Impact of rising interest rates on ALM models

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Banks transform the various resources at their disposal, such as sight deposits, interest-bearing deposits, secured and unsecured borrowing into assets, mainly fixed-rate loans granted to their customers. This transformation activity is a source of income for banks, called net interest income (NII), but also of risk due to the differences in repricing-matching that can exist between assets and liabilities. The role of Asset & Liability Management (ALM) is precisely to manage these balances to, first, respect regulatory ratios and internal risk limits; second, finance the activity at the best funding cost and protect against any liquidity crisis and third, manage the interest rate position optimally to preserve the NII.

Anticipating client behaviour in an uncertain and rapidly changing environment

To do this, ALM departments must be able to project the evolution of the balance sheet and the main financial aggregates over time, using run-off models to anticipate the future out-standing amount or cost associated with all balance sheet items. However, many options are implicit in a universal bank's balance sheet. For example, there is the possibility of early repayment of mortgages with a ceiling on compensation, the option of withdrawing all or part of the amounts placed in current or interest-bearing accounts, and rules for adding to, closing or converting home savings plans. All of which require a good understanding of client behavioural risk.

A complex task in the current and unusual environment

On the one hand, short-term rates have been negative for a very long time - the E3M rate has been negative since April 2015 - and bank and money-market investments have yielded very little interest. This has probably led depositors to leave a significant portion of their savings in their sight deposits. With short-term interest rates beginning to rise, how can this risk be assessed through ALM models when there is no precedent for doing so? While also knowing that an erosion of deposits would have a major impact on the cost of funding, the interest rate position, liquidity needs and ultimately on banks' interest margins.

On the other hand, long-term rates have risen sharply over the past six months by around 170 bps for the 10-year swap rate. This rise in long-term rates, which is historic in terms of its magnitude in such a short period, precedes an increase in short-term rates, or at least that is what is anticipated through market forwards. The phenomenon of early repayment of mortgages, which has been particularly significant over the last ten years, is likely to slow down sharply with higher lending rates. Indeed, mortgage rates have already risen by +60 bps on long maturities, which will lengthen the duration of assets and affect existing balances.

In addition, the ALM risk assessment models are used in a reference scenario, reflecting market expectations at a given time. This reference scenario, on which projections are built, is profoundly different from what it was six months earlier. Parameterised to operate in a certain environment, the models can return significantly different values in a different environment leading to internal or regulatory limits being exceeded. Thus, while no significant change has been observed in banks' balance sheets - the amount of sight deposits has even tended to increase -, certain indicators such as the Standard Outlier Test

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(SOT) 15 or interest rate gaps may approach or even exceed their limits depending on the way the models project outstandings in these new conditions.

The purpose of models is to manage risk and protect bank revenues

The use of models is not an end in itself. They must make it possible to anticipate and measure the risks to which institutions are exposed and to put in place effective protection for this exposure against any variation in risk factors. This hedging can take different forms, such as a natural matching of assets and liabilities by resources or hedging based on derivatives or optional instruments. However, two conditions must be met to achieve this:

- Have models with good predictive capabilities

- To be able to forecast the future evolution of risk factors, in particular, interest rates

The challenge for ALM is multiple:

1) Respecting internal limits and regulatory indicators

Interest rate risk is subject to internal and supervisory supervision. The usual risk indicators, gaps, NII, and economic value sensitivity are subject to limits that the rise in rates observed and anticipated in the forecasted scenarios can lead to exceeding. As such, the 15% limit of the SOT can become a bitter pillar.

2) Preserving the net interest income

A rising rate environment penalises the bank's interest income by putting pressure on the transformation margin. The resource is more expensive because it is indexed to short-term rates, while interest income takes longer to integrate the increase because of its greater inertia.

3) Managing exposure to interest rate risk

Everything depends on the bank's position. If the bank has a surplus of fixed-rate assets - a so-called transformation position - an increase in interest rates will penalise future revenues. On the other hand, if the bank has a surplus of fixed-rate liabilities putting it in a de-transformation position, an increase in interest rates will have a beneficial effect by increasing future revenues.

The hedging instrument most often used by banks to cover their exposure is the interest rate swap. Structurally, the banks set up borrower swaps that pay a fixed rate, the market value of which has risen sharply as a result of the rise in interest rates observed in recent months.

4) Forecasting and managing future liquidity needs

Outstanding sight deposits are currently at their highest level ever. This abundant liquidity allows banks to finance their activities at a lower cost. A rise in short-term rates could force banks to raise other, more expensive types of resources.

Conclusion

Rising rates put ALM models to the test. These models largely determine the financial management strategy of banks and, ultimately, their revenues. For the time being, the recent rise in long-term interest rates has had little impact on client behaviour and the structure of

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balance sheets. The market value of hedging instruments has appreciated, the transformation margin has been reduced with the repricing of interest-bearing deposits (Livret A at 1%), and property loans are being produced at a reduced margin. In a profoundly changing interest rate environment, it can be difficult to predict customer behaviour, yet this is the challenge that ALM models must meet. Profitability now depends to a certain extent on banks' predictive capacities.

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