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(As published in American Banker)

Regulatory Capital Is to Economic Capital as Road Test Is to Driving

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With the advent of Basel III and the overall increase in regulatory requirements stemming from the economic crisis, financial institutions face regulatory capital mandates that have strained strategic plans more than ever. As a byproduct of the increased focus on regulatory capital, some financial institutions have reduced their attention to economic capital, arguing that with a binding regulatory capital constraint, economic capital is less relevant.

Some institutions have even taken the extreme strategy of completely focusing on regulatory capital. Unfortunately, this orientation misses the valuable and essential insight that the economic capital framework provides.

Economic capital provides critical insights that help institutions evaluate the risks associated with their business. It accounts for diversification, concentration effects and other economic risks when used in measures such as return on risk-adjusted capital or economic value added.

Regulatory capital, on the other hand, does not account for diversification or concentration. However, when it is binding, an institution faces tangible costs, in that additional capital is needed for new investments that face a positive risk weight.

Our research indicates that both regulatory capital and economic capital should influence decisionmaking.

Given two otherwise identical deals (including economic capital), the deal with lower regulatory capital is preferable. Alternatively, given two otherwise identical deals (including regulatory capital), the deal with lower economic capital is preferable. By ultimately combining the two measures into one unified approach to portfolio management, institutions can benefit from informed decisions.

Unfortunately, most institutions today take approaches that don't take both regulatory capital and economic capital into account. For example, they may take the maximum of regulatory capital and economic capital as the risk measure, or allocate top-of-the-house regulatory capital using economic capital. These approaches fail to differentiate across deals in a way that accounts for both regulatory capital and economic capital. Incorporating both regulatory capital and economic capital into a unified decision measure allows organizations to better optimize risk/return profiles, facilitate strategic planning and limit setting and define risk appetite.

While it is clear that firms focusing only on regulatory capital or economic capital will find managing both risk and performance challenging, it has been less clear how to formalize a decision-making variable that incorporates both regulatory and economic considerations.

Financial institutions face a fundamental question of how to choose a combination of investments that maximizes value for stakeholders. Models such as the capital asset pricing model are typically used to describe investment choices for individuals, but can also be used to describe a firm's optimal choice of investments. In fact, economic decision-making rules such as return on riskadjusted capital and economic value added can be derived using these same frameworks.

When introducing regulatory capital requirements, the organization now faces potential limits on their ability to borrow. This requirement does not change stakeholder preferences in that they still care about the economic risks related to factors such as concentration and diversification. Said another way, regulatory capital reflects an external constraint that is placed by the regulator and does not reflect the risk preferences held by stakeholders. Thus, the regulatory capital requirement enters into the original investment decision problem as a constraint on leverage.

The constrained optimization problem leads to unified regulatory capital/economic capital decision variables that have similarities with their traditional counterparts. The difference is that accounting for regulatory capital results in an effective regulatory capital cost or tax, which decreases the return on the investment.

The unified regulatory capital and economic capital measures are intuitive and have the following appealing properties:

» They account for the economic risks coming from concentration and correlation effects. An asset's risk measure will be higher if, all else being equal, it is more correlated with the portfolio or if it is more likely to be in distress.

» They account for cross-sectional variation in regulatory charges. Investments with higher regulatory risk weights are less attractive, all else being equal.

» They go beyond common approaches used to bring together regulatory capital and economic capital (for example, taking the maximum of regulatory capital and economic capital as the risk measure), which invariably lose important information.

» As with traditional measures, the institution can utilize a single unified decision variable to rank-order deals and portfolios in a way that accounts for economic risks and regulatory charges.

Accounting for the regulatory capital charge has economic significance as instruments that were otherwise viewed as "favorable" can become "unfavorable" in reference to the overall portfolio, and vice versa, when considering both regulatory capital and economic capital.

Regulatory capital and economic capital are both valuable in determining a firm's investment decisions. The challenge is that two variables cannot be used to rank-order investments at the same time, so a single decision-making statistic is necessary. This challenge can be addressed by following traditional portfolio theory and formalizing the notion of a regulatory constraint to derive a decision-making variable akin to return on risk-adjusted capital or economic value added that incorporates both regulatory and economic considerations.

As financial institutions focus more on their regulatory capital requirements, attitudes regarding economic capital have shifted. Some practitioners have reduced their attention to economic capital, claiming it has limited relevance, while others have attempted simplistic regulatory capital and economic capital integration techniques. Our view is that economic capital models are as relevant today as they have ever been.

Amnon Levy is head of portfolio research for Moody's Analytics.