Interest Rate Risk and Credit Spread Risk in the Banking Book

Abstract

The European subsidiary of a leading financial services company had identified that its growing investment portfolio was exposing it to increased risks. Avantage Reply assisted the client in identifying and better quantifying the risks posed by its investment portfolio.

The two main risks were interest rate risk and credit spread risk in the banking book.

For the former, interest rate risk, Avantage Reply helped leverage a group model to be used by the local entity. This model provided management with a better view of the risks to which the entity is exposed.

For the latter, credit spread risk, a new historical Value-at-Risk model was developed specifically for the European entity.

Both improvements provided management with better tools to compare the riskiness of various investment strategies and comply with all regulatory requirements forrisk quantification.

THE CLIENT

The client is the European banking subsidiary of a leading financial services company. The European entity offers a range of services focused on asset servicing – mainly global custody and collateral management – to international market participants.

THE CHALLENGE

The client’s business is mainly fee-driven but, in order to ensure liquidity, it takes deposits and provides some lending. The result is a large net deposit balance, which it invests partially in an investment portfolio.

The client’s risk focus had been mostly on operational risk and credit risk, but the local management and the regulators had identified that the growing investment portfolio created potential risks that were currently not well captured. Therefore, the client engaged Avantage Reply to assist it in identifying and quantifying the risks posed by the portfolio.

Additional complexity came from the management structure of the portfolio. The portfolio is held by the European entity, while the portfolio management was largely performed by the parent Treasury team in the United States. As a result, local management did not have a detailed view of the risks posed by the portfolio and how it was managed.

APPROACH AND SOLUTION

The client’s investment portfolio being fully classified as Available-For-Sale, it exposed the client to two major risks: Interest Rate Risk in the Banking Book (IRRBB) and Credit Spread Risk in the Banking Book (CSRBB).

IRRBB

Avantage Reply began by benchmarking the client’s current IRRBB model against the regulatory requirements (BCBS 108, CEBS guidelines and EBA/CP/2013/23) and best practices. This exercise identified important shortcomings including that the model:

- Did not take account of liabilities; and
- Only considered parallel interest rate movements.

The model required significant improvements; however, instead of developing a new model, we identified that an existing Value-at-Risk model used by the parent corporation that we benchmarked against European regulatory requirements and adapted for use by the European entity.

Part of the adaptation process was to investigate whether the assumptions and parameters of the corporate model were also relevant for the European entity. The corporate model relied on a sub-model to estimate the interest rate sensitivity of the deposits. This sub-model strongly drove the overall result, but its outputs were out of line with management's expectations. Closer inspection revealed that this model was calibrated based on group-level data that was not applicable to the European entity. Therefore we developed an alternative sub-model using data specific to the European business.

CRRBB

Avantage Reply developed a new historical Value-at-Risk model using the client's existing pricing tool. In the process Avantage Reply assisted the client by:

- Finding historical time series to be used by the model;
- Developing, implementing and documenting the new model;
- Obtaining validation of the new model.

RESULTS AND BENEFITS

For IRRBB the new model led to significantly lower capital requirements, while at the same time providing a better view of the interest rate exposure. In addition, the new model achieved full compliance with regulatory requirements.

For CSRBB the new Value-at-Risk model allowed the bank to monitor and capitalise credit spread risk. The new model was integrated into the ICAAP process to ensure that all material risks were covered. In addition, this tool was used to quantify the riskiness of various investment options.