

ALM – Basics

Asset Liability Management (ALM) addresses the risks that arise due to mismatches between a bank's assets and its liabilities, with a special focus on interest rate and liquidity risk.

For instance, with some of a bank's liabilities coming due, ALM may address the availability of borrowing capacity or identify feasible assets to be disposed of. Next to liquidity and credit risk, such as the solvency of a bank's debtors, ALM's other major focus is on a financial institution's exposure towards interest rate risk: As banks tend to borrow short-term (fixed or floating) and lend long-term (fixed or floating) mismatches are typical and part of a bank's business model. Whereby, changes in interest rates can have adverse effects on a bank's earnings as well as its economic value.

Changes in interest rates impact both, a bank's interest income as well as its interest expenses, together affecting a bank's net interest income. – However, changing interest rates also impact the respective values of both, a bank's assets as well as its liabilities, which in turn will affect the value of a financial institution's equity, therefore also its capital. – Obviously, also other factors than changing interest rates can lead to price changes in assets, such as (non-interest-related external) capital markets-related factors or (bank-internal) operations-related factors.

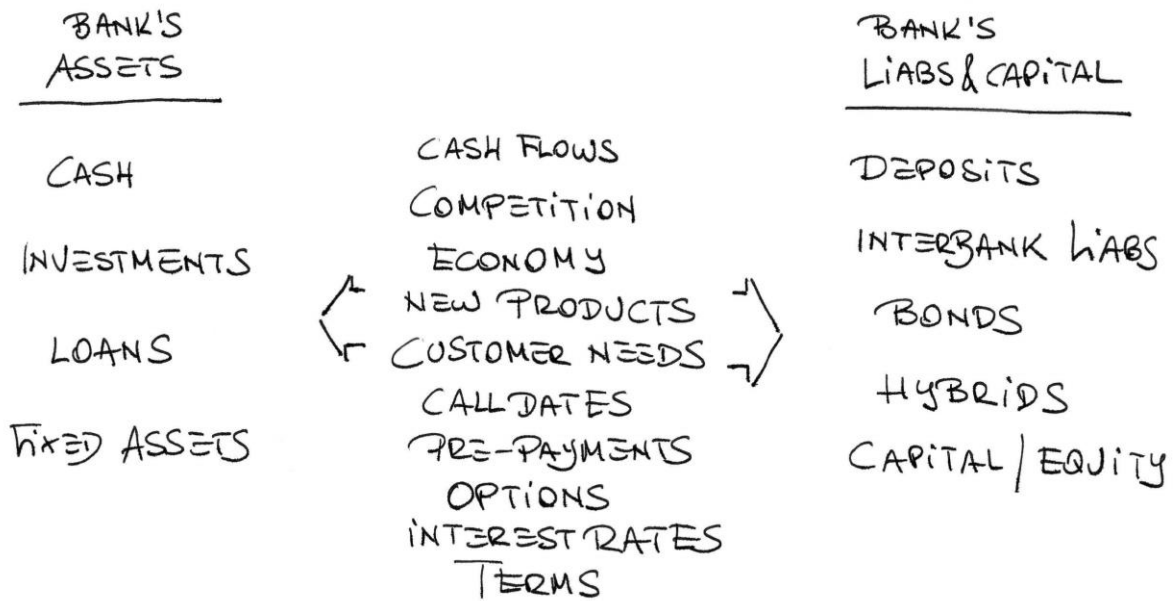
The so-called maturity gap model measures to which degree changes in interest rates impact a bank's net interest income (indirectly also liquidity). – To calculate this, in a first step, the entire bank's balance sheet's interest rate-sensitive assets and liabilities are grouped into time buckets according to maturity. For each time bucket the maturity gap equals the difference between its respective interest rate-sensitive assets and interest rate-sensitive liabilities. If in a certain maturity bucket rate-sensitive assets exceed rate-sensitive liabilities and interest rates were to increase, then the net interest income of that very bucket will increase as well. If interest rates fell, this were the other way round.

The so-called duration gap model, on the other hand, measures to which degree changes in interest rates impact a bank's capital position, in essence its net worth. Whereby the duration concept concludes that assets with longer duration react more price-sensitive to changes in interest rates than shorter ones. – The duration gap model weighs the respective duration of each single asset and each single liability position to obtain the net position of the combined asset duration and liability duration. If the duration of a bank's assets exceed that of its liabilities (which is almost always the case), then the duration gap is positive. Hence, with interest rates increasing, the price of the total assets is to suffer more than that of the total liabilities and the value of the bank's equity is in consequence to decrease. If, however, the duration gap is close to zero, then changes in the interest rate environment will not (or hardly) impact a bank's value of equity: It can be regarded immunized. Therefore, the duration gap analysis takes into account both, the timing and market value of cash flows and their straight impact on the value of a bank's capital position.

As a matter of fact, the execution of an integrated ALM strategy provides not only recommendations along implementing on-balance sheet transactions, but also addresses feasible alternatives, such as removing risk through off-balance sheet hedging as well as through securitization.

These days, simulations are an integral part of ALM to assess and optimize risk-return profiles as well as risks in regards to liquidity, profitability and direct equity impact of a bank's asset and liabilities portfolio. Part of this are scenario analyses addressing the issue of uncertainty associated with the future direction of interest rates. Whereby this approach allows the analysis of isolated attributes, such as "what if"-simulations. However, whether simulation analysis (with its attendant controls and ratification methods) can effectively capture the dynamics of yield curve evolution and interest rate sensitivity of key financial variables is an ongoing debate.

ASSET LIABILITY MANAGEMENT



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