



Capital generation: a closer look at asset returns

The Solvency II regulation defines no metric on how to report on profitability or earnings. The insurance industry has responded by developing its own approach and calculations for profitability: capital generation. The structural part of capital generation, Net Capital Generation ('NCG'), is important since some insurance companies have explicitly linked their dividend policy to it and DNB takes it into account in providing a declaration of no-objection (DNO) for dividend payments. NCG can be seen as market practice, which analysts use in their valuation of insurers as well.

For life insurance companies, the largest components of NCG generally include (but are not limited to) excess return on asset portfolio, UFR drag and release of prudence (SCR and Risk Margin). The release of prudence is impacted by reinsurance of actuarial risks (e.g. longevity hedge). Entering in these reinsurance contracts result in a lower release on prudence, increasing the necessity of the excess returns component.

We generally observe in the Dutch market that the substantiation of the methodology and assumptions for excess returns is limited or lacks quality. In this article, we highlight challenges in the implementation of the methodology and setting return assumptions.

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FRAMEWORK FOR NCG EXCESS RETURNS

Below we have provided the four components which should be considered as building blocks for establishing a successful framework for excess returns.

1. Governance

In general, a large number of stakeholders are involved in the process—from setting up the methodology to the reporting of the numbers and expert judgement is used. A solid governance process is essential to ensure proper alignment between all stakeholders (business unit and group) and a sound NCG framework.

2. Methodology

The methodology and assumptions should be explicitly stated, including a substantiation and impact analysis of alternative assumptions. This should also be discussed in relation to related reports such as Medium term plan, ALM, SII PIM and ORSA.

3. Parameter setting

This step covers the underpinning of the parameters used. This step can be particularly extensive, as it is important to clearly specify the methods and approaches applied to obtain these parameters.

4. Calculation, tests and reporting

Tests and controls should be performed to verify if the return parameters are sensible, after which the calculation can be performed, and the figures be reported.

In the remainder of this article we focus on steps 2 and 3.

METHODOLOGY

In the market differences are observed regarding the design decision and assumption used. The most important design decisions are discussed below.

1. Deterministic vs. stochastic: An important design decision is whether the framework is based on deterministic or stochastic scenarios. If a stochastic framework is used then in addition to the mean, the volatility of the asset returns needs to be estimated. We see that an increased number of vendor solutions have become available to perform these stochastic calculations.

2. Balance sheet composition: To reduce complexity, an insurance company may assume that the composition of the balance sheet remains unchanged in the balance sheet projection, i.e. both assets and liabilities have the same cash flow patterns. This does not hold for individual assets when time passes. In addition, management actions and ALM decisions will change the composition of the portfolio. With stochastic tooling changes to the portfolio could be modelled as well.

| Report | Description | Time horizon | Nature of analysis | Board responsibility |
|----------------------------|--|--------------|--------------------|----------------------|
| Medium term plan (or ORSA) | Medium-term plans outline the company's direction for several years into the future. Asset returns are used to project the relevant balance sheets. Typically, several deterministic scenarios are calculated. | 1-5 years | Forward looking | CFO |
| SII PIM SCR | A company's Internal Model calculates the required capital. Asset returns are used to calibrate the distribution function of total return indices, where the mean is considered. | 1 year | Backward looking | CRO |
| ALM | ALM is used to calibrate the Strategic Asset Allocation ('SAA'). Asset returns are used to project the relevant balance sheets. Typically, a stochastic approach is taken. | 5+ years | Forward looking | CFO / CIO |

3. Risk-free rate: This relates to both the interest rate view taken and the curve used. Regarding the interest rate view, multiple options exist: interest rates will follow the forward curve (no view); there will be a long-term mean reversion; or the yield curve remains constant.

4. Reinsurance: (Future) reinsurance agreements will impact the release of prudence. Due to reinsurance less prudence will be available, indicating that the future NCG is brought forward in the current SII ratio, leaving less room to generate future capital.

Furthermore, as noted before, it is important to be aware of related reports to determine to what extent assumptions and methodologies need to be aligned or leveraged. In the table above the relationship of NCG to other reports is given.

PARAMETER SETTING

Especially in the case an insurer planning to enlarge their reinsurance agreements or already has a lot of reinsurance agreements, the excess return component will be more important in the NCG. As by reinsuring the insurer does not only mitigate risk exposure, but consequently also reduces the risk premiums that can be earned. This section discusses the parameter setting relating to both fixed income as well as total return categories (equity and property).

Fixed Income

The methodology of fixed income, incorporate the following key parameters:

- 1. Excess return:** One of the key contributors to NCG is the excess return on assets, where two approaches can be taken: the current implied spreads per category (time-varying and point in time) or long-term average (annually reassessed and through the cycle).
- 2. Spread return vs. spread:** To determine the return on the assets, there are two different approaches. Spread return is what you 'actually' make on the portfolio as a return, which is usually lower than the (credit) spread. Spread return includes carry, spread changes, default and migration. However, it is more challenging to calculate, therefore spreads are a more commonly used concept.
- 3. Quantification of 'cost' components:** Several 'cost' components need to be considered, such as investment costs (mortgages and external funds), cost of default, cost of migration and other costs as reinsurance premiums. This information can be leveraged from Counterparty Default Risk, Dynamic VA or IFRS9 models.

Total return categories

The total return categories include equity and property. In this article, we focus on the equity risk premium.

Though equity risk premium plays an important role in the financial industry, there is no common view on how to estimate this premium. Focusing on only one approach would lead to vulnerability of the chosen approach, including a high degree of model and parameter risk. By using a range of approaches to estimate the equity risk premium parameter this can be avoided¹:

- 1. Historical approach:** historical returns of stocks and bonds over a long period of time are used to estimate the equity risk premium.
- 2. Survey approach:** CFOs of large institutions are requested to provide their estimate of the equity risk premium.
- 3. The implied equity approach:** risk premium estimates are obtained from current equity prices or cash flow / dividend estimates.

CONCLUSION

In this article we have provided a practical approach to documenting the methodology and assumptions underpinning the NCG for excess returns. In addition, we have provided some key design decisions which must be considered when setting up the framework. Following these steps supports management in establishing a successful and sound market practice methodology aligned across all stakeholders. ■

¹ – See Damodaran (2014).