.5%
CQS 4 (BB)	0.0%	0.0%
CQS 5 (B)	0.0%	0.0%
CQS 6 (CCC)	0.0%	0.0%
Unrated	0.0%	0.0%

Source: EIOPA. As of: October 2019

## Property risk

To date, Solvency II sets a uniform risk charge of 25% for all real estate investments irrespective of their geography or sector. Due to limited market data available, the 25% shock was calibrated solely based on data for the UK real estate market which is deemed to be the most volatile property market in Europe. Hence, the high risk charge of 25% was criticized by many insurance companies as not being representative for other real estate investments outside the UK. Overall, EIOPA shares this view but does not see a sufficient improvement in availability of any property indices which would allow for a re-calibration of the existing shock for different real estate markets.

Thus, EIOPA asks insurance companies (especially internal model users) for input on reliable data sources which would help to better calibrate the risk of real estate investments.

## Conclusion

Overall, EIOPA describes the proposed changes to the market risk module as an evolution rather than a revolution.

Our view is that the most significant proposal is the re-calibration of the interest rate risk, which may have a significant impact on the SCR and may encourage insurers to further reduce their duration gaps.

Although the design and calibration of equity risks has received particular attention, in the end EIOPA has not proposed significant amendments to this sub-module.

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