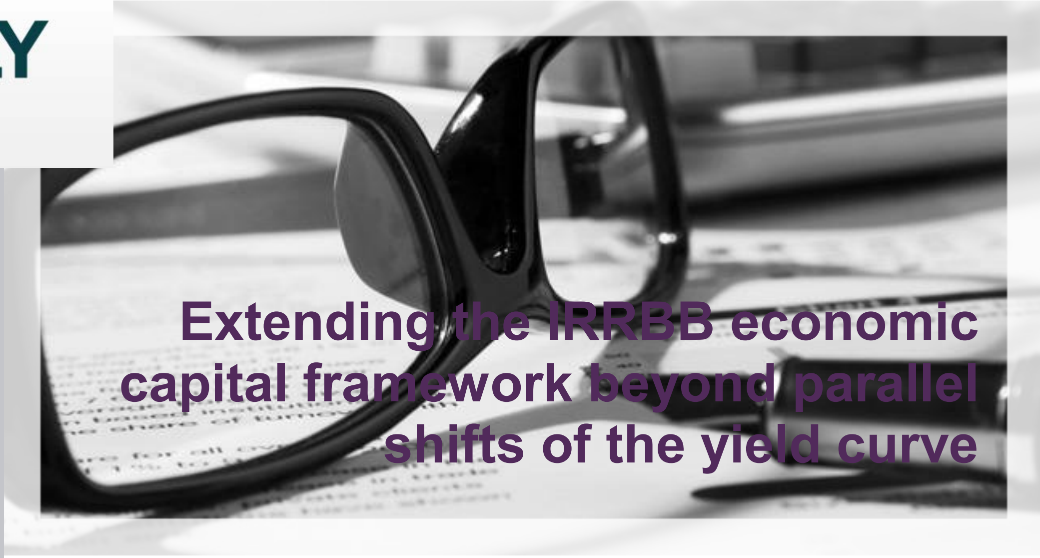

Extending the IRRBB economic capital framework beyond parallel shifts of the yield curve

Abstract

The client required assistance to extend its economic capital framework for the market risk component of banking book beyond the sole standard parallel shift of the yield curve.

Avantage Reply provided a consistent methodology to define and calibrate a more diverse set of interest rate scenarios. The impact on economic capital was also studied.

The developed framework is an improvement in regards to both internal risk management and regulatory requirements.

THE CLIENT

The client is a global financial institution with a strong European base offering retail and commercial banking services.

THE CHALLENGE

At the onset of the project, the client's system for the market risk component of its retail portfolios – mostly mortgages and saving accounts – relied on the sole standard parallel shock of the yield curve, where all interest rates are shifted by the same amount irrespective of their tenors. This was not sufficient to properly capture interest rate risk, so additional yield curve shocks, such as steepening or tilting, had to be considered. Including additional risk factors was required to increase the risk sensitivity of economic capital for interest rate risk in the banking book ("IRRBB"). Initiated by the recommendations from the Model Validation team, the project objectives were well aligned with recently published EBA IRRBB guidelines (EBA/GL/2015/08).

APPROACH AND SOLUTION

To define a more diverse set of interest rate shocks, two approaches were investigated, namely a Principal Component Analysis and the Nelson-Siegel model. Avantage Reply consultants performed calibration and quantitative analyses of both approaches for all currencies relevant to the bank. Further validation and discussions with the client resulted in the choice of the model most suited to the client's needs. The second step of the project was to evaluate the economic capital required to cover potential losses in the face of the formulated interest rate scenarios, given the bank's risk appetite. In addition, behavioral aspects of the portfolios were also included in the scope; in the case of mortgages, for instance, interest rate shocks were assessed in combination with prepayment shocks to study the interplay between market and client behavior risks.

RESULTS AND BENEFITS

The client was provided with a consistent and empirically-grounded methodology to formulate a diverse set of interest rate scenarios and to assess economic capital for interest rate risk in the banking book which is more risk-sensitive and robust. The framework is a significant enhancement for both, internal measurement and management of interest rate risk, but also for conformity with regulatory requirements. Indeed, the resulting scenarios are in line with the aforementioned EBA guidelines: adequate to identify all material interest rate risks and adapted to local market rates and circumstances.

Avantage Reply, part of the Reply Group, is specialised in Financial Services with a focus on Compliance, Risk, Treasury and Capital and Financial Performance Management. With offices in Amsterdam, Brussels, Frankfurt, Hamburg, London (head office), Luxembourg, Paris, Milan, Munich and Rome, Avantage Reply counts some of the world's most significant financial groups among its clients, including well-known and respected organisations in the Banking, Insurance, Investment Management and Services, and Post Trading Services sectors. The firm's delivery capabilities cover advisory services (Compliance/Risk/Finance/Treasury Subject Matter Expertise), Program and Project Management, Business, Functional, and Data Analysis.
For further information: www.avantagereply.com

Reply [MTA, STAR: REY] is a multinational consulting company specialising in the design and implementation of solutions responding to a rapidly changing business environment, including regulation and new communication channels and digital media. From its offices across Europe, Reply supports clients across the major industries: retail; banking and insurance; telecommunications and media; manufacturing and services; and the public sector.
For further information: www.reply.eu