

ALM in 2023: Revisiting Economic Value of Equity (EVE)

Bank balance sheets were adversely affected in multiple ways by the speed and magnitude of the rising rate environment in 2022. Most noticeable was the effect on investment portfolios which experienced significant depreciation in market value, some to the point where capital became severely stressed and access to liquidity restricted. The problems had nothing to do with asset quality, poor lending practices or anything credit-related. It was entirely a function of the mathematics of rising interest rates. Even banks that owned nothing but US Treasuries experienced heavy unrealized losses. This fact and the lessons learned point out the critical importance of reliable tools and sound processes for managing liquidity and interest rate risk.

Asset/liability management (ALM) is the coordinated process of defining, measuring, and managing the financial risks faced by bank balance sheets including price risk, liquidity risk, and interest rate risk. Interest rate risk specifically is the risk to earnings or capital arising from movements in interest rates. Bank managers most often focus on the risk to earnings and income rather than capital. Capital at risk, however, is an important point of focus for sound macro-management, and it's something that warrants a deeper understanding.

Managing capital at risk involves measurement of the economic value of equity or EVE. This concept gauges the impact of interest rate changes on fair market values of asset, liabilities, and equity. Using discounted cash flows and standard valuation methodology, EVE captures the change in economic value of the bank even though that change may not be reflected in the bank's accounting books and records.

Consider the underlying market value of bonds in the investment portfolio. We all know that if interest rates rise, bond prices fall. This is the manifestation of price risk. If we're focused only on bonds in isolation, though, we can't know how the rate changes affect the overall economic value of the balance sheet. After all,

loans and deposits also have an economic value just like bonds. If market interest rates rise sharply, then existing fixed-rate loans will be worth less from an economic standpoint. Indeed, any financial asset or liability—anything with a cash flow—will have an underlying value that fluctuates as interest rates move up and down. Whereas the value of assets will move inversely to interest rates, the value of liabilities will move directly with rates. This is because existing fixed rate deposits become more valuable to the institution if market interest rates rise.

So how do we calculate economic value of equity? Remember from the standard accounting relationship that “assets equals liabilities plus owners equity.” If we can calculate the fair market value of assets and liabilities, then we can simply back into the value of equity capital. Moreover, if we can project the changed value of assets and liabilities under different rate environments, we can measure projected changes in EVE as well. This is precisely what we do when we measure interest rate risk from the economic perspective.

Monitoring changes in the economic value of equity is valuable in that it provides a comprehensive measurement of interest rate risk. It captures the effects of optionality and other important influences on value not contained in static accounting-type reports. The economic valuation method also reflects those sensitivities across the full maturity spectrum of the bank's assets and liabilities.

EVE relies on methodological and calculation assumptions, most notably the discount rate assumptions used to calculate the present value of assets and liabilities. It is relatively easy to calculate the market value of a bond with a fixed rate of interest and a fixed maturity. It is considerably more difficult and far less objective to calculate the economic value of a savings account with no fixed maturity and an administered rate subject to change by bank management. That's why institution-specific assumptions

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must be based on the unique characteristics of each bank. A robust bank-specific “open/close” study is preferable for most banks. A cookie cutter approach can give misleading results.

Measuring interest rate risk involves tracking dynamic and complex relationships within a bank’s balance sheet. To do it properly, we must have good input, reasonable assumptions, and sound methodology. The calculation and monitoring of changes in the economic value of equity is an important part of the process. And in the final analysis, we cannot properly manage the financial risk of our bank without a clear understanding of the big picture.

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