Against the Grain: The Wisdom of Countercyclical Capital

by Anson J. Glacy, Jr.

Over the past two decades, capital regimes for financial intermediaries have evolved from simple, static estimates toward dynamic, risk-based methodologies that reflect the real nature, extent and mix of risks to which an organization is exposed. This evolution is undoubtedly a good thing, helping companies maintain capital in proper proportion to risk and, hopefully, stay solvent through extreme conditions.

However, these new ways of calculating capital requirements are relatively untested. We may be witnessing the results of such a test today. As of this writing, the global economy is almost surely entering a serious recession. One of the reasons for this appears to be inadequate capital provisioning. The failure of capital regimes to protect financial entities (and, by extension, their customers) has had unfortunate effects on the markets and economies of the world.

One contributory theory for why this happened is that today's capital regimes measure risk based on prevailing market conditions. Bull markets with low volatility levels and upward trajectories are taken to indicate conditions of low risk. In these conditions, capital requirements fall. Bear markets with high volatility and falling prices are taken to indicate conditions of high risk. In these conditions, capital requirements rise.

Taken as a whole, this approach to capital is pro-cyclical: it intensifies economic swings, enabling companies to take greater risks when times are good and restricting their options when times are bad. This is being seen today as companies facing severe balance sheet losses and asset depreciation are simultaneously told to post draconian levels of capital—achieving precisely the opposite of capital's intended effect.

Value at Risk Puts the Economy at Risk

An economic approach to the establishment of capital is based on measuring the calls upon capital resources that could happen under extreme events, the proverbial "tail" of the distribution. Today's evolving risk-based capital re-gimes (like Basel II and Solvency II, the European directive on insurers' capital adequacy effective in 2012) use the notion of value at risk (VaR) to make those establishments.

VaR-based capital implementations typically involve large, multivariate, normally distributed model components. Correlation factors are applied to reflect risk-factor associations but usually are stationary across the event space. The institution sets a benchmark probability of ruin, based on a desired level of financial strength, aligned with rating agency standards for a target rating. Capital is then set based on quantile statements about ruin: a given level of capital assures a 99.5 percent probability of continued solvency, for example.

Equity market volatilities (like the CBOE Volatility Index®, or VIX®) often used in VaR reckonings exhibit a well-known inverse relationship to the general levels of the stock market. Capital estimations based on these measures change as market conditions change—in precisely the wrong direction. Capital amounts based on these volatilities will tend to shrink as markets advance. This improves the return-on-economic-capital profile of an intermediation business, promotes the application of leverage and motivates management to sell more business. One could also say it adds fuel to the fire. In effect, VaR tells us, "Right now, things look pretty good, so go ahead and make big bets." The problem is that "right now" is not the appropriate time horizon for measurements of risk.

In fact, some have criticized Basel II from the beginning for enshrining pro-cyclical capital estimation methods. They point out that it establishes VaR-like capital levels by incorporating market-implied volatilities, requiring too little capital during economic upswings and too much during recessions. Instead of restraining lending during exuberant times, false asset bubbles are created that end in tears.

In the Solvency II framework, the minimum required capital is prescribed to be at the 99.5 percentile (i.e., one failure every 200 years). Assuming normality…

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$$\text{Required Capital} = \Phi^{-1}(0.995) = 2.58\sigma$$

…where Φ is the normal distribution function and σ estimates variability of company economic outcomes. The multiplier factor of 2.58 means that required capital expands and contracts at more than twice the rate of business risk. At the 99.95th percentile (one failure every 2,000 years) the capital multiplier is 3.29. Thus, small reductions in estimations of σ under the Solvency II framework can free up outsized amounts of capital.

Reversing the Thrusters: Implementing Countercyclical Capital

In fact, an opposite approach—one that is countercyclical—might serve us better. Countercyclical capital measures risk based on a more expansive time horizon than does VaR. For example, if financial intermediaries were required to evaluate loss potential by considering performance over the entire economic cycle, they could establish capital levels that counteract cyclical forces. This approach is consistent with a recognition that financial risk actually arises at the inception of a loan or insurance policy and lasts for its entire lifetime. So, instead of a market-implied measure of σ one could either reflect real-world risk dynamics observed over a full-cycle historical period or a rolling average of recent observations.

When times are good, companies can afford to hold excess capital on their balance sheets and have the resources to build it up. In effect, they should be saving for a rainy day. When the rain comes, companies need to spend down capital to protect themselves from ruin. During the middle part of this decade, risk spreads contracted to levels that made the intermediation business difficult. It seemed that all financial assets became "priced to perfection." The search for alpha became a consuming obsession for companies as they sought the slivers of a basis point necessary to keep their business models afloat. In the United States, leverage came to the rescue as the Federal Reserve graciously assisted in enhancing the risk/reward profile of an intermediation business through aggressive "bubble" management efforts.

A countercyclical capital regime would have restrained the over-reach during these times of tight risk spreads, making a whole raft of marginal intermediation projects uneconomic and therefore undone. At the same time capital would have been banked that could be of good use right now in arresting the de-leveraging spiral. Put simply, the good times would not be quite as good—but the bad times would not be nearly as bad. Few observers of today's economic turmoil would argue that a dose of such moderation is a bad thing.

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